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Bibek Karmacharya

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We are pleased to present the seventh issue of JBM. The Journal of Business and Management, JBM, is an academic journal published by the School of Business, Pokhara University. The Journal publishes research articles in management, economics, and related fields. The main objective of JBM is to provide a platform for disseminating knowledge that contributes to improving management practices in developing nations. It also provides a scholarly publication outlet for scholars. It promotes research in alternative paradigms for business management and economics. JBM enhances cooperation and communication among academics. We also seek to offer new perspectives on business management in line with our underlying commitment to a more ethical and sustained business culture. JBM envisages creating a new forum for the scholarly community by focusing on management issues in developing countries.

The Editorial Board would like to thank the authors and researchers who contributed to the seventh issue of JBM. Also, we express our sincere gratitude to all the peer reviewers, the Office of the Dean of Faculty of Management Studies, and the School of Business, Pokhara University. We anticipate critical feedback and constructive suggestions for improving the JBM in the upcoming issues.

The Editorial Board welcomes original research-based articles and expects your contribution, suggestion, and support for the upcoming issue.

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The Journal of Business and Management

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School of Business

Faculty of Management Studies

Pokhara University

Pokhara, Nepal

Email: [dhunganabharat.pu@gmail.com](mailto:dhunganabharat.pu@gmail.com)

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## List of Authors

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Thakur Prasad Pokharel, School of Engineering, Pokhara University, Pokhara, Nepal

Udaya Raj Paudel, Quest International College, Pokhara University, Lalitpur, Nepal

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# Determinants of Investor Awareness in Nepalese Capital Market

Bibek Karmacharya

School of Business, Pokhara University, Pokhara, Nepal

## Abstract

**Background:** Capital market investors have propelled the industry, and the stock market has worked as a facilitator; hence, in order to develop a successful market system, all information must be acknowledged and delivered to the acquisition and offering sectors. It is obvious that educating investment communities or stakeholders about their possible return on Investment, investment objectives, alternatives, decision-making processes, and so on might aid in the acceleration of capital market expansion. As a result, the research aims to increase investor awareness and stock trading in the capital market.

**Objectives:** The main purpose of the study is to explore the extent of awareness of common stock investors and analyze the determinants of investors' awareness in the Nepalese capital market.

**Methods:** The research design for the study is a survey research design, and convenience sampling was used to collect 250 samples from various brokerage houses within Pokhara valley. Data were collected with a structured questionnaire. Various analysis tools like Confirmatory Factor analysis and Path analysis were used to examine the relationship between Investor's awareness and its determinants.

**Results:** The result of CFA with fit indices of GFI=0.938, AGFI=0.913,  $\chi^2/df=1.233$ , RMSEA=0.031, CFI=0.896 and TLI=0.881 advocate that the measurement model has an excellent fit. Furthermore, path analysis results show that the majority of independent factors, including social learning and motivation, fundamental and technical analysis, and evaluation of investment alternatives, have a significant and positive impact on the dependent variable investor awareness.

**Conclusion:** The study highlights the importance of investor awareness for effective investment decisions and the growth of the capital market in underdeveloped economies like Nepal. Investors' understanding is essential for investment decisions and the long-term growth of the capital market. So, there should be a proper understanding of various determinants of investors' awareness and work accordingly.

**Recommendation:** Marketing campaigns, seminars, publications, and FM/TV shows, among many other means, should be used by regulatory agencies such as SEBON to inform the general public about the dynamics of risk and profit in the capital market.

**Keywords:** Capital market, confirmatory factor analysis, investor awareness, path analysis

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## Correspondence:

Bibek Karmacharya

bibekkarme@gmail.com

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**Introduction**

The capital market makes use of individual and institutional investors' savings to purchase shares, bonds, mutual funds, and other financial instruments (Beaver, 2002). These investments are then used for productive purposes in a variety of economic sectors with the potential to provide a higher return on investors' capital. One of the most crucial factors in a country's economic success is the capital market. Individuals and institutional investors in Nepal now have investment options thanks to the opening of the capital market (Kadariya et al., 2012). The degree of financial knowledge and literacy is essential for the market to develop healthily. Investor literacy, or understanding of the market or the financial environment, is referred to as investor awareness. The investor's performance and decision-making are affected by behavioral factors (Dhungana et al., 2018). The level of awareness usually measures the investor's exposure and knowledge or information about the industry as a whole (Obstfeld, 1998).

Investors in the capital market have fueled the economy, and the stock exchange has served as a lubricant. It is critical in this process that all information be recognized and distributed to the purchasing and selling sectors to build an effective market mechanism. The market's efficiency represents the reproduction of information into stock price, given that no information is free. Every piece of information, whether released by institutions or leaked as private information, has costs and advantages that should be included in the price of a security sooner or later (Devkota et al., 2021). The Investor may use this information to improve their investment judgments and to be aware of the facts that contribute to the effective functioning of the market. Security Board of Nepal (SEBON), the top regulator, offers limited awareness campaigns such as workshops and seminars, training programs, street campaigning, and so on. Listed corporations and brokerage firms have yet to recognize the significance of comparable schemes (Kadariya et al., 2012). Most stock investors lack timely and trustworthy information that may help them make reasonable investing choices. It is true that capital market growth may be expedited by teaching investment communities or stakeholders on their risk and return on Investment, investment goals, alternatives, investment decision making procedures, and so on (Baihaqqy & Sari, 2020). As a result, the research attempts to raise investor knowledge and stock investing in the capital market.

The Nepalese market still demonstrates a low degree of understanding and poor comprehension of the significance of capital markets, with variable investor risk attitudes, affecting individual investors' ability to make appropriate investment decisions. Investor awareness is synonymous with phrases such as investor literacy, investor education, investor knowledge, and so on since they all contribute to the development of attentive investors. The potential advantages of increased investor understanding in third-world economies are substantial. Thus, the study's proponents are aware investors serve essential watchdog functions, increasing the chance that regulatory authorities may uncover probable market abnormalities prior to their existence.



Aware investors may also better pick investment choices that are most suited to their unique circumstances, such as age, wealth, income, qualification, debt, and so on (Volpe et al., 2002). With the development in popularity of the internet, which may introduce tools for first-time investors into the securities markets, investor knowledge has become even more vital. On the other hand, awareness keeps them informed about the investment environment and gives tools to assist them identify the risks connected with their portfolios. Investor knowledge also aids in the development of investors' ability to defend themselves against fraud and other malpractices. This study is centered on three key issues related to common stock investors. Firstly, it aims to investigate the extent of awareness among these investors. Secondly, it seeks to identify the determinants that influence investors' awareness in the capital market. Lastly, the study questions whether the current methods of information dissemination and the efforts of concerned authorities are sufficient in creating awareness among common stock investors. By exploring these issues, the study aims to shed light on the current state of awareness among common stock investors and provide insights that can be useful for policymakers and stakeholders in the capital market.

## **Review of Literature**

### **Investor Awareness**

Investor awareness is a term used in investor relations, by public companies and similar bodies, to describe how well their investors, and the investment market in general, know their business. Its significance is that investors are expected to base their investment decisions on awareness and knowledge, and a lack of these may lead to a low profile amongst its peers in the market. Investor awareness is knowledge the investors have of a company (Kadariya et al., 2012). More the investors are aware; they can better choose investment alternatives that are most appropriate for them in terms of their personal needs, risk perception, wealth, and income level, etc. Simultaneously, awareness also helps to make the investors up-to-date with the investment environment and provides tools to assess the risks associated with their portfolios (Devkota et al., 2021).

The investor awareness helps investors to develop the skill to protect themselves against risk of loss, fraud, and other malpractices. The extent to which investors are aware of available financial assets depend on the incentives of asset suppliers to spread the information about the instruments they issue (Guiso & Jappelli, 2002). Investors are more reliant and dependent on market knowledge and sentiments, according to Karmacharya et al. (2022). Merton (1977) pointed out that awareness affects asset prices because those that are less widely known, and thus less commonly selected, pay a premium. Based on various past literature there are numerous determinants of investor awareness which are discussed as follows:

**Fundamental and Technical Analysis:** Fundamental analysis is a way of determining the value of securities by analyzing the issuer's financial data. It examines the issuer's revenue and

costs, assets and liabilities, management, and industry position. It is a stock trading approach that aims to determine the inherent worth of a stock by analyzing statistics such as revenue, expenses, projected growth, and the key competitors (Bonga, 2015). Technical analysis is an approach that relies on past market data and thinks that past inevitably repeats itself. It argues that accepting historical share price trends will aid in predicting future values under comparable conditions. Technical analysis ignores the value of the stock and instead considers trends and patterns created by investors' emotional response to movements. It looks only at charts and believes that all the company's fundamentals are reflected in the stock price (Bonga, 2015).

**Education and Training Programs:** The education and training programs offered by various public and private entities, including as workshops, seminars, and share training sessions, have a substantial impact on the degree of investor awareness. The educational degree of investors determines their comprehension of financial literacy and its impact on capital market investing decisions. Different levels of investor education influence the level of financial literacy comprehension; hence, the higher the level of education, the greater the Investor's grasp of financial literacy (Baihaqqy & Sari, 2020).

**Social Learning and Motives:** Most investors gain knowledge from others through social engagement, which is another way for stock market insights to disseminate. Individuals are more likely to become conscious of the stock market as a result of social engagement. Many investors are drawn to the Nepalese capital market for a variety of reasons, including capital growth, parental influence, dividends, and so on. As a result, social learning has a substantial influence on investor awareness (Sapkota, 2020).

**Evaluation of Investment Alternatives:** Individuals and institutional investors inside the equity market can choose from a variety of investment options such as treasury notes, corporate bonds, common stocks, preferred stocks, and so on. The process of assessing and evaluating numerous investment options on the basis of rate of return and volatility (Kadariya et al., 2012). The Investor's primary purpose is to reduce the risk of the Investment while maximizing the profit. The stock market exists to offer a forum for prospective buyers to put their funds to work by investing in stocks, and for those who already hold securities to freely and rapidly transform them to wealth. To attract investors, an effective securities market must include qualities such as choice, speed, and supervision (Sapkota, 2020).

**Regulator's Rules and Regulations:** Governing bodies like SEBON is one of the key players who can extend investor awareness in equity market. SEBON should build up rules and regulations that make capital market more aggressive and eye-catching to both investors and likely investors. Thus, the rules and regulations of SEBON have a significant impact on the level of investor awareness (Devkota et al., 2021). The establishment of institutional framework for carrying out ongoing investigations, researches, investor education, public awareness, and training programs should be used to build the capital market as a reliable and sustainable

channel for capital mobilization (Dhungana, 2013).

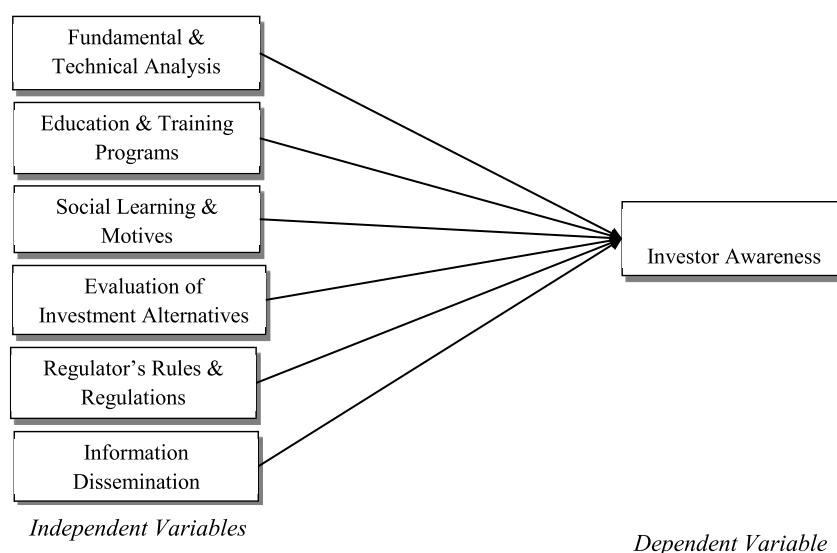
**Information Dissemination:** Well-timed and adequate information dissemination by corporations, NEPSE, brokers etc. have significant impact on the level of investor awareness. Information is one of the vital aspects which offer knowledge to the investors about the Investment and market (Devkota et al., 2021). The aware investors play very essential guardian or protector roles that continually supervise the market. This helps to boost the likelihood that the regulating bodies can identify the potential deviation in the market before it occurs (Sapkota, 2020).

Based on a review of several earlier studies, a specific research gap has been identified in the area of investor awareness in the Nepalese stock market. While previous studies have focused primarily on the risk and return factors, other variables that may affect investor awareness have not been fully explored. In addition, while investors in the Nepalese stock market express a keen interest in obtaining information, the extent to which they have access to market information has not been well studied. As a result, this study aims to address this gap in the literature by investigating the factors that influence investor awareness in the Nepalese stock market. The study seeks to identify and examine the possible variables that impact investor awareness, with the goal of providing a more comprehensive understanding of the factors that influence investment decision-making in this context.

Based on various past empirical literatures, the theoretical framework on investor awareness in Nepalese capital market consists of six independent variables i.e., fundamental and technical analysis, education and training programs, social learning and motives, evaluation of investment alternatives, regulator's rules and regulations and information dissemination; and dependent variable investor awareness. The theoretical framework of the study is given by following figures:

**Figure 1**

*Theoretical Framework of the Study*



Source: Sapkota, 2020; Devkota et al., 2021.

The literature review has focused on theories and empirical evidence related to fundamental and technical analysis, education and training programs, social learning and motives, evaluation of investment alternatives, regulator's rules and regulations, and information dissemination, which are the key variables in this study. It provides the necessary context for understanding the research questions and the theoretical framework that underpins the study. Based on the above theoretical framework, the current study's research hypotheses are as follows:

H1: Fundamental & technical analysis has positive impact on investor awareness.

H2: Education & training programs has positive impact on investor awareness.

H3: Social learning & motives has positive impact on investor awareness.

H4: Evaluation of investment alternatives has positive impact on investor awareness.

H5: Regulator's rules & regulations have positive impact on investor awareness.

H6: Information dissemination has positive impact on investor awareness

### **Materials and Methods**

The present study used a survey research design to investigate investor awareness among equity investors in primary and secondary markets. A convenience sampling method was employed to select the opinions of 250 frequent and non-frequent investors who were visiting stock broker firms within the Pokhara valley. A structured questionnaire, which consisted of single response, multiple responses, rating scale, and open-ended questions, was used to assess the level of investor awareness. To ensure the validity of the study, a structured questionnaire was developed using a rational approach. Firstly, a review of past empirical literature was conducted to identify relevant concepts and constructs that should be included in the questionnaire. This process ensured that the questionnaire was grounded in established theory and research. Additionally, feedback was solicited from a few investors visiting brokerage houses in Pokhara. This step was taken to ensure that the questionnaire was relevant to the study population and could be easily understood and answered. By incorporating the perspectives and feedback of investors, the questionnaire was more likely to accurately capture the information needed to address the research questions.

A pilot-test was conducted with 30 investors to further validate the questionnaire. The result of pilot study provided initial data that was used to identify any potential patterns or trends in the responses. This helped the researchers to further refine the areas of interest for further investigation. In this study, the reliability of the questionnaire used to collect data was evaluated using Cronbach's Alpha, a measure of internal consistency. Internal consistency refers to the degree to which items on a questionnaire are related to each other and therefore measure the same construct. A high value of Cronbach's Alpha indicates that the items on the questionnaire are highly interrelated and consistent in measuring the construct. In this case, the Cronbach's Alpha coefficient was found to be 0.782, which indicates a high level of internal consistency among the items in the questionnaire. This value is above the commonly accepted threshold of



0.7, which is considered acceptable for most research purposes.

To analyze the collected data, the researchers used statistical software programs such as SPSS version 26 and AMOS 22. These tools were used to manage and organize the data, as well as to perform various statistical analyses required to achieve the research objectives. Descriptive statistics, such as mean, median, and standard deviation, were used to summarize and describe the main features of the data collected in the study. Confirmatory Factor Analysis (CFA) was also conducted to test the validity of the questionnaire and to confirm that the items on the questionnaire were measuring the same construct. Furthermore, Structural Equation Modeling (SEM) was used to analyze the relationships among variables and to test the proposed theoretical model. SEM allows for the evaluation of both direct and indirect relationships among variables and can help to test complex theories and models.

## Results and Discussion

### Demographic Characteristics of Respondents

The demographic characteristics of the Investor seeking services in various financial institutions have been categorized as Gender, Age, Education, Marital Status, Occupation, Annual level of Investment and Monthly Income. The demographic data collected via the questionnaire were recorded and analyzed in percentiles using SPSS. Table 1 summarizes the demographic characteristics of respondents.

**Table 1**

*Demographic Profile of Respondents*

| Profile        | Group               | Frequency | Percent |
|----------------|---------------------|-----------|---------|
| Gender         | Male                | 208       | 83.2    |
|                | Female              | 42        | 16.8    |
| Age            | Below 20 years      | 42        | 16.8    |
|                | Between 20-29 years | 84        | 33.6    |
|                | Between 30-39 years | 66        | 26.4    |
|                | Between 40-49 years | 43        | 17.2    |
|                | Above 50 years      | 15        | 6.0     |
| Education      | SLC/SEE             | 17        | 6.8     |
|                | Plus Two            | 45        | 18.0    |
|                | Bachelor            | 116       | 46.4    |
|                | Master & above      | 72        | 28.8    |
| Marital Status | Married             | 62        | 24.8    |
|                | Unmarried           | 188       | 75.2    |
| Occupation     | Banking & Finance   | 58        | 23.2    |
|                | Private Business    | 99        | 39.6    |
|                | Government Employee | 41        | 16.4    |
|                | Student             | 38        | 15.2    |
|                | Others              | 14        | 5.6     |

|                            |                                |     |      |
|----------------------------|--------------------------------|-----|------|
| Annual Level of Investment | Less than Rs 100,000           | 140 | 56.0 |
|                            | Between 100,000 to Rs 500,000  | 58  | 23.2 |
|                            | Between 500,000 to 1000,000    | 49  | 19.6 |
|                            | More than 1000,000             | 3   | 1.2  |
| Monthly Income             | Below Rs 10,000                | 19  | 7.6  |
|                            | Between Rs 10,000 to Rs 20,000 | 72  | 28.8 |
|                            | Between Rs 20,000 to Rs 30,000 | 60  | 24.0 |
|                            | Between Rs 30,000 to Rs 40,000 | 32  | 12.8 |
|                            | Above Rs 40,000                | 67  | 26.8 |

*Source: Field Survey, 2022 and authors' calculation.*

According to Table 1, the gender distribution of the respondents, 83.2 percent are male, while the remaining 16.8 percent are female. The age distribution of the participants reveals that the majority, 60 percent, are between the ages of 20 and 40, with the remainder 40 percent being either below 20 years or above 40 years. The marital status distributions of the participants are married people accounting for 24.8% and unmarried people accounting for 75.2%. The respondents are highly educated, with the vast majority, 75.2 percent, having attended college or university, 18 percent having completed high school and remaining 6.8 percent attending SEE level. Further, Table 1 show that the 39.6 percent of the investors are engaged in private business, 23.2 percent in banking and finance, 16.4 percent as government employee and remaining as either student or others. Further, the annual level of Investment, majority of the investors has less than Rs 100,000, followed by between Rs 100000 to Rs 500000 as 23.2 percent. The monthly income of the Investor between Rs 10000 to Rs 30000 is 52.8 percent indicating that majority of the Investor earns moderate income.

## Reliability and Validity

### Construct Reliability

A research approach's reliability is defined as how well-founded and trustworthy its findings are. The reliability of the scales was evaluated using Cronbach's Alpha and Composite Reliability. The construct is considered reliable if both the CR and the Alpha are larger than 0.70 (Simşek & Noyan, 2013). All Cronbach's Alpha values are more than 0.70, with the least being 0.715 for Fundamental & Technical Analysis and the highest being 0.853 for Education & Training Programs, according to the basis of empirical evidence (Table 2). Furthermore, the model's Composite Reliability is better than 0.70, with the Fundamental & Technical Analysis having the least at 0.744 and the Education & Training Programs having the highest at 0.905. As a result, the construct's reliability is obviously indicated.

**Table 2***Construct Reliability of Scale*

| Variables                             | Cronbach's Alpha | Composite Reliability |
|---------------------------------------|------------------|-----------------------|
| Fundamental & Technical Analysis      | 0.715            | 0.744                 |
| Education & Training Programs         | 0.853            | 0.905                 |
| Social Learning & Motives             | 0.782            | 0.828                 |
| Evaluation of Investment Alternatives | 0.724            | 0.761                 |
| Regulator's Rules & Regulations       | 0.807            | 0.866                 |
| Information Dissemination             | 0.812            | 0.854                 |

Source: Field Survey, 2022 and authors' calculation.

**Construct Validity**

Validity is defined as the degree to which a concept is accurately measured in a quantitative study. The concept validity ratings for its two subcategories, discriminant, and convergent validity, are shown in Tables 3 and 4. According to the construct reliability table, the model satisfies the proposed criteria of  $CR > 0.70$  and  $AVE > 0.50$  (Simşek & Noyan, 2013).

**Table 3***Convergent and Discriminant Validity*

| Variables                             | Average Variance Extracted | Maximum Shared Variance |
|---------------------------------------|----------------------------|-------------------------|
| Fundamental & Technical Analysis      | 0.606                      | 0.523                   |
| Education & Training Programs         | 0.635                      | 0.594                   |
| Social Learning & Motives             | 0.697                      | 0.632                   |
| Evaluation of Investment Alternatives | 0.704                      | 0.661                   |
| Regulator's Rules & Regulations       | 0.697                      | 0.645                   |
| Information Dissemination             | 0.752                      | 0.701                   |

Source: Field Survey, 2022 and authors' calculation.

**Table 4***Square Root of AVE and Construct Correlation Analysis*

| Variables | FTA   | ETP   | SLM   | EIA   | RRR   | ID    |
|-----------|-------|-------|-------|-------|-------|-------|
| FTA       | 0.778 |       |       |       |       |       |
| ETP       | 0.318 | 0.797 |       |       |       |       |
| SLM       | 0.522 | 0.365 | 0.835 |       |       |       |
| EIA       | 0.459 | 0.542 | 0.427 | 0.839 |       |       |
| RRR       | 0.382 | 0.593 | 0.349 | 0.389 | 0.835 |       |
| ID        | 0.438 | 0.513 | 0.402 | 0.286 | 0.457 | 0.867 |

Source: Field Survey, 2022 and authors' calculation.

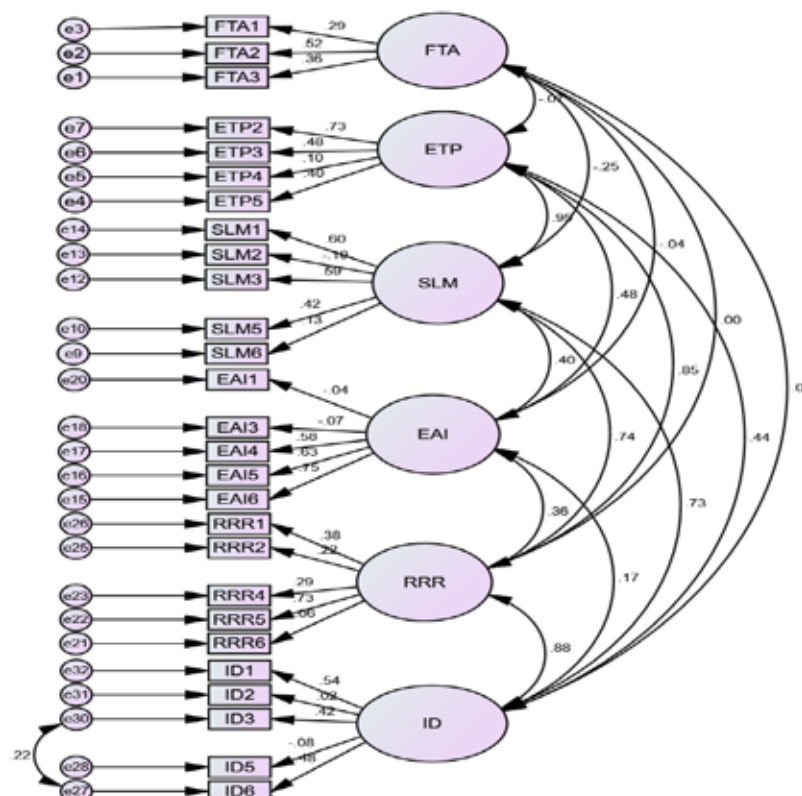
Additionally, the proposed requirements of MSV smaller than AVE and Square Root of AVE greater than Inter-construct correlation were fulfilled, confirming discriminant validity.

## Confirmatory Factor Analysis (CFA)

Confirmatory factor analysis is the first phase in data analysis using the structural equation modeling methodology to assess the model's components (Hair et al, 2010). The information gathered from participants was subjected to a confirmatory factor analysis utilizing structural equation modeling in AMOS (Version 22) and a maximum likelihood (ML) estimate (Byrne, 2010). The GFI, AGFI,  $\chi^2$ , and RMSEA absolute fit indices show that the CFA has a very good measurement model. The fit goodness indices (GFI and AGFI) show that the proposed model fits the collected data rather well, with values of 0.938 and 0.913, respectively. However, sample size influences GFI and AGFI values, which may be larger for models with weak definitions. As a result, their application as fit indices is rather constrained. As a result, additional fit indices are used to assess the model's fit. The average chi-square ( $\chi^2$ ) - ( $\chi^2$  to degrees of freedom,  $\chi^2=379.80$ , d.f. = 308) is 1.233, falling short of the 3.0 threshold that is considered acceptable. However, the model is biased since the chi-square value rises with sample size and the number of observed variables. As a result, several model fit indices have been looked at. The fit is good as evidenced by the root mean square error of approximation (RMSEA), which is 0.031 and less than 0.08. The incremental fit indices for the CFI (comparative fit index) and TLI (Tucker Lewis Index) are 0.896 and 0.881, respectively. To summarize, the findings of confirmatory factor analysis show that the measurement model seems to have a great fit, with fit indices of GFI=0.938, AGFI=0.913,  $\chi^2/df=1.233$ , RMSEA=0.031, CFI=0.896, and TLI=0.881.

**Figure 2**

*Measurement Model of the Determinants of Investor Awareness in Nepalese Capital Market*





### Structural Model or Path Analysis

The emphasis shifts from the relationships between latent constructs and observable variables to the nature and magnitude of the linkages between the constructs when the research proceeds from the measurement model to the structural model, as seen in the figure 3. Utilizing well-known economic theories, the structural model is defined. It is postulated that the Fundamental & Technical Analysis, Education & Training Programs, Social Learning & Motives, Evaluation of Investment Alternatives, Regulator's Rules & Regulations, and Information Dissemination propositioned to Investor's awareness of Investor visiting various brokerage houses within Pokhara. The SEM path analysis findings are provided in the table. The research investigates the postulated causal link presented in the theoretical model using structural or path analysis.

**Table 5**

*SEM Path Analysis*

| Structural Path     |                                       | Estimate             | SRW <sup>a</sup> |
|---------------------|---------------------------------------|----------------------|------------------|
| Investors Awareness | Fundamental & Technical Analysis      | 0.051***<br>(0.070)  | 0.321            |
| Investors Awareness | Education & Training Programs         | 0.016<br>(0.065)     | 0.108            |
| Investors Awareness | Social Learning & Motives             | 0.549***<br>(0.814)  | 0.977            |
| Investors Awareness | Evaluation of Investment Alternatives | 0.015**<br>(0.021)   | 0.196            |
| Investors Awareness | Regulator's Rules & Regulations       | -0.514***<br>(0.914) | -0.689           |
| Investors Awareness | Information Dissemination             | 0.019<br>(0.044)     | 0.159            |

### Squared Multiple Correlation

Investor Satisfaction ( $\gamma^2=0.67$ )

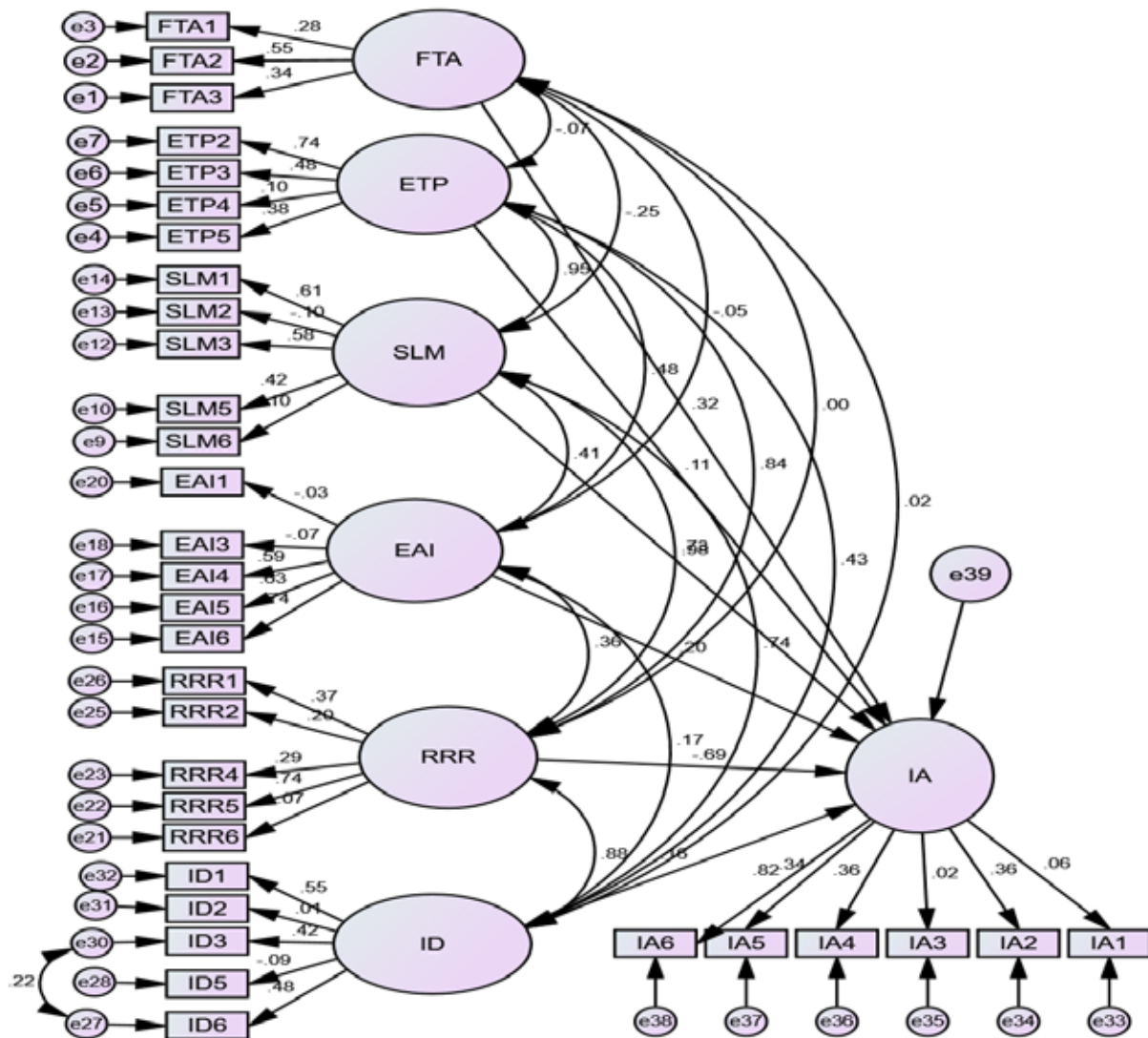
### Model Fit Measures

Chi-square = 582.30 (df=473, prob. = 0.000)

CMIN/DF=1.231, PGFI= 0.744, CFI=0.873, RMSEA=0.030, GFI=0.912, AGFI=0.904, TLI=0.862

<sup>a</sup>SRW = Standardized regression weights \*\*\* p<0.001, \*\*p<0.01

*Source: Field Survey, 2022 and authors' calculation.*

**Figure 3***SEM Path Analysis Indicating Relationship between Investor's Awareness and Its Determinants*

The path analysis findings display the overall fit measures stated in the previous section, which offer judgment on how well the structural or path model matches the data. The analysis of path model outputs reveals that the chi-square value [ $\chi^2 (473) = 582.30, p=0.000$ ], GFI=0.912, AGFI=0.904, CFI=0.873, TLI=0.864, RMSEA=0.030] produced a satisfactory fit. The  $\chi^2$  is significant ( $p<0.001$ ), indicating a poor match. However, the normal chi-square ( $\chi^2 / df$ ) is 1.231, which is less than the cutoff value of 3, indicating that the model fit is adequate. Furthermore, the RMSEA value of 0.030 is lower than the allowed level of 0.08. Similarly, the values of the incremental fit indices CFI and TLI are frequently stated near the cut-off value of 0.873 and 0.864 indicating a subpar model fit. As a result, the model is considered to be sufficiently suitable to proceed with additional investigation.

The path analysis results allow for testing the hypothesized relationship of the constructs as outlined in Figure 3. In  $H_1$ , Fundamental & Technical Analysis has positive and significant

impact on Investor Awareness which indicates that Investor considered the basis rule of thumb and historical trading data before making Investment in capital market. In  $H_2$ , it was hypothesized that Education & Training Programs has insignificant impact on Investor Awareness which is accepted which indicated that investors in Nepal do not consider proper education or training critical before investing in capital market. As stated by  $H_3$ , Social Learning & Motives has positive impact on Investor Awareness which is in hypothesized direction and it is statistically significant. Thus, it is accepted that Investor consider social behavior & trends and tends to follow what others are doing.

Similarly,  $H_4$  predicted that increase in Evaluation of Investment Alternatives has positive and significant impact on Investor Awareness which is supported by the model. This indicates that investors try to evaluate their different investment alternatives in detail before they commit their funds in such alternatives. Further the study shows that  $H_5$  Regulator's Rules & Regulations has negative but significant impact on Investor Awareness indicating that Investor are not satisfy with the kinds of rules and regulation impose by the different governing bodies like SEBON. Finally,  $H_6$  predicted that Information Dissemination has insignificant impact on Investor Awareness. This indicates that investors are not considering broadcasting of critical information while making the investment decisions. Among the relationship between the latent constructs, the relationship between Social Learning & Motives and Investor Awareness is the highest and significant. The results are then followed by Fundamental & Technical Analysis and Evaluation of Investment Alternatives. The Education & Training Programs and Regulator's Rules & Regulations variable does not have significant impact on Investor Awareness. The values of squared multiple correlations reveal that around 67 percent of variation in Investor Awareness is explained by the combine effect of independent variable.

## Discussion

The present study investigated the factors that influence investor awareness in the Nepalese stock market and how this awareness impacts their investment decisions. The findings revealed that social learning and motives, fundamental and technical analysis, and the evaluation of investment alternatives were the most significant determinants of investor awareness. These results are consistent with previous studies that have found social learning to be an important factor in shaping investors' behavior (Devkota et al., 2021). Furthermore, the importance of fundamental and technical analysis in decision-making has been well established in the literature (Kadariya et al., 2012).

Interestingly, the study found that education and training programs, as well as regulatory rules and regulations, had a minor influence on investor awareness. This is consistent with prior research that has found that investors do not necessarily value formal training and education in investment decision-making (Baihaqqy & Sari, 2020). Additionally, the present study adds to the literature by showing that regulatory rules and regulations may not be significant in

shaping investors' awareness, which challenges the assumptions made by policymakers in some previous studies (Devkota et al., 2021).

The results of this study have several implications for policymakers in developing countries. Policymakers may want to consider alternative methods for promoting investor awareness and facilitating more informed investment decisions. For example, policymakers could focus on improving the quality and accessibility of social networks for investors, as well as promoting more informal education and training programs that are tailored to investors' needs and preferences. These findings are consistent with previous research that has advocated for more informal education and training programs to improve investor education (Guiso & Jappelli, 2002). Policymakers could also consider alternative approaches to investor protection, such as increasing transparency and promoting greater disclosure of investment risks and opportunities, which has been suggested in prior research (Sapkota, 2020).

### **Conclusion and Recommendations**

In conclusion, the study highlights the importance of investor awareness for effective investment decisions and the growth of the capital market in underdeveloped economies like Nepal. The research indicates that social learning and motivations, investment alternatives appraisal, and fundamental and technical analysis are the primary determinants of investor awareness. However, several challenges, such as a lack of understanding, analytical skills, a lack of cash, stock market volatility, and political uncertainty, hinder the growth of the capital market.

While the study's findings are limited to a small sample size, the practical implications are substantial. Regulatory organizations like SEBON should launch campaigns, seminars, publications, and FM/TV shows to educate the public on the nature of the capital market's risk and return. The government should also take proactive measures to expand the capital market and promote investor education. Brokerage firms should provide investors with accurate and unbiased information on various investment options and refrain from influencing investment decisions for their personal gain.

In addition to this, policymakers in Nepal should also consider measures to promote financial literacy and increase access to investment information and resources, particularly for those living in rural areas. The government could partner with financial institutions and educational institutions to provide financial education and investment training programs to improve the financial literacy of the population. This would help build the confidence of investors and increase the efficiency of the capital market.

Overall, the study's findings and recommendations can help policymakers and regulators to promote informed and effective investment decisions and contribute to the growth and development of the Nepalese capital market. Further research on a larger scale is recommended to improve the accuracy and generalizability of the findings.



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## Demographic Factors Affecting Customer's Perception toward the Use of Internet Banking in Pokhara Metropolitan City of Nepal

Deepesh Ranabhat<sup>\*#</sup>, Hemkanta Poudel<sup>#</sup>, Pradeep Sapkota<sup>\*#</sup> and Mala Ranabhat<sup>\*\*</sup>

<sup>\*</sup>Ph.D. Scholar, Shoolini University, Solan (H.P), India

<sup>#</sup>Assistant Professor, School of Busines, Pokhara University

<sup>\*\*</sup>MPGD Graduate, Pokhara University

### Abstract

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### Correspondence:

Deepesh Ranabhat  
deepeshrana2000@gmail.com

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**Background:** The provision of financial services to customers has been transformed by internet banking, which employs the internet as the primary means for carrying out banking transactions.

**Objectives:** The research aims to assess the perception of customers toward the use of internet banking services and find out the demographic factors affecting it.

**Method:** For this study, a descriptive and analytical research design was utilized, in which 225 customers of banks in Pokhara Metropolitan City of Nepal were purposively selected. The study employed various statistical techniques, including frequency distribution analysis, mean score analysis, and inferential analysis such as t-test and one-way ANOVA.

**Result:** According to the study, most customers are aware of and have access of internet banking services. Customers of commercial banks view internet banking services to be simple, secure, and less expensive to use, with the bank providing adequate help. It was discovered that marital status, age, education, and economic level all affect awareness levels. Education influences access to internet and respondents' attitudes toward cost-saving are influenced by their marital status, education, and income level. Similarly, it was discovered that education, occupation, and income level affect the perception of ease of use, employment affects the impression of security, and marital status, education, and occupation affect the perception of bank assistance.

**Conclusions:** The study concludes that marital status, educational qualification, monthly income of family, and working status are the major factors affecting the perception of the respondents toward the use of internet banking. Further, this study concludes that people of higher age and low education level are less aware of internet banking service.

**Keywords:** Demographic factors, Internet banking, Customer perception, Nepal

**JEL Classification:** G20, I24, J10

## Introduction

The development of the internet has changed how the banking industry operates. Internet banking is an example of the adoption of new technology by banking sectors (Pham et al., 2018). Internet banking uses the internet as the delivery means to carry out banking operations like money transfers, bill payments, account balance checks, mortgage payments, and purchases of financial products, among other things. Internet banking enables bank customers to do almost all branch transactions from any place where there is internet access.

Internet banking is a relatively new concept in Nepal. Kumari Bank Limited launched internet banking for the first time in Nepal in 2002, and now all the commercial banks and development banks are providing these services to the clients. Through the development of digital banking, Nepal's financial system is also shifting to a less-cash society. Customers are increasingly using internet banking, mobile banking, and QR payments. The ongoing pandemic has also accelerated the spread of digital banking and contributed to the creation of a less cash culture. Digital banking has made it easier and less expensive for financial service providers to increase their customer base. The number of online banking subscribers is growing every year. As of mid-July 2020, Nepal had 1,001,866 online banking customers, up from 888,268 in 2019, 810,674 in 2018, 766,958 in 2017, and 489,835 in 2016 (Nepal Rastra Bank, 2021).

Many factors influence the use of internet banking services, which policymakers and service providers must understand and need to focus on making plans and policies accordingly. Socio-demographic factors also play a role in influencing the use of online banking (Van Hove & Dubus, 2019, Lenka & Barik, 2018). Many studies have been conducted on the factors that affect internet banking use, but few of the studies have concentrated on demographic factors. The research questions such what is the perception of customers toward the use of internet banking? How do demographic factors affect the perceptions of customers toward internet banking? Which of the demographic factors play a significant role in the Nepalese context? are still unanswered. This study aims to assess the perception of customers toward the use of internet banking services in Pokhara Metropolitan City of Nepal, and the demographic factors affecting it.

## Review of Literature

According to cashless India, internet banking, also known as e-banking, online banking is a system of electronic payment that permits the customers of bank and financial institution (BFIs) to perform various economic transactions through the website of BFIs. Depending on the services provided by the bank, internet banking allows users to access their account balances and history of transactions, pay a variety of utility bills, and transfer money between their account and another person's account using the internet, etc. Internet banking services provided by banks give advantages to both banks and customers. Bank can provide its services with wider coverage at lower cost using internet banking while users can access all the financial services using mobile or computer from anywhere and anytime. It takes less time and also provides security on transactions. Kumari Bank Limited introduced internet banking in 2002 for the first time and at present, internet banking services are provided by all commercial banks in Nepal. Up to mid of July 2021, there were 1,115,532 internet banking customers in Nepal (Nepal Rastra Bank, 2022).

As internet access has become more widespread, internet banking, also known as online banking or e-banking, has experienced a surge in popularity in recent years. There exist several theories that explain the use of internet banking. According to the Technology Acceptance Model (TAM), users' intention to adopt and use internet banking is determined by their perceived usefulness and perceived ease of use. The Innovation Diffusion Theory (IDT) proposes that the

adoption and use of new technologies is influenced by factors such as the perceived relative advantage, compatibility, complexity, trialability, and observability of the technology. The Unified Theory of Acceptance and Use of Technology (UTAUT) goes further to consider other factors like social norms and individual characteristics that may impact users' acceptance and use of technology. These theories provide insight into the factors that drive the use of internet banking.

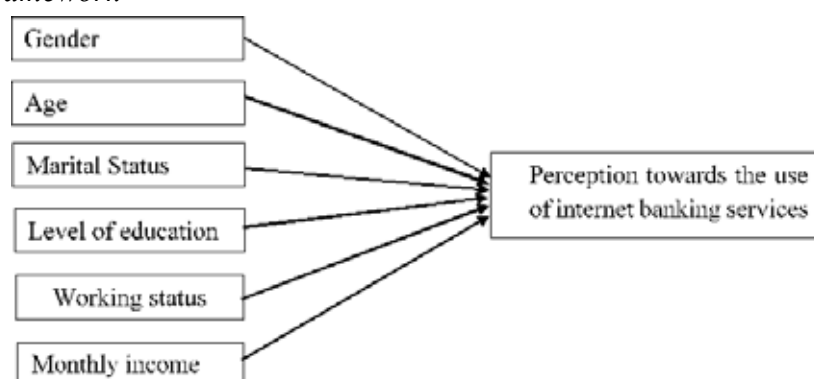
Different studies have been conducted on the perception of internet banking. A study conducted by Shantha (2019) found that convenience, price, simplicity, and bank operations have a positive and significant effect on customer perception of internet banking. Similarly, Singh and Srivastava, (2020) found that the customer's perception toward online banking is influenced by security, ease of use, and financial cost and Kariyawasam and Jayasiri (2016) found that knowledge, internet access are the main factors influencing the use of internet banking. Similarly, Ranabhat et al., (2022) found that level of awareness, internet access, safety, and bank support have significant positively effect on use of internet banking. Demographic factors also play a important role in shaping internet banking behavior (Nasri, 2011). The perception toward the use of internet banking differs by age, gender, income, occupation, education level, and other demographic factors (Mutengezanwa & Mauchi, 2013). According to Mukhtar (2015), the use of internet banking is not convenient for older customers. Age has a negative impact on the adoption of mobile banking (Shankar et al., 2020). Likewise, other factors such as income, education (Nyoka, 2019), income, education, gender (Van Hove & Dubus, 2019), income, education, and employment status (Lenka & Barik, 2018) significantly affect the use of mobile and internet banking services. Ranabhat et al., (2022) in their review paper also mentioned that age, gender, education, income, and marital status are the major demographic factors affecting digital financial inclusion. Likewise, Shrestha et al. (2020) discovered significant correlation between perceived risk and factors such as gender, education, and occupation as well as perceived usability and factors such as gender, education, and occupation.

Although all commercial banks and other financial institutions in Nepal have launched internet banking, the utilization of internet banking services is not sufficient. Some research on factors affecting the use of internet banking has been conducted in Nepal but the influence of demographic factors has been underexplored. Demographic factors also influence internet banking use, which banks and financial institutions, as well as policymakers, must understand. This study examines clients' perceptions toward the use of internet banking services in Pokhara Metropolitan City of Nepal, as well as the demographic aspects that influence them.

The following conceptual framework is being examined for this study based on a survey of the literature.

**Figure 1**

*Conceptual Framework*



In this study, the dependent variable was the perception of internet banking usage, while various demographic variables were deemed independent variables.

### **Materials and Methods**

Pokhara is one of the six metropolitan cities in Nepal, where most of the banks and financial institutions are in operation. In this study, Pokhara Metropolitan city was chosen purposively and the total customers of commercial banks in Pokhara Metropolitan city of Nepal were considered as population units. The study had a sample size of 225 respondents and a margin of error of 6.5 percent with a 95 % confidence interval. Only the respondents holding bank accounts in commercial banks were chosen purposively.

This was descriptive, analytical and cross-sectional study. The study relied on primary data to achieve its objectives. This study was based on quantitative data and a survey questionnaire was employed to collect the necessary data. The researchers used different indicators to measure the perception toward internet banking service on a Five-Point Likert Scale, where 1 being 'Strongly Disagree' to 5 being 'Strongly Agree'. This study was carried out in 2019 and the data collection period lasted four months, beginning in April 2019.

The demographic characteristics of the respondents were examined through percentage analysis, while mean score analysis was utilized to describe the participants' perception concerning various aspects of internet banking such as awareness, access, cost-saving, ease of use, security, and bank support. Similarly, t-test and one-way ANOVA were employed to find the demographic factor affecting the perception toward internet banking.

Validity measures the extent to which data or information accurately represents what it is intended to measure. To ensure the accuracy of the survey results, the measurement scales employed in the questionnaire were developed using previous studies as a reference, specifically those conducted by (Poon, 2008), (Sathye, 1999), (Karjaluoto et al., 2002) and their relation to the use of online banking services, on the other. To attain these, a large survey (1,167 responses, (Rawwash et al., 2020), and (Al-Rfou, 2013) and survey questionnaire was also shown to the experts and their suggestion was incorporated. Likewise, the scales' reliability was confirmed with Cronbach's alpha value of 0.918.

### **Results and Discussion**

#### **Demographic Profile of Respondents**

The demographic details of the respondents have been broken down into gender, age, and marital status, level of education, profession, and monthly income. The majority of the respondents (59.1%) are male and female respondents are 40.9 percent. Likewise, 34.7 percent of respondents are 25 years or less. It is followed by above 40 years (21.3 %), 31 to 35 years (18.7%), 26 to 30 years (16%), and 36-40 years (9.3%). Similarly, most of the respondents were married (62.2%) and a majority (48.9%) have a bachelor's degree. Likewise, most of the respondents (40.4%) work in the private sector, 24.4 percent are students, 21.4 percent work in the public sector, 8.4 percent do not work, and finally, 5.3 percent are retired. In terms of monthly income, most of them (36.9%) earn NPR 30,001-60,000 monthly. It is followed by 32.4 percent earning up to NPR. 30,000 and finally 30.7 percent earn more than NPR 60,000.

#### **Descriptive Analysis of Perception towards Internet Banking**

The perception of respondents toward internet banking is measured using different indicators. Table 1 shows the mean value of the measurement scales.



**Table 1***Mean Scores of Perception towards Internet Banking*

| Statements  | Mean | SD    |
|---|------|-------|
| <b>Awareness</b>  |      |       |
| You are aware that the bank offers an internet banking service.                         | 3.88 | 1.081 |
| You have knowledge of internet banking transactions                                     | 3.75 | 0.997 |
| You know how internet banking works   | 3.49 | 1.086 |
| <b>Access</b>   |      |       |
| You have internet facilities at home/office   | 4.16 | 1.105 |
| You have e-banking facilities on my mobile/computer                                     | 3.78 | 1.294 |
| You have access on the usage of all features of e-banking services                      | 3.84 | 1.158 |
| <b>Cost-saving</b>  |      |       |
| Internet banking services are less costly than other banking services                   | 3.53 | 1.013 |
| Internet banking allowed to save the traveling costs                                    | 4.01 | 0.964 |
| In terms of time savings, internet banking outperforms branch banking                   | 3.98 | 0.921 |
| <b>Ease of Use</b>  |      |       |
| Internet banking transaction methods are clear and simple                               | 3.55 | 1.013 |
| Internet banking can be easily learned and carried out by anybody                       | 2.96 | 1.168 |
| Internet banking is convenient in every aspect compared to traditional banking          | 3.6  | 1.053 |
| <b>Secure</b>   |      |       |
| You believe your personal information is secure during the internet banking transaction | 3.54 | 0.949 |
| Internet banking is secure enough compared to branch banking                            | 3.52 | 0.987 |
| Websites that offer internet banking services are safe                                  | 3.31 | 0.926 |
| <b>Bank Support</b>   |      |       |
| The bank provides adequate information on the internet banking service                  | 3.33 | 1.086 |
| Banks offer assistance if you have an issue with their internet banking service         | 3.65 | 0.929 |
| Assistance from the banks is enough in internet banking services                        | 3.41 | 0.922 |
| N=225; Scales: 1= Strongly Disagree, 3=Neutral, 5 = Strongly Agree                      |      |       |

Table 1 shows the mean score of the measurement scale used to measure the perception towards internet banking. The mean scores of almost all the items except (internet banking can be easily learned and carried out by anybody) are above than the average of 3 reveals that most of the respondents are aware of internet banking and have internet access. Similarly, the majority of them agreed that internet banking helps to save costs, is easy to use, and is secure, and banks provide support for using internet banking. However, a mean score of 2.96 reveals that most of the respondents disagreed on internet banking can be easily learned and carried out by anybody.

#### **Mean Difference Tests: T-tests and ANOVA**

To find out the demographic variables that affect the perception toward internet banking, mean differences tests were used. An Independent samples t-test is utilized to compare the average score between male and female, and married and unmarried respondents. Likewise, one-way ANOVA is used to compare the mean score of respondents by age, education status, working status, and income level. The independent sample t-test and one-way ANOVA outcomes are shown below.

**Table 2**

*Independent Sample T-test by Gender*

| Dimensions  | Gender | Mean Score | t-stat | Sig.  |
|-------------|--------|------------|--------|-------|
| Awareness   | Male   | 3.70       | -0.165 | 0.869 |
|             | Female | 3.72       |        |       |
| Access      | Male   | 3.94       | 0.236  | 0.813 |
|             | Female | 3.91       |        |       |
| Cost Saving | Male   | 3.87       | 0.817  | 0.415 |
|             | Female | 3.79       |        |       |
| Ease of use | Male   | 3.38       | 0.366  | 0.715 |
|             | Female | 3.34       |        |       |
| Secure      | Male   | 3.45       | -0.137 | 0.891 |
|             | Female | 3.46       |        |       |
| Support     | Male   | 3.50       | 0.821  | 0.413 |
|             | Female | 3.41       |        |       |

Table 2 reveals that there are no significant differences in opinions regarding the internet banking services between males and females respondents ( $P > 0.05$ ).

**Table 3***Independent Sample T-test by Marital Status*

| Dimensions  | Marital status | Mean | t-stat | Sig.  |
|-------------|----------------|------|--------|-------|
| Awareness   | Married        | 3.57 | -3.06  | 0.002 |
|             | Unmarried      | 3.93 |        |       |
| Access      | Married        | 3.87 | -1.083 | 0.280 |
|             | Unmarried      | 4.02 |        |       |
| Cost Saving | Married        | 3.75 | -2.275 | 0.024 |
|             | Unmarried      | 3.98 |        |       |
| Ease of use | Married        | 3.29 | -1.701 | 0.090 |
|             | Unmarried      | 3.49 |        |       |
| Secure      | Married        | 3.39 | -1.673 | 0.096 |
|             | Unmarried      | 3.56 |        |       |
| Support     | Married        | 3.37 | -2.213 | 0.028 |
|             | Unmarried      | 3.62 |        |       |

Table 3 shows there is a significant difference in opinion regarding awareness, cost-saving, and bank support between married and unmarried ( $P < 0.05$ ). The higher mean score of unmarried respondents indicates that unmarried respondents are more aware of the use of internet banking services. Similarly, the higher mean score indicates that unmarried respondents agreed more on the use of internet banking to save costs and bank provide support for using internet banking than the married respondents. However, there are no such differences in opinion regarding access, ease of use, and perception of security between married and unmarried respondents ( $P > 0.05$ ).

**Table 4***One-Way ANOVA test by Age Group*

| Dimensions  | Age Group    | Mean Score | F-stat | Sig.  |
|-------------|--------------|------------|--------|-------|
| Awareness   | 25 and below | 3.89       | 3.662  | 0.007 |
|             | 26 to 30     | 4.00       |        |       |
|             | 31 to 35     | 3.51       |        |       |
|             | 36 to 40     | 3.62       |        |       |
|             | Above 40     | 3.39       |        |       |
| Access      | 25 and below | 3.98       | 1.164  | 0.328 |
|             | 26 to 30     | 4.18       |        |       |
|             | 31 to 35     | 3.89       |        |       |
|             | 36 to 40     | 3.71       |        |       |
|             | Above 40     | 3.77       |        |       |
| Cost Saving | 25 and below | 3.95       | 1.494  | 0.205 |
|             | 26 to 30     | 3.96       |        |       |
|             | 31 to 35     | 3.74       |        |       |
|             | 36 to 40     | 3.86       |        |       |
|             | Above 40     | 3.65       |        |       |
| Ease of use | 25 and below | 3.45       | 1.651  | 0.162 |
|             | 26 to 30     | 3.53       |        |       |
|             | 31 to 35     | 3.28       |        |       |
|             | 36 to 40     | 3.49       |        |       |
|             | Above 40     | 3.13       |        |       |
| Secure      | 25 and below | 3.53       | 1.953  | 0.103 |
|             | 26 to 30     | 3.46       |        |       |
|             | 31 to 35     | 3.57       |        |       |
|             | 36 to 40     | 3.59       |        |       |
|             | Above 40     | 3.17       |        |       |
| Support     | 25 and below | 3.62       | 1.862  | 0.118 |
|             | 26 to 30     | 3.53       |        |       |
|             | 31 to 35     | 3.49       |        |       |
|             | 36 to 40     | 3.30       |        |       |
|             | Above 40     | 3.22       |        |       |

Table 4 reveals that there is a significant difference in awareness levels among the respondents of different age groups ( $P < 0.05$ ). The higher mean score indicates that the respondents of 26 to 30 years are more aware of internet banking in comparison to other age groups. Likewise, the lowest mean score indicates that the respondents above 40 years old are less aware of internet banking in comparison to other age groups. However, there are no such differences in opinion on access, cost, ease of use, perception of security, and bank support among different age groups ( $P > 0.05$ ).

#### Table 5

*One-Way ANOVA test by Education Level*

| Dimensions  | Education Level  | Mean Score | F-stat | Sig.  |
|-------------|------------------|------------|--------|-------|
| Awareness   | Primary          | 3.22       | 8.912  | 0     |
|             | High School      | 3.21       |        |       |
|             | Bachelor         | 3.87       |        |       |
|             | Master and above | 3.96       |        |       |
| Access      | Primary          | 3.31       | 3.053  | 0.029 |
|             | High School      | 3.73       |        |       |
|             | Bachelor         | 3.99       |        |       |
|             | Master and above | 4.12       |        |       |
| Cost Saving | Primary          | 3.53       | 4.101  | 0.007 |
|             | High School      | 3.56       |        |       |
|             | Bachelor         | 3.94       |        |       |
|             | Master and above | 3.98       |        |       |
| Ease of use | Primary          | 2.72       | 5.661  | 0.001 |
|             | High School      | 3.10       |        |       |
|             | Bachelor         | 3.45       |        |       |
|             | Master and above | 3.60       |        |       |
| Secure      | Primary          | 3.08       | 2.199  | 0.089 |
|             | High School      | 3.28       |        |       |
|             | Bachelor         | 3.55       |        |       |
|             | Master and above | 3.51       |        |       |
| Support     | Primary          | 3.25       | 4.024  | 0.008 |
|             | High School      | 3.14       |        |       |
|             | Bachelor         | 3.60       |        |       |
|             | Master and above | 3.55       |        |       |

Table 5 reveals that there is a significant difference in perception toward awareness level, access to internet services, cost saving, ease of use, and bank support among respondents with different levels of education ( $P < 0.05$ ). The higher mean score of bachelor level and above indicates that the more educated respondents are more aware of internet banking in comparison to other age groups. Likewise, the higher mean score of bachelor level and above indicates that the educated respondents have more access to internet banking services, they perceive internet banking saves cost, is easy to use and the bank offers assistance for using internet banking than the less educated respondents. However, there are no differences in opinion regarding the perception of security among respondents with different education levels ( $P > 0.05$ ).

**Table 6**

*One-Way ANOVA Test by Working Status*

| Dimensions | Working Status       | Mean Score | F-stat | Sig.  |
|------------|----------------------|------------|--------|-------|
| Awareness  | Private Organization | 3.75       | 2.197  | 0.070 |
|            | Public Organization  | 3.85       |        |       |
|            | Pensioner            | 3.17       |        |       |
|            | Student              | 3.76       |        |       |
|            | Does not work        | 3.32       |        |       |

| Dimensions  | Working Status       | Mean Score | F-stat | Sig.  |
|-------------|----------------------|------------|--------|-------|
| Access      | Private Organization | 4.06       | 1.522  | 0.197 |
|             | Public Organization  | 4.03       |        |       |
|             | Pensioner            | 3.72       |        |       |
|             | Student              | 3.77       |        |       |
|             | Does not work        | 3.60       |        |       |
| Cost Saving | Private Organization | 3.85       | 2.056  | 0.088 |
|             | Public Organization  | 4.06       |        |       |
|             | Pensioner            | 3.61       |        |       |
|             | Student              | 3.79       |        |       |
|             | Does not work        | 3.53       |        |       |
| Ease of use | Private Organization | 3.46       | 6.508  | 0.000 |
|             | Public Organization  | 3.60       |        |       |
|             | Pensioner            | 2.81       |        |       |
|             | Student              | 3.38       |        |       |
|             | Does not work        | 2.61       |        |       |
| Secure      | Private Organization | 3.45       | 2.672  | 0.033 |
|             | Public Organization  | 3.72       |        |       |
|             | Pensioner            | 3.06       |        |       |
|             | Student              | 3.41       |        |       |
|             | Does not work        | 3.18       |        |       |
| Support     | Private Organization | 3.52       | 2.81   | 0.026 |
|             | Public Organization  | 3.58       |        |       |
|             | Pensioner            | 3.42       |        |       |
|             | Student              | 3.50       |        |       |
|             | Does not work        | 2.86       |        |       |

Table 6 reveals that there is a significant difference in opinion regarding the ease of use, perception of security, and bank support among the respondents having different working statuses ( $P < 0.05$ ). The highest mean score of public sectors on ease of use, security, and bank support indicates that public sector people feel more at ease using internet banking, perceive internet banking as safe, and banks provide essential support for internet banking users in comparison to the respondents of other sectors. However, there are no such differences in opinion regarding the level of awareness, access to internet banking services, and cost-saving among the respondents having different working statuses ( $P > 0.05$ ).

**Table 7**

*One-Way ANOVA Test by Income Level*

| Dimensions | Income          | Mean Score | F-stat | Sig.  |
|------------|-----------------|------------|--------|-------|
| Awareness  | 30000 and below | 3.39       | 6.188  | 0.002 |
|            | 30001 to 60000  | 3.85       |        |       |
|            | Above 60000     | 3.86       |        |       |
| Access     | 30000 and below | 3.70       | 2.865  | 0.059 |
|            | 30001 to 60000  | 4.07       |        |       |
|            | Above 60000     | 3.98       |        |       |



|             |                 |      |       |       |
|-------------|-----------------|------|-------|-------|
| Cost Saving | 30000 and below | 3.64 | 4.219 | 0.016 |
|             | 30001 to 60000  | 3.87 |       |       |
|             | Above 60000     | 4.01 |       |       |
| Ease of use | 30000 and below | 3.12 | 4.300 | 0.015 |
|             | 30001 to 60000  | 3.47 |       |       |
|             | Above 60000     | 3.49 |       |       |
| Secure      | 30000 and below | 3.37 | 0.703 | 0.496 |
|             | 30001 to 60000  | 3.52 |       |       |
|             | Above 60000     | 3.47 |       |       |
| Support     | 30000 and below | 3.36 | 0.980 | 0.377 |
|             | 30001 to 60000  | 3.49 |       |       |
|             | Above 60000     | 3.55 |       |       |

Table 7 reveals that there is a significant difference in perception toward awareness level, cost-saving, and ease of use among the respondents having different income levels ( $P < 0.05$ ). The higher mean score of higher income level indicates that the respondents of higher income group are more aware of internet banking, perceive internet banking as a saving cost, and internet banking is simple to use in comparison to the respondents of lower income level. However, there are no such differences in opinion regarding access to internet banking, perception of security, and banking support among the respondents with different income levels ( $P > 0.05$ ). This study was conducted to evaluate customer perceptions toward internet banking and the factors affecting it. The majority of the customers have knowledge and access of internet banking services. Likewise, the customers of commercial banks perceive that internet banking services are simple to use, secure, and less expensive, and the bank offers adequate assistance to use internet banking services. Further, it was found that awareness level is affected by marital status, age, education, and income level. Difference in perception toward internet access is found among respondent of different education level. Similarly, it was found that there is significant difference in perception toward cost-saving among the respondents of various marital status, education level and income level. Likewise, it was found that perception toward ease of use is affected by education, occupation, and income level. Perception toward security is affected by occupation and perception toward bank support is affected by the marital status, education, and occupation of the respondents. The findings are consistent with the results of (Mukhtar, 2015, Lenka & Barik, 2018, Van Hove & Dubus, 2019, Nyoka, 2019, Shankar et al., 2020, Shrestha et al., 2020), which found that age, income, education, and employment status significantly affect the perception toward the use of internet banking services.

### Conclusion and Recommendations

This study found that the majority of the respondents agreed on internet banking helps to save cost, is easy to use, and is secure, and banks provide support for using internet banking. Based on the finding, this study concludes that there is a positive perception of customers toward internet banking in Pokhara Metropolitan City of Nepal. Likewise, this study found marital status affects perception toward awareness level, cost-saving, and bank support. Education level affects perception towards awareness level, ease of use, cost-saving, and bank support. Income level affects perception towards awareness level, cost-saving, and ease of use. Working status affects perception toward ease of use, security, and bank support. This study concludes that demographic factors like marital status, education level, income level, and occupation significantly affect the perception of the use of internet banking. Further, people of higher age

and low education level are less aware of internet banking services.

This study suggests that banks could increase internet banking use by targeting high-income group people, educated people, and working people. Further, the policymaker and the service provider should increase the awareness level of elderly people and less educated people to rise the internet banking use in Nepal. This study was conducted in the urban area of Nepal, so the results may not apply to customers in Nepal's rural areas. As a result, additional research can be undertaken with a high sample size in both rural and urban locations.

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# Effects of Merger and Acquisition on Employee Satisfaction in Nepalese Banking Sectors

Eliza Shrestha\*, Niranjan Devkota\*\*, Surendra Mahato#, Sahadeb Upretee+, Udaya Raj Paudel<sup>†</sup>, Devid Kumar Basyal<sup>†</sup>

\*Shangri-La Development Bank Ltd., Baluwatar, Kathmandu, Nepal

\*\*Kathmandu Model College, Tribhuvan University, Kathmandu, Nepal

#Nepal Commerce Campus, Tribhuvan University, Minbhawan, Kathmandu, Nepal

+Central Washington University, USA

<sup>†</sup>Quest International College, Pokhara University, Gwarko, Lalitpur, Nepal

<sup>†</sup> Quest International College, Pokhara University, Gwarko, Lalitpur, Nepal

## Abstract

**Background:** Mergers and acquisitions (M&A) are seen as effective strategies for business growth in the corporate sector. However, there are very little study on ‘merger and acquisition’ available in the context of Nepal.

**Objectives:** This study examines the effects of mergers and acquisitions on employees’ satisfaction in Nepalese Banking sectors.

**Method:** The study, which adopts the Job Characteristics Theory as its theoretical foundation, was conducted among employees from Nepalese banking sector that had undergone M&A. The study seeks cause and effects relationship amongst banking employees in Kathmandu valley due to merger and acquisition and adopts explanatory research design. Data were collected from 310 respondents and Structural Equation Modeling was used to analyze the data.

**Results:** The findings demonstrate that merger and acquisition have an influence on employees’ satisfaction, with just one out of every four employees reporting high levels of satisfaction following M&A. The results exhibit that organizational climate, recognition and nature of work remain significant to employees’ satisfaction and their motivation. Likewise, pay/remuneration is also statistically significant to employees’ motivation. Again, employees’ motivation also seems significant to employees’ satisfaction.

**Conclusion:** Therefore, this study offers practical insights to human resource managers in strengthening human resources of the organization as perceived by employees after an M&A by considering the crucial role of employees in organizational performance.

**Keywords:** Employee satisfaction; merger and acquisition; Nepalese banking sectors; Nepal

**JEL Classification:** G24, G35, O15, C5

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## Correspondence:

Niranjan Devkota  
niranjandevkota@gmail.com

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**Introduction**

Merger and acquisition are recurring global phenomena and considered as the useful strategies for the growth of the business in the corporate world (Rehman et al., 2017). Each organization embraces various methods and instruments to augment its benefit and can have the option to get by in the quickly developing business sector (Malik et al., 2014). At present days, mergers and acquisitions assist organizational growth considerably. For example, 30,000 M&A exchanges took place during the last couple of years (Tamosiuniene & Duksaite, 2009). The United States' banking industry witnessed a considerable M&A for last 3 decades. As a result, the total number (15,084) of financial institutions in 1984 had significantly dropped to 6,500 in 2005 which accounted for a 57 percent decline (Lambkin & Muzellec, 2008). In the early 1990s, M&As were not still relatively common in Asia as these firms tend to emphasize internal development (Rao-Nicholson et al., 2016; Shrestha et al., 2021). Recently, the global financial crisis in banking sectors at 2008, that was greatly dominated by the sub-prime crisis and the liquidity issues gave raise to mergers and acquisitions (Lambkin & Muzellec, 2008).

Since the economic liberalization in Nepal in 1980, there has been an unexpected development of Bank and financial institutions (BAFIs) which prompted an extreme cutthroat competition among them (Shrestha et al., 2021). Mergers and acquisitions among banks and financial institutions have been more escalated after the introduction of merger by-law in May 2011 and capital upgrade through financial approach of Nepal Rastra Bank in 2015 (Gautam, 2016). Currently, the Nepalese banking sector is confronting an issue of liquidity, extra capital requirement according to NRB guidelines and open money related market for the challenge. Along these lines, so as to adapt to this issue Nepal Rastra Bank (NRB) has guided the Banking Institutions to go through the process of mergers and acquisitions (Gurung, 2013; Shrestha et al., 2021).

Besides above mentioned issues, human resource issues is also equally important to study whether or not M&A is working in the organization (Soundarya et al., 2018). The decades of 1980s and 1990s were described with M&A waves that have changed banking industries worldwide and have influenced the careers of millions of employees (Iankova, 2014). Most of the employees' experience loss of sentiments, resentment, and decrease in work satisfaction that led to distress because of M&A process. HR planning, remuneration, turnover, performance, employees' relation are some human resource issues after M&A (Sambu et al., 2018). Further, when merger fails, administrative productivity founds to be decreased, work processes steadily, employee satisfaction drops workers start to feel that top administration thinks more about financials than employees, HR issues like planning of execution groups, making of new structure, holding of key employees and persuading them, change in the executive positions and communication with stakeholders get arise (Soundarya et al., 2018).

Although previous literatures show that the M&A system improves the funds of banks through cooperative energy, there are inadequate examinations which center around the mergers and acquisitions venture arranging and the executives segment, particularly in banking business



where the assurance and consequences of workers are affected by debates brought about by varieties in the way of life and developments of consolidated banks (Appelbaum et al., 2007). The vulnerability during the merger and procurement movement occupy the focal point of representatives from gainful work to issues (Sambu et al., 2018). Accordingly, despite the fact that NRB cleared a structure for M&A exercises, the purposes for the banks' choice to go for M&A have not been the subject of study. There are different issues looked by the banks of Nepal or different open doors that the BFIs see when converging with or gaining different banks (Shrestha et al., 2021). These reasons and opportunities have not been examined until now. Unintended negative results of M&As on worker conduct can't be envisioned or lightened without a reasonable comprehension of how workers are mentally influenced by M&As. At present, there is no sufficient data about the degree of job satisfaction among bank workers who have encountered an M&A to see how they influence representative psychology (Shrestha et al., 2021).

Thus, this study examines job satisfaction just as various fulfillment segments in bank representatives who have encountered M&A. This study intends to focus on the effects of mergers and acquisitions on employees' satisfaction in the Nepalese Banking sector by using Structural Equation Modeling procedures. It will help to know about the present status of merger and acquisition in Nepalese Banking sectors because as of Newman & Krzystofiak (1993) most of other scholars found that more than half of the problems are related with the people and HR management issues because of the experiences of cultural shock.

The next section continues with conceptualizations of merger and acquisition, employees' satisfaction, and a discussion on the Job Characteristics Theory as the underlying theoretical foundation of the study. The paper proceeds with theoretical discussion, conceptual model, methods, hypotheses, results, and discussion. In conclusion, recommendations for practice and future research are highlighted.

### **Materials and Methods**

The human resource structure issue that gets rampant in merger development are human resource arranging, compensation, turnover, performance evaluation system and employee relations (Sambu et al., 2018). M&A system improves the funds of banks through cooperative energy, there are inadequate examinations which centers around the mergers and acquisitions venture arranging and the executives segment, particularly in business banks where the assurance and consequences of workers are affected by debates brought about by varieties in the way of life and developments of consolidated banks (Appelbaum et al., 2007). Leepsa and Mishra (2016) suggest Efficiency theory, strategic realignment theory, social identity theory, synergy gain theory and role conflict theory.

As demonstrated by social identity theory of Ashforth and Mael (1989), there are some individuals' character that gets from participation in groups, for example, affiliations and professions. Social identity theory predicts that during this process employees will react by endeavoring to achieve an elevating position for their own special assembling in the new

association (Haunschild et al., 1994). Ahern and Weston (2007), Jensen (1986) said that effectiveness updates can come about due to joining firms of conflicting authoritative capacities. Role conflict theory suggests weakness about what is normal in a job. M&A process incorporates upsetting the current social, auxiliary, and job arrangements and creating new arrangements. However, the changes are ordinarily neither obvious nor present moment, regularly meaning an extensive stretch of authoritative float (Marks & Mirvis, 1998), which brings about job struggle what's more, uncertainty. This job uncertainty and conflict is another wellspring of stress, which may result lower work motivation and higher occupation dissatisfaction (Igbaria & Guimaraes, 1992).

As indicated by strategic realignment theory, M&A are a vital move to assist association with adjusting to changes in their outside condition with more solace. Development of any organization through merger is quicker than that any of other inward development procedure (Ahern & Weston, 2007). The significant target of merger and acquisition is to accomplish additional objective for an association. Likewise, synergy gain theory of M&A states that worth or the value of at least two associated firms is higher than that of the single running firm (Baldwin and Gorecki, 1998). It might occur because of the huge size of movement or it might occur by holding inventories or through specialization (Leepsa & Mishra, 2016). Taking everything into account, synergy gain theory in merger and obtaining is utilized to make cooperative energy with the view purpose of satisfying their goals and thus expected that M&As bring about making additional salary for both of the consolidated organizations.

The general idea of behavioral learning theory is the hierarchical day by day exercises that happen from the association's understanding or learning process (Levitt & March, 1988). The organization offers adequate evidence that the increasingly encountered an association's individuals become with a specific vital activity or bearing, they are to repeat it (Amburgey et al., 1984; Gulati, 1995; Shaver et al., 1997). From this perspective, it is not sufficient to inspect just the impacts of the presence of earlier procurement experience, on the grounds that the exhibition input from earlier acquisitions affect future obtaining practices (Haleblian et al., 2006).

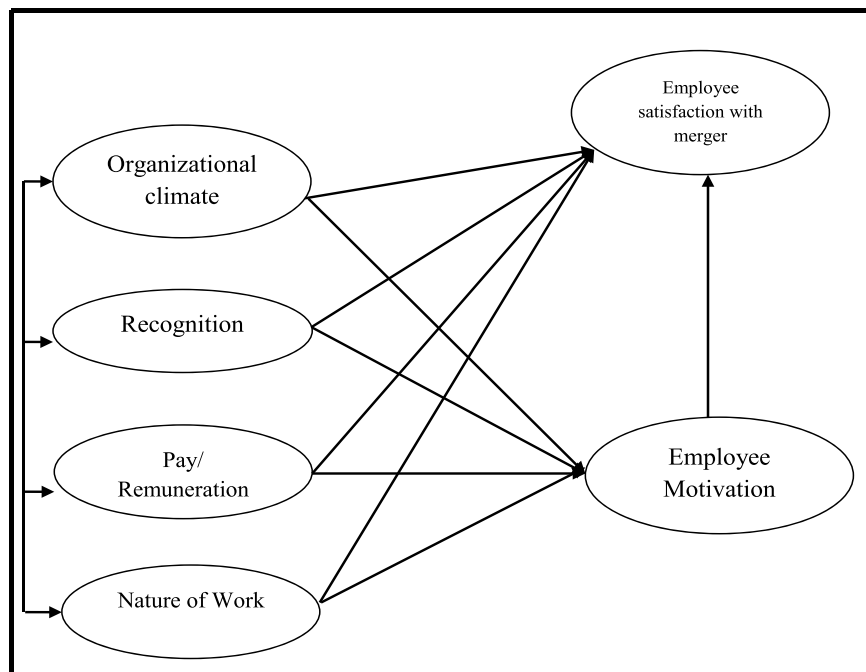
The essential destinations of Job Characteristics Theory (JCT) are to clarify how properties of the authoritative undertaking individuals perform influence their work dispositions and conduct, and to recognize the conditions under which these impacts are probably going to be most grounded. It explores that there are five core job characteristics as: skill variety, task identity, task significance, autonomy, and feedback that impact on three basic mental states: experienced meaningfulness, experienced responsibility for outcomes and knowledge of the actual results, and thus affecting work results (job satisfaction, absenteeism, work motivation, etc.). The five-core job characteristics can be consolidated to frame a motivating potential score (MPS) for an occupation, which can be utilized as a list of how likely a job is to influence employees' attitudes and behaviors.

A conceptual framework is a structure which the researcher accepts can best clarify the

characteristic movement of the phenomenon to be studied (Camp, 2001). It is connected with the ideas, experimental research about and significant speculations utilized in advancing and systematizing the information embraced by the researcher (Peshkin, 1993). For this study conceptual framework (see figure 1) based on above theoretical background can be portrayed as:

**Figure 1**

*Conceptual Framework*



**Organizational Climate:** Organizational climate is characterized from numerous points of view by a few authors and researchers as alluding to a lot of qualities, convictions and personal conduct standards that structure the center character of the association (Schultz et al., 2015). Organizational climate that effect employee satisfaction such as goal clarity, justice/ democracy, trust on co-worker, supervisor support, organizational image, career development program is some of the observed variables that are used in this study.

$H_{01}$ : Organizational climate has not significant relationship between employee satisfactions after merger and acquisition.

$H_{02}$ : Organizational climate does not have a significant relationship between employees' motivation.

**Recognition:** Recognition at the workplace has to do with increasing value in employees' effort. It is recognizing of employees' achievement (Ogonda et al., 2015). Akali (2010) discovered that factors that influence employee's satisfaction and performance included compensation, promotion recognition and work conditions. Recognition such as Praise, promotion opportunity, gifts, benefits packages and awards and rewards are used for this study.

$H_{03}$ : Recognition has no significant relationship between employee satisfaction after merger and acquisition.

$H_{04}$ : Recognition has no significant relationship between employee's motivation.

**Pay/Remuneration:** Remuneration is the pay or other financial compensation provided in exchange for an employee's services performed (not to be confused with giving (away), or donating, or the act of providing to). A number of complementary benefits in addition to pay are increasingly popular remuneration mechanisms. Remuneration is one component of reward management.

$H_{05}$ : Pay/Remuneration does not have a significant relationship between employee satisfactions after merger and acquisition.

$H_{06}$ : Pay/Remuneration has not significant relationship between employee's motivation.

**Nature of Work:** The nature of an employee's work is best defined as the type of work that he/she does. This can refer to the basic daily tasks carried out as part of a job and can refer to other non-routine tasks that may be required (Devkota et al., 2022). Added together, the characteristics of the tasks comprise the nature of an employee's work. The nature of the work may be summed up in the employee's title.

$H_{07}$ : Nature of work has not significant relationship between employee satisfactions after merger and acquisition.

$H_{08}$ : Nature of work has not significant relationship between employee motivation.

**Employee Satisfaction with Merger:** Employment satisfaction is an aftereffect of a person's observation and assessment of her/his activity affected by a kind need, qualities and desires, which people see as essential to them (Bekenova, 2015). Merger exercises to present an alternate arrangement of challenges for the human resource managers in both acquired and acquiring organizations. Pay, supportive supervisor, work, co- worker relation and career advancement opportunity are those factors that are taken into consideration for identifying employee satisfaction after merger.

$H_{09}$ : Employees' motivation has no significant relationship between employee satisfaction after merger and acquisition.

### Constructs and Variables

The study has identified six major constructs and their 28 relatives observed variables (see table 1).

**Table 1:**

*Constructs and Variables*

| Construct                  | Observed Variables       | Description  |
|----------------------------|--------------------------|--|
| <b>Employee Motivation</b> | Working Condition        | Safe/secure working environment                              |
|                            | Non- monetary Benefits   | Non-financial rewards given to employees to feel them valued |
|                            | Training and development | Advancement opportunities in order to enhance their skills   |
|                            | Co- worker attitude      | Relationship with co-worker and their attitude               |

|  |                                |   |
|--|--------------------------------|---|
| <b>Organizational Climate</b>            | Goal Clarity                   | Goal/ Work is clear   |
|  | Justice/Democracy              | Get justice and democracy from management                         |
|  | Trust                          | Trust on management   |
|  | Supervisor                     | Supervisor has excellent leadership skills                        |
|  | Support                        | Support from co – worker  |
|  | Organizational image           | Good organizational image in the market                           |
|  | Program                        | Career Development Program  |
| <b>Recognition</b>                       | Praise                         | Praise received from management                                   |
|  | Promotion opportunity          | Promotion opportunity is good                                     |
|  | Gifts                          | Receiving of gifts for performing best                            |
|  | Benefit packages               | Benefits packages received at work                                |
|  | Awards and rewards             | Awards and rewards for best performance                           |
| <b>Pay/ Remuneration</b>                 | Wages and Benefits             |   |
|  | Terms of employment            | Responsibility and benefits that employees get for job            |
|  | Performance based pay          | Payment made to employees on the basis of their performance       |
|  | Allowance/bonuses              | Extra bonuses for performing well                                 |
| <b>Nature of Work</b>                    | Work-life Balance              | Support for work life balance                                     |
|  | Autonomy                       | Responsibilities offered to use one's own skills to perform tasks |
|  | Workload                       | Time given to perform the task                                    |
|  | Feedback                       | Level of feedback provided on job performance                     |
| <b>Employee Satisfaction with merger</b> | Commitment                     | Commitment of organization on your job security                   |
|  | Punctuality                    | On time on work   |
|  | Work suits                     | Works suits employees' professional skills                        |
|  | Performance                    | Perform well on job   |
|  | Company growth and development | Company long term growth  |

### Study Area, Population and Sample Size

Banking sector in Nepal has seen more M&A agreements than any other service sectors, hence it was chosen for the current study (Shrestha et al., 2021). To determine the reality of the effects of M&A on employee satisfaction in the Nepalese banking sector, an exploratory study method was used as the primary research paradigm. Employees from 27 Nepalese commercial banks were chosen to help us achieve the study's objectives. This study adopts probability sampling to choose sample population. Following convenience sampling technique, a total of 310 bank employees from various management cadres were taken as the sample. Because some



small banks do not have a branch network in local cities, we chose three major cities in the Kathmandu Valley (Kathmandu, Lalitpur and Bhaktapur) to conduct this survey. These three cities are also considered Nepal's main economic, business and densely populated social zones (Paudel et al., 2020).

### **Instrument and Procedure for Data Collection**

For this study, numerous specialists' opinions were considered, as well as a structured questionnaire that was modified from several sources was taken into consideration. Considering the difficulties and contingencies surrounding M&A as well as employees, satisfaction, we created a quantitative methodology employing semi-structured interviews to collect data from banking employees. It consists of six sections: (i) Personal and Socio-economic Information, (ii) Background of M&A, (iii) Employee Satisfaction Index, (iv) Research variables, (v) Challenges after M&A and (vi) Managerial Solution. The questionnaire employed a 5-point likert scale ranging from 'Strongly Disagree' (=1) to 'Strongly Agree' (=5). Both primary and secondary data were used for the study. KOBO toolbox was used for collecting responses from the surveyed employees of the banks. After the preparation of the questionnaire, pretest was done on 5% of the total sample size. Among all the validity methods in this study, we had considered only two validities i.e., convergent validity and discriminant validity in order to assess the measurement instruments.

### **Result and Discussion**

#### **Data Presentation and Analysis**

Data analysis was performed with the help of descriptive analysis and inferential analysis. In first segment descriptive analysis where socio-demographic, employee satisfaction after merger and acquisition, factors influencing employee's satisfaction after merger and acquisition in Kathmandu valley were investigated. It used measures of frequency, central tendency, dispersion/variation and position as well as including types of variables for understanding the characteristics of the population. It provided a comprehensive picture of the responses of respondents to all the study's questions and variables. Descriptive analysis was used to summarize and interpret data in a concise way in order to understand the patterns that can emerge from the data.

In order to analyze statistical relationship model, SPSS and Structural Equation Modeling (SEM) using Analysis of Moment Structures (AMOS) was utilized. SPSS 22 was used to analyze EFA. In EFA, KMO & Bartlett's test, Communalities, CMB and component analysis was taken into consideration for determining relationship among various variables The SEM analysis was carried out in three stages: Confirmatory Factor Analysis (CFA), measurement model, and structural model analysis. Model fit, convergent validity, and concept validity are all evaluated by a CFA. The measurement model was then used to test the model, as well as

to test for discriminant validity, normalcy, and outliers. Some items were excluded from the final structural model analysis because they did not match the criteria of the above test due to low factor loading. The structural model was then assessed for model fit and the links between independent, dependent, and mediating variables were identified in the final process.

### **Descriptive Analysis**

In the first phase, descriptive analysis was used to describe the most important characteristics of the data in the study. Our study exposes the current status of employee satisfaction after merger and acquisition on Nepalese banking sectors. Rosecrance (2005) three times more money than they made from selling cars. This spawned the popular joke that Porsche is “an investment bank with a car showroom attached”<sup>2</sup>. A lacuna in the German laws on disclosure allowed Porsche to build up a secret options stake in Volkswagen of which the investment market was not aware. The result was a grand squeeze on hedge funds and exogenous profits for Porsche. Since these events the hedge funds have complained bitterly about the inadequacy of the disclosure rules in Germany and are demanding reform. The disclosure regime in any jurisdiction is vital as it allows parties to contract on a more equal footing. More specifically in investment markets, it allows for a better appreciation of risk. An adequate understanding of risk in finance is conducive of stability and efficiency. The hedge fund industry is a particularly innovative and dynamic field, exaggerating the requirement. The current economic situation has led to a more fragile financial system, resulting in dynamism of a different nature. The risk elasticity of stability is increasingly elastic, giving a more dynamic market which responds very differently. This is evidenced not just in theory, but it is also observable practically. The central point of this article is to assess the importance of a disclosure regime in the light of what happened with Porsche. This episode provides a good example to highlight the importance and impact of the disclosure regime and also allows for an adequate comparative outlook. The facts of the situation will be analysed from various perspectives: (i) suggested that the degree of employee performance in the organization since the M&A changed fundamentally with dominant part of the perspectives showing that there was normal change and expansion in the employee performance. From our study we found that most of the respondents feels that merger and acquisition has influenced their work performance. 77.42% of the respondents argued that M&A has influenced their work performance however 21.94% argued that their work performance has not been influenced by M&A.

Du and Sim (2016) bank mergers and acquisitions (M&A) argued that most of the employees feel dissatisfaction in job either they may be on the basis of pay or may be on career development opportunities. In our study 44.58% of respondents agreed on the fact that M&A has influenced their level of job satisfaction whereas the remaining respondents denied that their level of satisfaction has not been influenced by M&A. It is also revealed most of the employees who were treated fairly during M&A which means favoritism concept does prevail that much in the organization. The study also revealed that if there are any changes in responsibility of employees after M&A, it also affects job dynamics and satisfaction. In our study the majority

of the respondents, i.e., 58.71% denied that their responsibilities do not change whereas 41.29% respondents agreed that their responsibilities were changed after M&A. In order to have a healthy environment in the organization, management must be supportive to employees. This study shows that a smaller number of respondents, i.e., 18%, feel that because of M&A they receive less support from their management.

### Inferential Analysis

The second phase was used to confirm the validity of the generated scale. In addition to content validity, construct validity is recognized as a method of determining content validity, which is overly reliant on personal judgment. Because the factors are interdependent, a principal component factor analysis with varimax rotation, a form of exploratory factor analysis, was used to assess the validity using SPSS 22. The results were analyzed using confirmatory factor analysis, which was performed using the AMOS 22 software; the identified variables of M&A effects on employee satisfaction were grouped into a six-factor model.

**Summary Statistics:** Table 1 shows the mean, standard deviation, minimum and maximum values, skewness, and kurtosis for the factors of the revised CFA model. A total 310 number of respondents were collected from Kathmandu, Lalitpur and Bhaktapur. All of the mean scores are higher than the midpoint of 2.83, ranging from 2.83 to 3.87, indicating overall positive responses to the research parameters. The standard deviation figures indicate that the spread around the mean is quite narrow. The Skew index (SI) and the Kurtosis index (KI) were used to determine univariate normalcy, with critical values of less than 3.0 and 10 indicating adequate normality, respectively (Wong et al., 2012). These tests can determine how far the distribution's Skewness and Peakedness deviate from the normal distribution. In the study, the calculated value of Skewness and Kurtosis for all the constructs lie between -2 and +2 respectively (see table 2), which manifest that all the data present suitable for analysis and there is no any issues of normality.

**Table 2:**

#### *Descriptive Statistics*

| Descriptive Statistics |           |           |           |           |                |           |            |           |            |
|------------------------|-----------|-----------|-----------|-----------|----------------|-----------|------------|-----------|------------|
|                        | N         | Minimum   | Maximum   | Mean      | Std. Deviation | Skewness  |            | Kurtosis  |            |
|                        | Statistic | Statistic | Statistic | Statistic | Statistic      | Statistic | Std. Error | Statistic | Std. Error |
| OC3                    | 310       | 1.00      | 5.00      | 3.8032    | .70824         | -1.019    | .138       | 1.942     | .276       |
| OC5                    | 310       | 1.00      | 5.00      | 3.6161    | .75753         | -.264     | .138       | .271      | .276       |
| OC6                    | 310       | 2.00      | 5.00      | 3.7710    | .81399         | -.136     | .138       | -.572     | .276       |
| RG3                    | 310       | 1.00      | 5.00      | 2.8323    | .83855         | .557      | .138       | .045      | .276       |
| RG4                    | 310       | 1.00      | 5.00      | 2.8677    | .90946         | .239      | .138       | -.313     | .276       |
| RG5                    | 310       | 1.00      | 5.00      | 2.9000    | .95175         | .201      | .138       | -.619     | .276       |
| PR1                    | 310       | 1.00      | 5.00      | 3.1097    | .96252         | -.309     | .138       | -.283     | .276       |
| PR2                    | 310       | 1.00      | 5.00      | 3.1258    | .76343         | -.304     | .138       | -.496     | .276       |
| PR3                    | 310       | 1.00      | 5.00      | 2.8645    | .90004         | -.051     | .138       | -.344     | .276       |
| NW2                    | 310       | 1.00      | 5.00      | 3.0839    | .89555         | -.220     | .138       | -.732     | .276       |

|                            |     |      |      |        |        |       |      |       |      |
|----------------------------|-----|------|------|--------|--------|-------|------|-------|------|
| NW3                        | 310 | 1.00 | 5.00 | 2.9742 | .92396 | -.073 | .138 | -.815 | .276 |
| NW4                        | 310 | 1.00 | 5.00 | 3.1290 | .94310 | -.307 | .138 | -.805 | .276 |
| ES3                        | 310 | 2.00 | 5.00 | 3.8710 | .74356 | -.596 | .138 | .469  | .276 |
| ES4                        | 310 | 2.00 | 5.00 | 3.8452 | .70726 | -.157 | .138 | -.220 | .276 |
| ES5                        | 310 | 1.00 | 5.00 | 3.8387 | .76733 | -.409 | .138 | .215  | .276 |
| EM2                        | 310 | 1.00 | 5.00 | 3.3129 | .82173 | -.354 | .138 | .249  | .276 |
| EM3                        | 310 | 1.00 | 5.00 | 3.3742 | .83335 | -.592 | .138 | .179  | .276 |
| EM4                        | 310 | 1.00 | 5.00 | 3.5129 | .88029 | -.512 | .138 | .387  | .276 |
| Valid<br>N (list-<br>wise) | 310 |      |      |        |        |       |      |       |      |

**Exploratory Factor Analysis (EFA):** With 29 variables, an EFA was conducted to examine the underlying fundamental premise of the influence of M&A on employee satisfaction, as shown in Appendix 1. Varimax rotation was used to determine the true structure of the scale and to generate a reduced number of coherent subscales, and principal components factor analysis was performed to the derived scores from the 310 respondents' responses. To determine the factorability of the data and assure adequate sampling, Bartlett's test of sphericity and Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy were used. According to Gholami et al. (2016), a successful factor analysis requires a minimum KMO index of 0.6, and Bartlett's test of sphericity should be significant at ( $P < 0.05$ ). Bartlett's test of sphericity was significant ( $P = 0.000$ ) in this study, and the KMO index was 0.804, indicating that the data is well-suited for EFA. Only those items meeting the criteria were recovered for analysis, and the communalities value was extracted with a minimum threshold of 0.50. By using EFA, 18 of the 27 initial variables with factor loading more than 0.7 and eigen values greater than 1.0 were retained. In addition, Harmon's Single Factor was used in this research to determine the impact of Common Method Bias (CMB). The proportion of explained variance by the first prime factor was 35.350 percent of the overall variance, which is satisfactory and does not indicate any threat of CMB, according to the results obtained from Harmon's test. Rotated component matrix, on the other hand, assisted in lowering the dataset's dimensionality.

**The Measurement Model:** CFA was used to confirm the generated scale's factorial structure, and AMOS was used to verify the fit between the hypothesized models with 6 constructs. Various fit indices were used to test the adequacy of the CFA model according to the researchers' requirements. The Confirmatory Factor Analysis came up with the following acceptable model fit: CMIN/DF= 2.531, RMR= 0.038, GFI= 0.901, CFI= 0.941, TLI= 0.925, IFI= 0.942 and RMSEA= 0.070 (see table 3). The model fit statistics showed that the variance-covariance matrix of research measures is reasonably well represented and is suitable for further analysis. The model's expectations and assumptions can be raised as a result of these findings, which can be used to test the relationship.

**Table 3:**

*Reliability and validity*

| Construct                         | Indicator | Factor Loading | CRONBACH'S ALPHA | CR    | AVE   | MSV   |
|-----------------------------------|-----------|----------------|------------------|-------|-------|-------|
| Organizational Climate            | OC3       | 0.810          | 0.754            | 0.765 | 0.526 | 0.157 |
|                                   | OC5       | 0.835          |                  |       |       |       |
|                                   | OC6       | 0.743          |                  |       |       |       |
| Recognition                       | RG3       | 0.861          | 0.906            | 0.907 | 0.766 | 0.154 |
|                                   | RG4       | 0.905          |                  |       |       |       |
|                                   | RG5       | 0.869          |                  |       |       |       |
| Pay/ Remuneration                 | PR1       | 0.895          | 0.850            | 0.856 | 0.665 | 0.117 |
|                                   | PR2       | 0.852          |                  |       |       |       |
|                                   | PR3       | 0.820          |                  |       |       |       |
| Nature of Work                    | NW2       | 0.809          | 0.897            | 0.901 | 0.752 | 0.163 |
|                                   | NW3       | 0.881          |                  |       |       |       |
|                                   | NW4       | 0.910          |                  |       |       |       |
| Employee Satisfaction with merger | ES3       | 0.857          | 0.848            | 0.848 | 0.651 | 0.154 |
|                                   | ES4       | 0.824          |                  |       |       |       |
|                                   | ES5       | 0.865          |                  |       |       |       |
| Employee Motivation               | EM2       | 0.851          | 0.868            | 0.870 | 0.691 | 0.163 |
|                                   | EM3       | 0.889          |                  |       |       |       |
|                                   | EM4       | 0.809          |                  |       |       |       |

Note: 9 items from 6 construct were deleted due to low factor loading

**Table 4:**

*Latent Construct Correlation Matrix*

|    | ES           | OC           | RG           | PR           | NW           | EM           |
|----|--------------|--------------|--------------|--------------|--------------|--------------|
| ES | <b>0.807</b> |              |              |              |              |              |
| OC | 0.299        | <b>0.725</b> |              |              |              |              |
| RG | 0.392        | 0.234        | <b>0.875</b> |              |              |              |
| PR | 0.106        | 0.211        | 0.342        | <b>0.816</b> |              |              |
| NW | 0.334        | 0.257        | 0.342        | 0.289        | <b>0.867</b> |              |
| EM | 0.264        | 0.396        | 0.325        | 0.310        | 0.404        | <b>0.831</b> |

Furthermore, the overall reliability of the 6 constructs was assessed using Croanbach's alpha, which revealed that all of the constructs possessed reliability greater than 0.75, indicating good internal consistency among variables. The components' composite factor reliability coefficients ranged from 0.765 to 0.907, meeting the criterion of 0.70 as specified by (Hamid et al., 2017; Rajbhandari et al., 2022). The AVE for each construct was 0.526 or higher, well above the 0.5 threshold, indicating adequate convergent validity.

The variance extracted estimates for the constructs making up each potential pair were compared with the pairwise correlations between factors obtained for CFA and SEM analyses to assess discriminant validity. If the diagonal elements in the relevant rows and columns are



significantly greater than off-diagonal values, discriminant validity is proven. As illustrated in Table 3 the diagonal elements reflect the square root of the AVE score for each construct, whereas Table 4 represents inter-construct correlation.

### Test of Hypothesis

To evaluate the presented hypotheses, structural equation modeling was used in conjunction with a maximum likelihood estimation approach. The resolution to accept the hypothesis was established on the p value, with confidence interval bias corrected, using the bootstrapping technique with a resampling of 5,000 for hypothesis testing. The significance of the hypotheses was tested using the critical ratio (C.R.) and the p-value.

**Figure 3:**

*Structural Model*

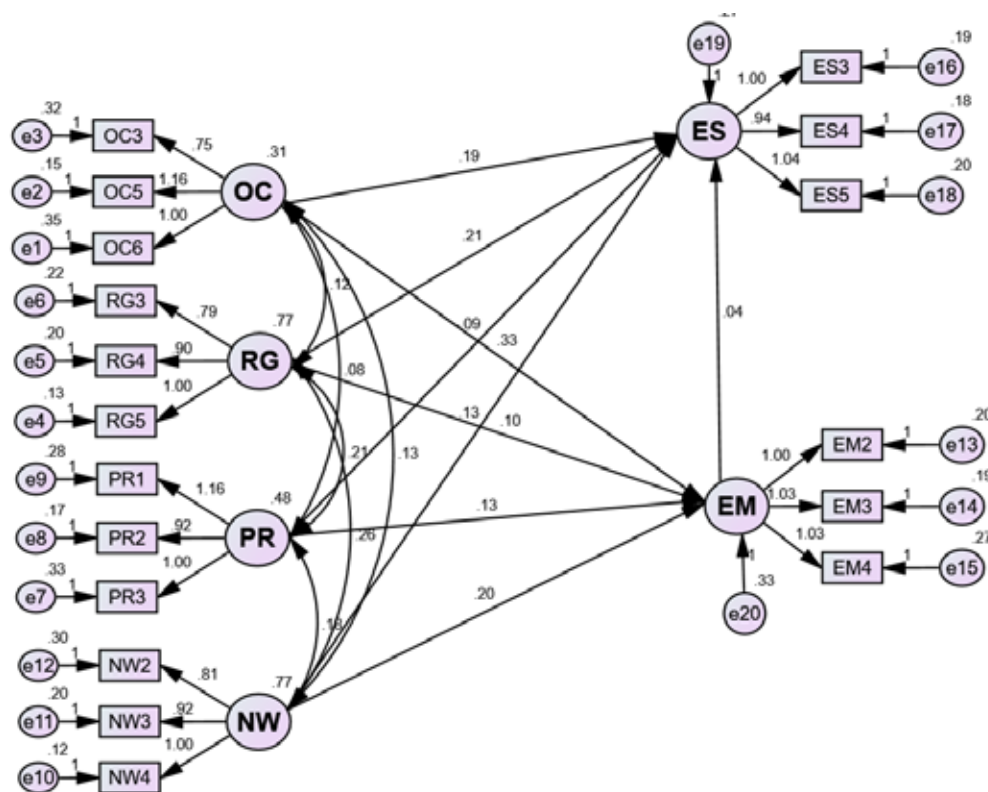


Table 5 shows, only one of the nine hypotheses developed was not supported by the analysis. Surprisingly, the result showed that Pay/Remuneration was not positively related to Employee Motivation ( $\beta = 0.051$ ,  $P > 0.01$ ). Large value impacts are thought to be standardized route coefficients with values close to one. Each residual is split by an estimate of its standard error in the Path analysis, and all of them have a standard normal distribution with an absolute value smaller than two. The mediation analysis is done by SOBEL test which suggests that the P value should be less than 0.05 for the relation to be accepted (Sobel, 2014). In our study both PR → EM → ES ( $a = 0.365$ ,  $b = 0.183$  &  $p\text{-value} = 0.002$ ) and RG → EM → ES ( $a = 0.164$ ,  $b = 0.468$  &  $p\text{-value} = 0.01$ ) are accepted as the P-value is less than 0.05. Hence, it concludes that there is mediating effect of employee motivation in the relationship of Employee satisfaction (ES) with

Pay/remuneration (PR) and Recognition (RG).

**Table 5:**

*Path Estimates for Structural Model*

| Hypothesis                                    | Estimate | S.E. | C.R.  | P    | Hypothesis result |
|---|----------|------|-------|------|-------------------|
| Organizational climate Employee satisfactions | .101     | .025 | 3.983 | ***  | Significant       |
| Organizational climate Employee motivation    | .153     | .030 | 5.053 | ***  | Significant       |
| Recognition Employee satisfactions            | .163     | .030 | 5.477 | ***  | Significant       |
| Recognition Employee motivation               | .154     | .032 | 4.748 | ***  | Significant       |
| Pay/Remuneration Employee satisfactions       | .051     | .032 | 1.582 | .114 | Insignificant     |
| Pay/Remuneration Employee motivation          | .171     | .039 | 4.436 | ***  | Significant       |
| Nature of work Employee satisfactions         | .176     | .036 | 4.856 | ***  | Significant       |
| Nature of work Employee motivation            | .243     | .042 | 5.816 | ***  | Significant       |
| Employee motivation Employee satisfactions    | .109     | .029 | 3.806 | ***  | Significant       |

Mergers today are happening more regularly as a method of gaining competitive advantage (Sambu et al., 2018). M&A has been a kind of issue today because there are many organizations which are undergoing through merger and acquisition and the main reason behind why mergers are being occurred is still a controversy topic nowadays (Amel & Rhoades, 1989). This study tries to explore the scenario of employee satisfaction after merger and acquisition in Nepalese banking sectors. The thinking behind mergers and acquisitions (M&A) is that two organizations together are more important than two separate organizations and it creates synergy, growth and expansion of the business and these types of activities mostly occur in banking sectors (Madininos et al., 2009).

This study reveals that the majority of the respondents' work performance has been influenced by merger and acquisition as 44.58% of respondents agreed on the fact that M&A has influenced their level of job satisfaction. Likewise, it also reveals that merger and acquisition has influenced work performance as 77.42% of respondents stated. The study also stated that the employees were treated fairly during M&A process and around half of the respondents feel the present and past management is equally supportive. This research has also provided an overview of

relationships among several variables and employee satisfaction with merger so as to measure the satisfaction level of employees after the merger process. The results demonstrate the relationship between Organizational climate, Recognition, Pay/Remuneration, Nature of work and employee motivation with employee satisfaction after merger. The results presented here demonstrate that Organizational climate has significant impact on the employee satisfaction with merger. In overall perspective, the study indicates that employees are satisfied with the organizational climate of the organization after merger and acquisition and it also helps to keep the employees motivated. Castro and Martins (2010) also reported a solid positive connection between organizational climate and employee satisfaction. In the study conducted by Akali (2010) discovered that factors that influence employee's satisfaction and performance included compensation, promotion recognition and work conditions which is similar with the result of the study that there is significant relationship between recognition and employee satisfaction with merger.

The results of this study reveal that Nature of work and employee motivation impact employee satisfaction after merger and suggest that these factors should be a key consideration in planning for a merger so as to keep the employees motivated and satisfy them. Our study reveals Pay/Remuneration has no impact on employee satisfaction after merger but has impact on employee motivation which supports the finding of Herzberg, Mausner, & Snyderman, 1967. Herzberg, Mausner, & Snyderman, 1967 in their study stated that pay cannot create job satisfaction but it can lead to job dissatisfaction if not handled properly. At the end our study also revealed the presence of a positive relationship between employee motivation and employee satisfaction with merger. In exploring, employees' satisfaction after merger and acquisition in Nepalese banking sectors of Kathmandu valley which shows that there is partial mediation of employee motivation (EM) between pay/remuneration (PR) and employee satisfaction (ES) and also there is partial mediation of employee motivation (EM) between recognition (RG) and employee satisfaction (ES).

These results are relevant globally. From underdeveloped nations to the developed ones, employee satisfaction is core in any organization. Although findings from previous studies examining the interaction between merger and acquisition and job satisfaction have been mixed, it is important to study the relationship of job satisfaction and merger and acquisition to determine whether M&A has influenced employee satisfaction or whether the resulting positive or negative job satisfaction is related to the M&A (Stahl & Mendenhall, 2005). (Cartwright & Cooper, 1990; Newman & Krzystofiak, 1993) found that more than half of the problems are related with the people and HR management issues because they experience cultural shock. Thus, it shows that the results drawn in this research can serve great roles to transform the employee dissatisfaction related barriers for effective performing of the organizations.

### **Conclusion and Recommendation**

This study was an attempt to examine the effects of merger and acquisition on employees' satisfaction in Nepalese banking sectors of Kathmandu valley. The primary goal of the study

was to analyze the factors affecting employee satisfaction after merger and acquisition. This study finds that M&A has influenced the level of job satisfaction in banking sectors of Nepal. It also reveals that most of the employees were treated fairly during M&A process and around half of the respondents feels that the present and past management make equal supports. Correlation estimates and p-value indicate Organizational climate, Recognition and Nature of work have impacts on employee motivation and employee satisfactions after merger but it has stated that Pay/Remuneration can motivate employees but doesn't satisfy the employees. It is because all p-value is 0.00 except for the hypothesis that indicates relationship of employee satisfactions after merger with pay/remuneration. Furthermore, employee motivation has a significant relationship between employee satisfaction after a merger. This means that pay/remuneration can have an indirect impact on employee satisfaction after a merger. Thus, it shows that all variables should be a key consideration in planning for a merger as these have impacts on the satisfaction level of employees after the merger and acquisition in the banking sectors.

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# Performance Appraisal System and Employee Motivation in International Non-Governmental Organizations in Nepal

Gangaram Biswakarma\*, Sanjog Singh Kadayat\*\*

\*Central Department of Management, Tribhuvan University, Kritipur, Nepal

\*\*School of Management, Tribhuvan University, Kritipur, Nepal

## Abstract

**Background:** Strong organizations must maintain vital activities and help others survive. All non-profit organizations (NPOs) aim to increase customers' social well-being. These organizations have been under pressure to enhance management, efficiency, effectiveness, and accountability recently. A performance evaluation system is essential to internal monitoring and control in non-governmental organizations due to a diversified and linked workforce that works toward several layers of organization-specified objectives at different levels.

**Objectives:** This study aims to explore the performance appraisal system of International Non-Governmental Organizations in Nepal. Additionally, it is to analyze the effect of the performance appraisal system on employee motivation in these organizations in Nepal.

**Methods:** The study adopted a mix-method. Data were collected using a structured questionnaire of 300 employees, with 212 responses from six INGOs operating in Nepal and 5 HR managers of the INGOs. The performance appraisal system considered components, i.e., performance appraisal purpose, performance appraisal standard, feedback on performance appraisal, reliability of ratings, and rather assurance on employee motivation.

**Findings:** The results determined that performance appraisal purpose, reliability of ratings, and rater assurance significantly affect employee motivation. In contrast, feedback on performance appraisal and performance appraisal standards did not significantly impact employee motivation.

**Conclusions:** An organization's fair and accurate performance appraisal system helps employees feel unbiased and motivates them toward work. Employees should receive performance appraisals to verify that the authorities have reviewed their work. It inspires them.

**Keywords:** Employee motivation, INGOs in Nepal, non-governmental organizations, performance appraisal system,

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## Correspondence:

Gangaram Biswakarma  
dgrbiswa@gmail.com

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**Introduction**

A strong organization must guarantee that relevant activity is continued while aiding organizations in surviving (Al-Jedaia & Mehrez, 2020). All non-profit organizations (NPOs) strive to add social value to the lives of their clients/beneficiaries (Moura et al., 2022). These organizations have been under pressure recently to enhance management, efficiency, effectiveness, and accountability. Non-profit organizations, according to DeVaro, Maxwell, and Morita (2017), have a social mission that produces intrinsic motivation in their employees, and they are motivated more by their acts than by rewards. Workers at non-profit companies are motivated by the same ideals and incentives as employees in for-profit businesses, but these factors are applied differently (Schepers et al. 2005). Non-profit organizations (NPOs) are inherently more intricate, labor expensive, and dynamically intertwined with their external environment than other types of organizations. A performance assessment system, when implemented properly, may give employees with clear expectations and goals, frequent feedback on their performance, and chances for professional growth. Employee engagement and motivation may be increased if they believe their contributions are recognized and they get the support they need to learn and advance in their positions.

A performance appraisal system is a vital aspect of internal monitoring and control in Non-Governmental Organizations owing to a diversified and linked workforce that work towards several layers of objectives defined by the organization at different levels (Shinwari & Rahimi, 2018). A performance appraisal system is frequently cited as a vital component for increasing employee motivation (Selvarajan & Cloninger, 2009). A sound performance appraisal system contributes to improved employee commitment through direct influence on employees' work outcomes (Biswakarma, 2017). A well-structured performance appraisal system promotes a compelling connection between managers and subordinates. In turn, it aids in the identification of organizational strengths and weaknesses that are logically related to the organization's strategic objectives (Armstrong, 2009).

Conversely, if a performance appraisal system is poorly designed or implemented, it can have the opposite effect and demotivate employees. It is important for NPOs to consider the unique challenges and needs of their international operations when designing and implementing a performance appraisal system, and to ensure that it is fair, transparent, and aligned with the organization's mission and values. An effective performance management process aids strategic decision-making by providing consistent, trustworthy, and valid data (Idowu, 2017). The view of Foot and Hook (2011) and Coens and Jenkins (2000) has observed that an effective performance appraisal system should possess the form of purpose, standardization, communication feedback, rating accuracy (reliability and validity), rater assurance recognition of differences and honesty. Non-governmental organizations that promote social causes or specialized groups need an effective performance appraisal system to measure goal achievement and keep staff at their best by assessing their training and development needs (Vadde, 2017). Performance appraisal systems enhance profits. Performance appraisals can inspire workers to



attain strategic goals (Bulto & Markos, 2017).

However, a performance appraisal system that lacks defined objectives is unreliable and is not believed by workers may have significant consequences such as poor employee motivation and unhappiness, which leads to decreased staff productivity (Tuytens & Devos, 2012). According to Jabeen (2011) and Mehta (2014), stated that a performance assessment system can either encourage or demotivate people depending on its impartiality and accuracy.

Performance appraisal is one of the most widely studied topics in management worldwide. Justin and Joy (2022) concludes in studies periods 2000 to 2020 the PM literature's emphasis shifted from traditional historical evaluations conducted once or twice a year to forward-looking, feedback-enriched PM systems. They conclude that the area of research focused to reactions to PM system, factors that influence PM system, quality of rating sources, evaluating the PM system and types of the PM system. There are few studies like Rijal (2014), Biswakarma (2017), Pandey (2020), and Dangol (2021) that assess the effectiveness of the performance appraisal system in Nepal. However, there has been limited research on the performance appraisal system and its relationship to motivation in international non-governmental and non-profit organizations.

Therefore, this study aims to explore the performance appraisal system of international Non-Governmental Organizations in Nepal. Additionally, it is to analyze the effect of the performance appraisal system on employee motivation in these organizations in Nepal, which are known for their reasonable workplace assurance and benefits.

### **Review of Literature**

There are three models that have been proposed to describe the process that leads to performance reviews (Barends et al., 2017). These theories are alluded to as the Social Comparison Theory (Festinger, 1954), the Equity Theory (Adams, 1965), and the Feedback Intervention Theory (Kluger & DeNisi, 1996). The social comparison theory argues that humans form their sense of self-worth based on how they measure up to those around them. It suggests that people have a tendency to judge their own success based on how they stack up to others (Patel, 2018). Festinger (1954) claims that people are worried about their overall performance as well as how they compare to the performance of their contemporaries. According to this theory, individuals have a strong drive to improve their performance if they are presented with comparable information that is unfavorable or of a poor quality. Considering the feedback intervention hypothesis, Kluger and DeNisi (1996) provided an explanation as to why feedback is not always useful in terms of increasing following performance. It is hypothesized that people are driven to improve their performance when they are shown that there is a gap between what they want to accomplish and the feedback they have received.

As a function of this, performance evaluations are based on the assumption that informing workers about the gap between their expectations and their actual achievements would motivate them to do better (Barends et al., 2017). According to the equity theory, employees of a company compare themselves to one another in terms of the inputs and outputs they produce

(Walster et al., 1978). Adams (1965) advocated for there to be a fair balance that needed to be achieved between the inputs that employees made and the outputs that they generated. When high performers observe that low performers receive lower assessment ratings and, as a result, lesser rewards, they have the impression that a fair balance is being established, which motivates them to keep doing a work that is of a high quality. On the other hand, employees who perform below expectations make greater efforts to achieve a higher level (Barends et al., 2017).

The theories stressed the relationship between motivation and performance appraisal from the standpoint of expectation and goal setting. According to Kreitner and Kinicki (2007), assumes that individuals are driven to act in ways that lead to valued and desired results. According to this theory, an employee will be motivated if they feel that improved performance would result in a more favorable performance review, which will assist them in achieving their own goals. Similarly, Locke (1968), employees are driven to perform for an organization when they are given explicit and quantifiable objectives to attain. Motivational theory focuses mostly on the necessity of creating goals for employees (David et al., 2007). According to Coetsee (2003), employees with the greatest performance are goal-oriented.

According to Grote (2002), performance appraisal is a formal management technique used to evaluate the quality of an employee's performance. A performance appraisal is a formal communication opportunity between management and an employee to review the individual's past performance and recommend areas for improvement (Karol, 1996). Standardization, communication feedback, rating dependability, and rater precision should characterize an effective performance evaluation system (Coens & Jenkins, 2000). Similarly, motivation is any aspect that motivates a person's behavior to continue progressing. Motivation is defined by Bartol and Martin (1998) as a force that reinforces behavior, offers direction, and energizes the inclination to be persistent. In contrast, Luthans (2020) defines motivation as a combination of physiological or psychological deficiencies and wants, impulses, and rewards.

Motivation is, in general, a naturally occurring impulse or energy that provides a signal of direction and perseverance that demonstrates parity in all areas of aim (Farooqi & Shaheen, 2014). Several studies e.g., Hauwaert et al. (2022) explain how formalization may improve management effectiveness. Confirm autonomous work motivation affects enabling performance assessment systems and managing performance. The purpose of employee performance reviews is a key component of what motivates employees because it reminds them of how important performance reviews are (Aydin & Tiryaki, 2018). But research shows that the reason for performance reviews doesn't make a big difference in how motivated employees are.

**Performance Appraisal Purpose on Employee Motivation:** Idowu (2017) showed that a performance appraisal that is tied to the organization's goals makes employees less reluctant and encourages them to do improved work for the organization. A good performance review system brings employees and the organization together by aligning their goals with the overall mission of the organization (Mainali, 2010). In a similar way, Subekti's (2021) study suggested that the employee's performance appraisal system affected both job satisfaction and

job motivation. Alsuwaidi et al. (2020) looked at a full analysis of performance appraisal and employee motivation and put it all together in a way that was easy to understand. They did this to find out what effect the performance appraisal system has on employees' motivation.

Okoth and Florah (2019) conclude that fairness in performance evaluation, performance appraisal feedback, performance incentives, and setting performance goals had a positive and significant effect on teacher motivation in a sub-county in Kenya. Idowu (2017) needs to look into how well the performance review system works and how it affects how motivated employees are. He found that employees were happier and more motivated when they were evaluated in more than one way. Kim and Park (2017) said that South Korean employees of non-government organizations could be more motivated and engaged if the performance appraisal system was used in the right way. Chaponda (2014) wrote about how the performance appraisal system helps employees at NGOs do their jobs better and stay motivated. Al-Jedaia and Mehrez (2020), on the other hand, found that performance evaluation criteria and leadership did not have a big impact on employee motivation in the government sector in Qatar. Therefore, the following hypothesis has been identified.

**Hypothesis 1:** *There is an effect of performance appraisal purpose on employee motivation in non-governmental organizations.*

**Effect of Performance Appraisal Standard on Employee Motivation:** In research on NGOs in Yemen, Al-Baidhani and Alsaqqaf (2022) found that there is performance appraisal, that there is a performance appraisal procedure, and that the fairness of the performance appraisal process has a highly substantial beneficial impact on job satisfaction. Bulto and Markos's (2017) study explains that if the performance assessment standards are adequately defined and conveyed to employees, then employees become aware of what is to be anticipated from performance appraisal in the firm. The employees gain a sense of safety as a result of this, which in turn helps to boost their motivation. However, Al-Jedaia and Mehrez (2020) found that performance assessment criteria do not have a substantial influence on employee motivation or work satisfaction in firms that are part of the public sector. Their findings were based on research conducted in the United States. As of this, the following hypothesis has been determined.

**Hypothesis 2:** *There is an effect of performance appraisal standards on employee motivation in non-governmental organizations.*

**Effect of Feedback on Performance on Employee Motivation:** Several studies on feedback and motivation show a relationship between providing employees with performance assessment feedback or ongoing feedback and increasing their level of motivation. Study conducted by Lee (2017) on federal employees, the motivating impact was shown to be greater for those individuals who view performance appraisal as fair and are content with post-assessment feedback. According to Megira (2017)'s findings, continual feedback, provided it is relevant to employees, offers employees an indicator of how they may develop themselves personally as well as professionally. As a result, the level of motivation they feel can be significantly

altered by the feedback they get. Researchers Bulto and Markos (2017) came to the conclusion that continuous feedback on performance assessment does not have an influence on employee motivation and, in certain situations, can potentially demotivate employees based on their findings from research performed in middle income developing nations. As a consequence of this, the following theory has been established.

**Hypothesis 3:** *There is an effect of feedback on performance appraisal on employee motivation in non-governmental organizations.*

**Effect of Reliability of Ratings on Employee Motivation:** Dierdorff and Surface (2007) and Ellinger (2014) findings emphasized feedback and ratings of performance to make the performance appraisal effective. Malik and Alsum (2013) concluded that it is much more crucial in developing nations to ensure the dependability of performance assessment ratings in order to create employees' faith in the system. Dangol (2021) concluded that providing employees with accurate evaluations has a significant part in increasing their levels of motivation within Nepalese service organizations. Accurate and reliable ratings help firm personnel enhance their performance. A reliable rating shows employees that they have promotion and professional progress possibilities, which motivates them. As a consequence of this, the following theory has been established.

**Hypothesis 4:** *There is a significant effect of reliability of ratings on employee motivation in non-governmental organizations.*

**Effect of Rater Assurance on Employee Motivation:** Barbieri et al. (2023) studied Italian PA systems for senior civil servants and found that the framework accurately represents the variation in performance appraisal system design, highlighting the importance of multi-source feedback and face-to-face rater-ratee interactions in rating *discriminability*. According to Bulto and Markos (2017), employees are more likely to do their jobs in an effective manner if their supervisor is devoid of bias and offers support to them, which helps enhance both the employees' performance and their rankings within the company. As a consequence of this, the level of rater assurance has a substantial bearing on the level of incentive felt by workers. In order for employees to be motivated by the performance assessment system that is utilized in a business, they need to have the perception that the raters and the ratee itself are not prejudiced against them (Dangol, 2021). As a consequence of this, the following hypothesis has been determined.

**Hypothesis 5:** *There is an effect of rater assurance on employee motivation in non-governmental organizations.*

The above literature mentions that the effect of positive employee motivations can be contributed by critical and effective performance appraisal process. There are limited literature focusing to the INGOs in respect of their performance appraisal system and its impact on the employee motivation. However, in general, Mayer and Davis (1999) findings that if performance appraisal is effective, then it can play a significant role in developing trust of employees on organizational systems and be motivated. Employees can be given performance reviews so that

they are aware that everything they have done has been documented and reviewed through by the appropriate authorities. They will be motivated to offer more to the organization as a result of it.

### Materials and Methods

The research utilized a mixed-method approach. Employee questionnaires were sent to International Non-Governmental Organizations. Three to five visits ensured data collection. HR manager the key informant interviews provided primary qualitative data. Three in-person interviews and two Zoom interviews were done. These five organizations are based in Kathmandu and have headquarters abroad and work in rural regions with local partners in Kathmandu. Semi-structured interviews lasted 60–120 minutes. Interview notes were written. This study includes qualitative data from two community and rural development organizations and one each in health and sanitation, child welfare, and women empowerment. The results have been segregated thematically and triangulated with findings of quantitative analysis.

Based on the theoretical model for the study, the questionnaire for an effective Performance Appraisal System was developed by adopting the study of Aydin and Tiryaki (2018) and Bulto and Markos (2017) with modifications to fit the study requirements. To measure employee motivation, 10 items out of 20 items designed by Jahagirdar (2012) were adopted for this study. Performance Appraisal Purpose (PAP) have 5 items adopted from Aydin and Tiryaki (2018); Performance Appraisal Standard (PAST) have 5 items from Bulto and Markos (2017); Feedback on PA (PAF) have 5 items from Aydin and Tiryaki (2018); Reliability of Ratings (RR) have 5 items from Bulto and Markos (2017); Rater Assurance (RA) have 4 items from Bulto and Markos (2017) and Employee Motivation (RA) have 10 items from Jahagirdar (2012). Items were scaled on a 5-point Likert scale that ranges from strongly disagree – 1 to strongly agree – 5. The study. All the items have a reliability of more than 0.7.

Since 1990, 50360 organizations have been registered with the Social Welfare Council (SWC) in Nepal. There are 211 INGOs working under an agreement with the Social Welfare Council (SWC) in Nepal in 7 distinct sectors, i.e., community and rural development, child welfare, women's services, health and sanitation, earthquake recovery, education and literacy, and agriculture and enterprise (SWC, 2021). This study covered organizations pertaining to 5 out of 7 of the mentioned sectors purposefully. Among them, 2 worked in community and rural development and 1 each in health and sanitation, education and literacy, child welfare, and women's services. Since organizations with more than 5 years of existence have a chance of having a well-formed PAS, 6 organizations fulfilling the criteria were selected. To justify the sample size, G\*Power v3.1.9.7 was used with medium effect size  $f^2 = 0.15$  (Cohen (1992)'s minimum acceptable range of 0.02), Power = 0.95, and 5 predictors and a minimum sample 89 sample size was determined. Predicting minimal sample size before data collection and analysis is typically preferred to calculating afterward (Gerard et al., 1998).

A total of 300 employees from these six organizations (50 each) were selected, and structured questionnaires were distributed to them. Convenience sampling was applied for sample



selection in terms of the employees within these organizations. Out of these, 212 responses were received, i.e., a response rate of 70.67%. During EDA, four of these responses were identified as outliers, and finally, 208 responses were utilized for this study.

Out of 208 respondents, 51% were male, and 49% were female, which means that the study can be generalized to both gender groups and is not biased toward singular demography. In terms of age, the highest number of respondents were aged 31–35 years old, with 30.3%. This is further supported by the demography of years of service provided, with only 8.2 per cent of respondents having worked for less than a year. Additionally, the respondents were composed of 31.7% managers and 32.7% officers who are most responsible for carrying out appraisals as well as have been subjected to appraisals. Furthermore, most of the respondents, i.e., 38 per cent, are affiliated with organizations that work towards community and rural development, and the remaining sectors have a representation of 14 – 17 per cent each. This can be a reflection of how most of the non-governmental organizations working in the region focus on the development of rural communities.

The research balanced both gender groups and is not skewed towards a single demographic, as shown by the fact that 51% of 208 respondents were male and 49% were female. The age group of 31 to 35 years old had the highest percentage of responders (30.3%). This is backed up by the fact that just 8.2% of respondents had worked for less than a year. Furthermore, 31.7% of the respondents were managers, and 32.7% were officers who were carrying out appraisals. Furthermore, the majority of respondents (38%) are linked to the community and rural development sectors, with the other sectors accounting for 14–17% of the total. This may be due to the fact that the majority of non-governmental organizations in the area are focused on rural community development.

The first step of data analysis undertaken was identify outliers and test normality. PLS-SEM path analysis followed inner and outer model evaluation. Measurement Model assessment analyzed convergent and discriminant validity. The explanatory power of independent variables on employee motivation was measured using  $R^2$ . IBM SPSS v26 and SmartPLS v4.0 helped researchers analyze data. The qualitative data was analyzed in thematic approach.

To ensure that outliers are not deceived, data normality must be checked before quantitative analysis (George, 2011). Before testing the measurement model and inner path model in two stages, the data was normalized. The data failed to achieve univariate and multivariate normality. SPSS v26 measured skewness and kurtosis. The results show a range of values exceeding from -1 to +1, indicating a deviation from normality. The test revealed that the variable distribution was not normal (Bruin, 2006). Mardia's multivariate skewness and kurtosis shows exceeding the threshold of +3 skewness and +20 (Kline, 2016) is not normal data.

Likewise, cross-sectional data may cause common technique variance in the research. SPSS v26 performed the Harman single-factor test to determine the CMV. Multiple factors with eigenvalues below one were found. The overall variance retrieved by one component is 36.985%, eliminating typical method bias. It's below 50% (Podsakoff et al., 2003).

## Results and Discussion

### Performance Appraisal System and Employee Motivation in Nepal

All non-governmental organizations under study conduct regular performance reviews, which 99 percent of respondents agree with. 52.9 percent of responders are evaluated annually, while 23.6 percent are evaluated quarterly and semiannually. 43.8% of employees in the investigated firms use 360-degree assessment. Personnel Assessment Forms evaluate 28.4% of workers. Employees in one company know that their performance review approach is Performance and Competency Evaluation (PACE).

Likewise, 6.7% of employees are new or don't think PAS is significant, thus they don't know what appraisal system tool the company utilizes, and 6.7% of employees are new or don't think PAS is significant, thus they don't know what appraisal system tool the company utilizes. Respondents (96.6%) believe they receive regular performance evaluation, whereas 3.4% may have felt left out of constructive criticism according to their appraisal. Similarly, 10.1% of respondents believe that performance evaluation does not influence training programs, while the remainder believe that PA does. Alongside, 59.1% of respondents believe that the organization adapts its activities and goal sets based on performance appraisal results, which would help employees become more competent.

Performance appraisal with purpose had a mean score of 3.93 (SD = 0.58), indicating that most employees believe they have a purposeful PAS, which is essential for success. The performance appraisal standard obtained a mean score of 3.91 (SD = 0.57), indicating that employees think their company's appraisal system is standardized and clear about what it measures. Employees agreed that performance appraisal feedback was reflective with a mean response of 3.79 (SD=0.52). Respondents' assessments are slightly dependable, with a mean of 3.73 (SD = 0.55). Rater Assurance had a mean response of 3.73 (SD = 0.30), indicating that respondents slightly agree that their raters/supervisors are not prejudiced in performance evaluations. Finally, non-governmental employees had a mean of 3.86 (SD = 0.55), indicating fair motivation.

The survey revealed that the majority of respondents had a favorable opinion of the PAS applied by their organization. This may be due to the fact that these organization's PAS is modeled after the guidelines of global authorities that regulate organizations like this one. It is possible that the respondents' positive attitude towards the PAS and its performance within the organization is due to the respondents' positive attitude towards the PAS and its performance.

The results also revealed a mean response of 3.73 (SD = 0.55), which signifies that workers of non-profit organizations in the area are well-motivated towards their jobs, which may be attributed to the nature of employment, which is the uplift of society as a whole, or the financial advantages they obtain by being attached to international agencies.

Performance Appraisal Purpose correlated positively with Employee Motivation (0.567,  $p < 0.01$ ). Purposive performance appraisal motivates employees. The performance appraisal standard is moderately positively correlated with employee motivation (0.490,  $p < 0.01$ ). It showed that standardized appraisal systems motivate employees. Performance appraisal

feedback and employee motivation are associated (0.516,  $p < 0.01$ ). Better assessment feedback motivates employees. Rating reliability and employee motivation in non-profit firms were moderately correlated (0.487,  $p < 0.01$ ). Higher rater assurance is associated with employee motivation (0.585,  $p < 0.01$ ).

**Table 1***Descriptive and Correlational Analysis*

| Variable                                | Mean | Std. Dev. | Skewness |            | Kurtosis |            | Correlation |        |        |        |        |    |
|---|------|-----------|----------|------------|----------|------------|-------------|--------|--------|--------|--------|----|
|   |      |           | Skewness | Std. Error | Kurtosis | Std. Error | PAP         | PASt   | PAF    | RR     | RA     | EM |
| Performance Appraisal Purpose (PAP)     | 3.93 | 0.58      | -0.662   | 0.17       | 2.419    | 0.34       | 1           |        |        |        |        |    |
| Performance Appraisal Standard (PASt)   | 3.91 | 0.57      | -0.778   | 0.17       | 4.034    | 0.34       | .533**      | 1      |        |        |        |    |
| Feedback on Performance Appraisal (PAF) | 3.79 | 0.52      | -0.551   | 0.17       | 2.512    | 0.34       | .571**      | .575** | 1      |        |        |    |
| Reliability of Ratings (RR)             | 3.73 | 0.55      | -0.353   | 0.17       | 2.185    | 0.34       | .507**      | .552** | .618** | 1      |        |    |
| Rater Assurance (RA)                    | 3.72 | 0.6       | -0.171   | 0.17       | 3.283    | 0.34       | .442**      | .457** | .422** | .422** | 1      |    |
| Employee Motivation (EM)                | 3.86 | 0.55      | -0.426   | 0.17       | 3.902    | 0.34       | .567**      | .490** | .516** | .487** | .585** | 1  |

\*\* Correlation is significant at the 0.01 level (2-tailed).

Organizations prefer different appraisal tools. The study showed that community and rural development non-governmental organization staff are rated by 360-degree appraisal (33.8%) and PACE (33.8%). A 360-degree review gave child welfare and women's services personnel 69 and 72.7 percent, respectively. The bulk of health and sanitation staff, 50%, are evaluated with PA forms or service evaluation forms. Global supervisors rated in this way. A 10% of employees in the same sector were ignorant of the method. Thus, PAS tools used by the largest non-governmental contributors varied. Organizational controls caused these discrepancies. The country's office administered and oversaw appraisals in several organizations, which governed their personnel and feedback procedures. In firms where global HQs did final ratings and target assessments, the national office just recorded the data, simpler performance appraisal techniques were used.

**Table 2***Cross Tabulation - Major Sector vs PAS Tool Used*

| PAS Tool/<br>Major Sector       | 360 Degree Appraisal | Balanced Score-card | PA Forms | Observation Basis | PACE   | I am not sure | Total   |
|---------------------------------|----------------------|---------------------|----------|-------------------|--------|---------------|---------|
| Community and Rural Development | 26                   | 2                   | 16       | 2                 | 26     | 5             | 77      |
|                                 | 33.80%               | 2.60%               | 20.80%   | 2.60%             | 33.80% | 6.50%         | 100.00% |
| Health and Sanitation           | 8                    | 2                   | 15       | 2                 | 0      | 3             | 30      |
|                                 | 26.70%               | 6.70%               | 50.00%   | 6.70%             | 0.00%  | 10.00%        | 100.00% |
| Education and Literacy          | 12                   | 0                   | 14       | 7                 | 0      | 2             | 35      |
|                                 | 34.30%               | 0.00%               | 40.00%   | 20.00%            | 0.00%  | 5.70%         | 100.00% |

|                |        |       |        |       |        |       |         |
|----------------|--------|-------|--------|-------|--------|-------|---------|
| Child Welfare  | 20     | 0     | 7      | 0     | 0      | 2     | 29      |
|                | 69.00% | 0.00% | 24.10% | 0.00% | 0.00%  | 6.90% | 100.00% |
| Women Services | 24     | 0     | 6      | 1     | 0      | 2     | 33      |
|                | 72.70% | 0.00% | 18.20% | 3.00% | 0.00%  | 6.10% | 100.00% |
| Total          | 90     | 4     | 58     | 12    | 26     | 14    | 204     |
|                | 44.10% | 2.00% | 28.40% | 5.90% | 12.70% | 6.90% | 100.00% |

### Measurement Model Assessment

Measurement model assessment examined convergence and discriminant validity. Composite reliability and AVE were tested for convergent validity. Fornell-(1981) Larcker's criterion, cross-loading analysis, and the Heterotrait-Monotrait Ratio validated discriminant validity (Henseler et al., 2014). Cronbach's alpha assessed latent variable items' internal consistency. In social science research, all variables have alpha values above 0.70, indicating good construct dependability. The constructs were reliable since all latent variables had rho values greater than 0.7. (Dijkstra & Henseler, 2015). Composite reliability exceeded 0.7, proving reliability (Henseler et al., 2014). Fornell and Larcker (1981) defined convergent validity as a notion explaining more than half of its indicators' variation. Thus, latent variable convergent validity appears acceptable. For discriminant validity, the Fornell-Larcker criterion (Fornell & Larcker, 1981) and HTMT (Henseler et al., 2015) were met, indicating divergent validity (Fornell & Larcker, 1981). The HTMT also has a 0.85 threshold (Henseler et al., 2015). All pairwise HTMT0.90 ratios are smaller than 0.90. The model was discriminately valid (Henseler et al., 2014).

Reliability rating item RR5 and employee motivation item EM7 were dropped from the study due to cross-loading. EM2, EM3, EM4, EM6, PAF3, and RR2 had built loadings < 0.7. Since AVE was above 50%, loading levels were considered. Loading between 0.4 and 0.7 is acceptable if CR and AVE cross the threshold (Hair et al., 2017). Tables 3, 4, and 5 provide the measurement model assessment. The appendix contains cross-loading.

**Table 3**

*Reliability and Validity Measures of the Constructs*

| Latent Variables | Cronbach's Alpha | rho_c | Composite Reliability | Average Variance Extracted (AVE) |
|------------------|------------------|-------|-----------------------|----------------------------------|
| PAF              | 0.764            | 0.770 | 0.84                  | 0.513                            |
| PAP              | 0.822            | 0.830 | 0.875                 | 0.584                            |
| PAS <sub>t</sub> | 0.801            | 0.803 | 0.862                 | 0.556                            |
| RA               | 0.832            | 0.835 | 0.888                 | 0.666                            |
| RR               | 0.757            | 0.764 | 0.846                 | 0.579                            |
| EM               | 0.876            | 0.882 | 0.901                 | 0.505                            |

**Note:** PAP = Performance Appraisal Purpose, PAS<sub>t</sub> = Performance Appraisal Standard, PAF = Feedback on Performance Appraisal, RR = Reliability of Rater, RA = Rater Assurance and EM = Employee Motivation

**Table 4**

*Fornell-larcker Criterion*

| Variables | EM           | PAF          | PAP          | PASt         | RA           | RR           |
|-----------|--------------|--------------|--------------|--------------|--------------|--------------|
| EM        | <b>0.711</b> |              |              |              |              |              |
| PAF       | 0.63         | <b>0.716</b> |              |              |              |              |
| PAP       | 0.623        | 0.616        | <b>0.764</b> |              |              |              |
| PASt      | 0.616        | 0.677        | 0.574        | <b>0.745</b> |              |              |
| RA        | 0.691        | 0.551        | 0.524        | 0.592        | <b>0.816</b> |              |
| RR        | 0.683        | 0.677        | 0.564        | 0.674        | 0.634        | <b>0.761</b> |

**Note:** PAP = Performance Appraisal Purpose, PASt = Performance Appraisal Standard, PAF = Feedback on Performance Appraisal, RR = Reliability of Rater, RA = Rater Assurance and EM = Employee Motivation

**Table 5**

*Heterotrait - Monotrait ratio (htmt)*

| Variables | EM    | PAF   | PAP   | PASt  | RA    | RR |
|-----------|-------|-------|-------|-------|-------|----|
| EM        |       |       |       |       |       |    |
| PAF       | 0.756 |       |       |       |       |    |
| PAP       | 0.72  | 0.772 |       |       |       |    |
| PASt      | 0.727 | 0.852 | 0.709 |       |       |    |
| RA        | 0.804 | 0.686 | 0.628 | 0.727 |       |    |
| RR        | 0.835 | 0.887 | 0.717 | 0.854 | 0.794 |    |

### Structural Model -Model Fit and Path Analysis

To determine the goodness of fit of the current model, the Standardized Root Mean Square Residual (SRMR) introduced by Henseler et al. (2014) was used. In a conservative setting, Hu and Bentler (1999) considered a value of less than 0.08 to show a good fit for the model. Table 7 shows that the value of SRMR was less than 0.08, and hence goodness of fit can be verified for the model employed for the study. Next, the coefficients of determination  $R^2$  values were calculated to analyze the amount of explained variance of the endogenous construct in the study model. It was noticed that the value of  $R^2$  was 0.631, which implies that Performance Appraisal Purpose, Performance Appraisal Standard, Feedback on Performance Appraisal, Reliability of Ratings, and Rater Assurance jointly explain 63.1 per cent of the variation in employee motivation.  $R^2$  values of 0.25, 0.50, and 0.75 for the target construct, respectively, are regarded poor, medium, and substantial (Hair et al., 2017).

To determine the path coefficient significance was assessed using bootstrapping technique with 10000 resampled (Hair et al., 2021), using BCa bootstrap confidence intervals for significance testing, the respective weights were significant, and the sample mean lies between CI of 2.5 % to 97.5 % for both of the constructs.

The results of the PLS structural model show three significant effects, presented in table 8 that is the p-value of Performance Appraisal Purpose ( $p < 0.01$ ), Reliability of Ratings ( $p < 0.05$ ), and Rater Assurance ( $p < 0.01$ ) have shown a significant effect on employee motivation. The results indicate that Rater Assurance has a greater effect on employee motivation (Beta 0.332,  $p < 0.01$ ), followed by the reliability of the rater (Beta 0.232,  $p < 0.01$ ) and performance appraisal purpose (Beta 0.208,  $p < 0.01$ ). Therefore, the result supports H1, H4, and H5. That means the non-

governmental organizations in Nepal primarily focus on rater assurance, reliability of raters, and performance appraisal purposes, which helps them to enhance their employees' motivation. However, the p-values of performance appraisal standards and feedback on appraisal were more than 0.05 significant level, which suggests that there is no significant impact of performance appraisal standards and feedback on appraisal on employee motivation in non-governmental organizations in Nepal. Therefore, the result failed to support H2 and H3.

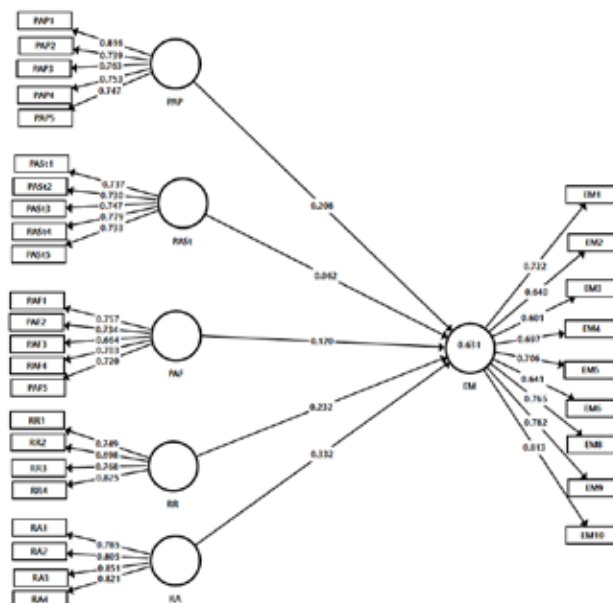
**Table 6***SRMR index*

| Model           | Original Sample (O) | Sample Mean (M) | 95%   | 99%   |
|-----------------|---------------------|-----------------|-------|-------|
| Saturated Model | 0.069               | 0.053           | 0.061 | 0.071 |
| Estimated Model | 0.069               | 0.053           | 0.061 | 0.071 |

**Table 7***SEM path analysis*

| Hypothesis   | Path       | $\beta$ | SD    | T value | Confidence Interval 95% |        | p Values | Supported |
|--------------|------------|---------|-------|---------|-------------------------|--------|----------|-----------|
|              |            |         |       |         | 2.50%                   | 97.50% |          |           |
| Hypothesis 1 | PAP -> EM  | 0.208   | 0.070 | 2.957   | 0.055                   | 0.335  | 0.003    | Yes       |
| Hypothesis 2 | PASt -> EM | 0.062   | 0.079 | 0.782   | -0.093                  | 0.215  | 0.434    | No        |
| Hypothesis 3 | PAF -> EM  | 0.120   | 0.076 | 1.577   | -0.033                  | 0.266  | 0.115    | No        |
| Hypothesis 4 | RR -> EM   | 0.232   | 0.091 | 2.552   | 0.055                   | 0.407  | 0.011    | Yes       |
| Hypothesis 5 | RA -> EM   | 0.332   | 0.083 | 4.006   | 0.178                   | 0.496  | 0.000    | Yes       |

**Note:** PAP = Performance Appraisal Purpose, PASt = Performance Appraisal Standard, PAF = Feedback on Performance Appraisal, RR = Reliability of Rater, RA = Rater Assurance and EM = Employee Motivation

**Figure 2.***Structural Model of the Study*

## Qualitative Data Analysis- Thematic

**Common HR Practices in INGOs:** Non-profit organizations in Nepal, specifically INGOs



work with individuals at three distinct levels. There are international members who provide the guidelines to work and monitor the progress, national level employees who monitor and evaluate the programs in the field and local partners through whom most of the activities are carried out.

*"Have an orientation software where new employees are informed about policies and practices of the organizations and old employees are notified about the modifications"-Key informant\_1*

*"Global HQs provide a guideline annually on people management policies, we provide suggestions and recommendations when it is felt that it does not encompass necessary aspects"-Key informant\_2*

*"Fully support and provide an inclusive employment opportunity for all who have potential to expand skills and knowledge"-Key informant\_3*

*"Adopt a philosophy of non-discrimination and provide an inclusive workplace environment free from harassment where everyone is treated with dignity"-Key informant\_4*

*"HR manual has been developed by HQs which is customized and incorporates laws and regulations of Nepal and passed down to us to follow"-Key informant\_5*

All organizations under study received an HR handbook or guideline from global HQs or donor agencies, streamlining the HR process. These documents meet worldwide standards but are customized to Nepal's labor laws and regulations. The organizations studied prioritize diversity and inclusion because they fight social injustice. Managers highlight that all employees are equal and receive 24-hour conflict management help. Yet, managers stated their methods are less flexible and need a lot more due process. Nonetheless, these firms' HR experts communicate and exchange experiences using AIN platforms.

**Goal Setting:** When it comes to goal setting for employees, the organizations differ in their chain of thought.

*"Discuss among executives and program managers to come up with country level goals and take approval of those from our international partners"-Key informant\_1*

*"Country strategy paper prepared every 4 years with committee of local, national and international representatives and modifications are made yearly as per continuous feedbacks"-Key informant\_2*

*"Strategic goals of organization are robust however individual goals are set by employee in coordination with their line managers"-Key informant\_3*

*"Follow an annual performance cycle where objective canvas is created where employees set individual goals – professional and personal which correlate to global vision of the organization"-Key informant\_4*

*"An annual plan is created at global HQ which is sent to us and plans and policies are developed accordingly"-Key informant\_5*

Organizations have an annual performance cycle to set goals and objectives, but how they communicate them to staff varies. Few firms have a rigorous strategy where the global

Headquarters sets annual targets, which are handed on to the country office, and the higher ups decide how to meet those goals using their present resources and staff. In some firms, the national office prioritizes the following year and works with workers at all levels to set strategic goals, which they then send to global HQs to include into their global purpose.

Lastly, some firms have a complicated goal-setting procedure where the global organization sends out an objective canvas with the overarching aim and all employees create their goals based on it. Achievement and learning objectives are encouraged for professional growth.

**PA Techniques Adopted:** Most of the organizations under study utilize a form of 360-degree evaluation to evaluate employee performance.

*"Focus on evaluation of competency of employees and their performance standards through PACE" -Key informant\_1*

*"Follow Develop to Learn system which evaluates employee's performance goals as well as learning and career growth in a yearly basis" -Key informant\_2*

Organisations' performance evaluation systems are called Develop to Perform (DTP) or Performance and Competency Evaluation (PACE). These systems emphasize organizational performance goals and personal learning and growth goals for career advancement. Most businesses use Oracle to gather and sort data for these evaluations. Employees view such assessments as ongoing, yet they are done periodically and rated annually.

*"Quarterly check ins from peers, supervisors and subordinates. Three peers are selected by the ratees themselves as part of transparency in the performance improvement plan" --Key informant\_3*

*"360 Degree feedback taken quarterly, a deep correction conversation semiannually and ratings provided on a yearly basis. Results released but reviewers are kept secret" --Key informant\_4*

There is disagreement on the openness of raters in firms that use 360-degree appraisal methods. To eliminate conflicts or bad faith among employees, an organization keeps peer reviews confidential, and managers are appointed to select the reviewers for the year. In some organizations, however, the ratees are given the ability to choose who would assess them, and their replies are made public. This is carried out to provide employees a sense of ownership while maintaining the integrity of unbiased viewpoints.

*"Forms filled by the employees themselves which are crosschecked and rated by us and sent to HQs for feedback and suggestions on a yearly basis" --Key informant\_5*

In contrast to the aforementioned method, other organizations use PA forms that are simpler nevertheless followed in organizations with stringent international headquarters goals and emphasis on staff goal attainment. These forms are completed by employees or supervisors and sent to management for performance evaluation. HR managers indicated that such methods make employees view assessment as a duty and increase administrative stress to HR professionals to force them to perform them.

## Discussion

This study examined how performance appraisals affect employee motivation in Nepalese

non-governmental organizations. The sample size was 300, and 208 responded. The survey included firm assistants and managers with more than a year of experience. Maslow's theory of wants—basic necessities, safety, esteem, love, and self-actualization—drives Nepalese INGO workers, according to the study. Non-governmental personnel are moderately motivated. This research reveals that employees have their own expectations or aims, while companies have their own goals, and motivation is related to employee expectations.

The finding of present study emphasized on a comprehensive PAS that helps the organization provide advice and support for employees, fosters supervisor-subordinate contact, identifies performance gaps, and helps build development plans. The study findings support Hauwaert et al. (2022) demonstrate how formalization improves managerial effectiveness. Confirm autonomous work motivation influences performance management and performance assessment systems. This finding was similar to the findings of Rijal (2014), who discovered that employees of non-governmental organizations in Nepal have a relatively higher level of motivation, which can be attributed to international affiliations and the opportunity to work with people from various backgrounds and ideologies from around the world.

The study found that, if effective, a PAS can help the company and its workers accomplish long-term goals. This study shows that employee ownership and willing engagement are the most crucial elements of a PAS. PAS should make employees feel that they can progress and reach new career heights. Similarly, Campos et al. (2010) stated that the performance appraisal systems of NGOs in developing nations, with a focus on Brazil, are more successful and consequential than other contemporary service sector organizations. This assumption is based on the presence of more regulated and impartial international procedures established in these organizations that are not accessible in domestic organizations.

The findings of this study were identical in terms of the effectiveness of the performance rating system as the state in Campos et al. (2010). The respondents were generally satisfied with all aspects of the performance appraisal system's effectiveness, with the conclusion that the inclusion of globally standardized guidelines with localization based on employee needs, as well as employee awareness of the procedures, makes the appraisal much more effective. The study found that reflecting components of the performance appraisal system; namely, performance appraisal purpose, performance appraisal standard, feedback on performance appraisal, reliability of rating, and rater assurance, were correlated with employee motivation. Additionally, PA Purpose, Reliability, or Ratings and Rater Assurance all predicted potential for employee motivation as well. The study found that the performance appraisal system leads to improvement in intrinsic rewards and feelings of achievement. Improvement in motivation can be observed. According to Pandey's (2020) research, objective alignment, right appraisal process, effective performance, promoting communication, and employee satisfaction with performance appraisal all have a positive and high impactful link. The significant connection had reaffirmed the findings of Dierdorff and Surface (2007) and Ellinger (2014), Barbieri et al. (2023), Dangol (2021), Buluto and Markos (2017) and Megira (2017) that the development

of a well-designed performance appraisal system has a chance to improve the motivation of employees towards work. This study supports the emphasized explanation of Lee (2017), that Ensure the success of PHRM, public organizations should try their best to improve the fairness and accuracy of performance appraisal.

Pradhan (2020) argued that performance appraisal systems had a strong impact on organizational performance in terms of commitment and motivation in the Nepalese business sector. Present study confirmed the finding of performance appraisal systems and motivation in non-governmental making organizations in Nepal. These results can be observed as an affirmation of a study by Schepers et al. (2005) stating that employees of non-governmental organizations are driven by the same values as employees in profit-making organizations. Aydin and Tiryaki (2018) found using SEM that performance assessment criteria/standards and performance appraisal feedback influenced employee motivation in Turkey. Present study suggests that performance appraisal criteria and feedback do not motivate employees. This may be related to the country-specific and cultural context and how Turkish and Nepalese employees perceive feedback. Turkish companies may encourage good feedback.

Nevertheless, the findings in the present study indicated that continuous feedback could cause displeasure in employees due to our societal context, with the emergence of feelings of business and bad faith among peers. This is further supported by Bulto and Markos' (2017) study in Ethiopia, which found continuous feedback could cause demotivation in employees, which leads to the conclusion that this may be an issue in developing countries. Likewise, the study of Megira (2017) indicated that a trained appraiser and the fairness of the appraisal tool have considerable influence on employee motivation, which is in accordance with the present study. However, Megira (2017) found that employee participation, even though positively related, had no significant impact on the motivation of employees. The current study did not include employee participation as one of the dimensions in the model. However, there was a consensus in the qualitative narration that employee participation is one of the most important factors in an effective performance appraisal system and has an impact on employee motivation. The difference may be observed owing to the depth of employee participation throughout the performance appraisal process. A study in Ethiopia viewed employee participation as staff taking part in the goal setting and form filling procedures as part of their regular job. Whereas this research characterized employee participation as a sense of ownership in the employees, they have a role in making the assessment process successful, and it gives forth the best outcomes to enhance their performance.

This study supports the findings of Mehta (2014) that, practically, employees are motivated by the rewards they receive, and if the rewards are satisfying, then the appraisal only becomes additional work that the employees perform and has minimal effect on motivating them. Even though employees of INGOs in Nepal are well rewarded and have the opportunity for advancements, the findings showed that an effective performance appraisal system could play an important role in the improvement of employee motivation. The study found that employees

would become motivated by assessment if they saw its benefits. This study replicates Chaponda (2014) using comparable demographic data in overlapping organizations. In Nairobi-based INGOs, Chaponda (2014) found that performance reviews motivate employees if they are purposeful and fair. This shows that transnational organizations share perceptions with employees, possibly due to orientation and development procedures.

### **Conclusion and Recommendations**

At INGOs, performance assessment systems motivate personnel. This can be mentioned that the performance appraisal system can be returned to each employee so that the employee is aware of what has been done has been documented and assessed by the authorities so that the employee can feel motivated and become more enthusiastic about their work. An effective evaluation system that stresses engagement and goal setting is one component that can help individuals and organizations reach their goals. In order to acquire the appropriate motivated attitude and behaviors to achieve organizational goals in the long run, organizations should place a primary focus on the reactions and levels of satisfaction that employees have with regard to performance evaluation systems.

Non-governmental organizations as a sector are relevant for study owing to their function and relevance in the Nepalese social structure. These organizations strive to produce social upliftment in regions where government organizations may be deficient or require help to access and organize resources. Because of the nature of non-profit organizations and the socio-economic scenario of Nepal, these organizations are around. Hence, being organizations of significance in the context of developing nations like Nepal gives useful information to evaluate the attitudes of employees in non-profit organizations about their forms and elements of performing their tasks. It can be concluded that employees have a favorable perspective towards the effectiveness of the appraisal system followed in their organization and also that the employees have a decent level of motivation towards employment.

Similarly, in international non-governmental organizations, the assessment tools are created as per organizational objectives, which connect globally to local activities in the organization, making them purposeful and connected with the goals established for the individual workers as well. This synergy implies that employees consider the PAS meaningful for the tasks they conduct and maybe a good indicator of accomplishment and personal growth. This might explain why the research indicated a strong influence of purposive performance appraisal on employee motivation.

Therefore, in developing a performance appraisal system in an organization, the indicators must fit with the organizational as well as individual objectives. The organization must assure its personnel that the performance appraisal ratings appropriately evaluate their strengths and flaws and guide them towards improving their performance. Transparency of raters and feedback is necessary to guarantee the impression of unbiasedness in the appraisal and offer workers trust that the appraisal generates concrete outcomes. However, transparency of raters can sometimes cause conflict situations in an organization which has to be minimized by creating awareness

in employees regarding the importance of appraisal and also training supervisors to smoothly articulate the results of the appraisal in a way that the employee is not offended. Finally, the performance appraisal system has to be implemented in an overall performance management system of the organization that continually functions to monitor employee performance not only in terms of goal achievement but also in terms of learning and career progression.

The findings of the study recommend that organizations operating in all sectors should have a performance appraisal system that works towards target attainment as well as competency development in personnel. This would help the company in succession planning and the personnel to lay out their career objectives and vision for professional life. The study further indicates that contemporary organizations should be more focused on performance management of workers, which comprises performance planning, coaching evaluation, feedback and incentive system. This might generate significant outcomes for the general grooming of personnel in the firm.

Organizations should put a major focus on how to establish an atmosphere where workers do not consider performance appraisal as a job or extra work; they need to undertake it according to company policy. The conclusions of this research suggest HR managers across non-profit organizations establish strategies and policies to generate improved employees' attitudes toward the performance appraisal system. Lacking effectiveness in the performance appraisal system, it will be difficult to anticipate better-motivated workers either intrinsically or extrinsically; rather, they might be demotivated until adjustments must be made in the system.

All in all, non-profit organizations that operate via international supervision should concentrate on developing goal setting techniques based on ground realities at local levels and country offices and then include them in terms of a global vision of the organization. The assessment system should therefore be connected with the local level objectives and eventually to the overarching vision, which would offer the workers a feeling of participation in the complete business. The performance evaluation criteria should be established at an acceptable level, and employees should be aware of what is expected from them. Feedback to employees should be conveyed correctly in a manner that the employees take the comments favorably. Finally, a culture of accurate evaluations and impartial raters should be developed to increase trust in workers about the findings of the assessment.



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**Annexure***Cross Loading of Items*

|       | <b>EM</b> | <b>PAF</b> | <b>PAP</b> | <b>PASt</b> | <b>RA</b> | <b>RR</b> |
|-------|-----------|------------|------------|-------------|-----------|-----------|
| EM1   | 0.722     | 0.39       | 0.374      | 0.372       | 0.475     | 0.511     |
| EM10  | 0.813     | 0.519      | 0.559      | 0.485       | 0.587     | 0.559     |
| EM2   | 0.64      | 0.312      | 0.306      | 0.314       | 0.417     | 0.452     |
| EM3   | 0.601     | 0.423      | 0.422      | 0.403       | 0.454     | 0.424     |
| EM4   | 0.697     | 0.531      | 0.366      | 0.467       | 0.554     | 0.516     |
| EM5   | 0.706     | 0.514      | 0.457      | 0.511       | 0.498     | 0.46      |
| EM6   | 0.641     | 0.379      | 0.404      | 0.378       | 0.399     | 0.402     |
| EM8   | 0.765     | 0.46       | 0.525      | 0.518       | 0.504     | 0.517     |
| EM9   | 0.782     | 0.461      | 0.523      | 0.449       | 0.496     | 0.505     |
| PAF1  | 0.517     | 0.757      | 0.476      | 0.556       | 0.415     | 0.521     |
| PAF2  | 0.465     | 0.734      | 0.47       | 0.489       | 0.359     | 0.452     |
| PAF3  | 0.397     | 0.664      | 0.343      | 0.383       | 0.312     | 0.444     |
| PAF4  | 0.371     | 0.703      | 0.452      | 0.454       | 0.403     | 0.463     |
| PAF5  | 0.483     | 0.72       | 0.455      | 0.521       | 0.476     | 0.536     |
| PAP1  | 0.561     | 0.484      | 0.816      | 0.437       | 0.481     | 0.465     |
| PAP2  | 0.418     | 0.356      | 0.739      | 0.386       | 0.391     | 0.413     |
| PAP3  | 0.501     | 0.482      | 0.763      | 0.424       | 0.42      | 0.402     |
| PAP4  | 0.439     | 0.504      | 0.753      | 0.464       | 0.358     | 0.443     |
| PAP5  | 0.437     | 0.524      | 0.747      | 0.49        | 0.333     | 0.433     |
| PASt1 | 0.418     | 0.471      | 0.45       | 0.737       | 0.466     | 0.422     |
| PASt2 | 0.414     | 0.43       | 0.385      | 0.73        | 0.441     | 0.431     |
| PASt3 | 0.469     | 0.5        | 0.41       | 0.747       | 0.373     | 0.51      |
| PASt4 | 0.497     | 0.509      | 0.419      | 0.779       | 0.492     | 0.587     |
| PASt5 | 0.486     | 0.601      | 0.473      | 0.733       | 0.435     | 0.542     |
| RA1   | 0.527     | 0.431      | 0.449      | 0.499       | 0.785     | 0.507     |
| RA2   | 0.547     | 0.433      | 0.426      | 0.477       | 0.805     | 0.484     |
| RA3   | 0.562     | 0.44       | 0.397      | 0.501       | 0.851     | 0.543     |
| RA4   | 0.613     | 0.492      | 0.438      | 0.458       | 0.821     | 0.531     |
| RR1   | 0.495     | 0.535      | 0.448      | 0.451       | 0.425     | 0.749     |
| RR2   | 0.468     | 0.486      | 0.421      | 0.483       | 0.444     | 0.698     |
| RR3   | 0.534     | 0.475      | 0.386      | 0.484       | 0.492     | 0.768     |
| RR4   | 0.574     | 0.565      | 0.464      | 0.624       | 0.558     | 0.825     |

# The Influence of Traditional Exports on Economic Growth in Tanzania: The VECM Analysis

James Daniel Chindengwike

St. John's University of Tanzania, Dodoma, Tanzania

## Abstract

**Background:** Tanzania, like other developing countries, sees commerce as one of the most important tools for the country's growth and progress. Given that export is one of Tanzania's primary economic sectors, several empirical studies on the relationship between international commerce and the country's economic growth have been conducted.

**Objectives:** The study looked primarily at the influence of traditional exports as the primary independent variable. Furthermore, the Natural Logarithm of Terms of Trade (TOT), the currency rate, and Foreign Direct Investment (FDI) are control variables, whereas GDP is the dependent variable.

**Methods:** The research employed time-series data from the World Bank, the Bank of Tanzania (BOT), and the United Nations Conference on Trade and Development (UNCTAD) that spans 31 years from 1991 to 2021 based on the Vector Error Correlation Model (VECM).

**Results:** The findings revealed a link between Tanzania's economic growth and traditional exports, trade terms and currency rate. Furthermore, studies have found a negative and substantial association between exchange rates and economic growth in both the short and long run.

**Conclusion:** The findings indicated that trade terms and traditional exports had a favorable and considerable influence on economic growth in the short run. In the long run, traditional exports and FDI had a negative and positive influence on economic growth, but trade terms had a considerable and positive effect. As a result, the study argues that Tanzania's government should prioritize export promotion measures above traditional exports to accelerate Tanzania's economic growth. The government should prioritize the establishment of factories that will add value to traditional export items.

**Keywords:** Developing countries, economic growth, Tanzania, Traditional Exports

**JEL Classification:** F43, N17, N70, O47

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## Correspondence:

James Daniel Chindengwike  
chindengwikejames@gmail.com

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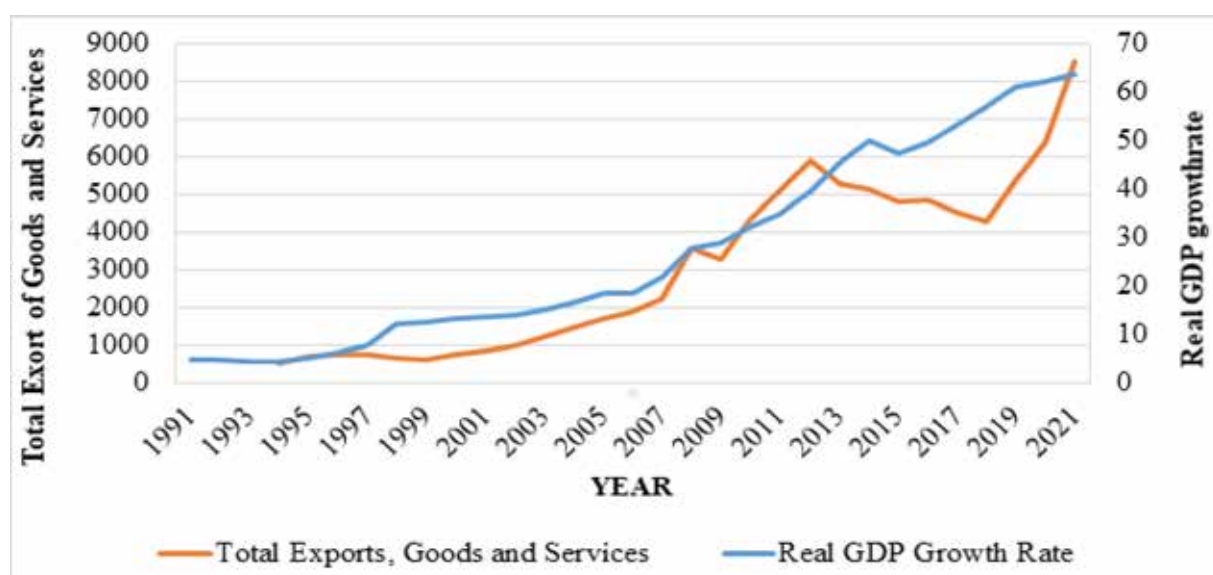
## Introduction

Private domestic investment benefits a country's economy, society, and politics. Different economists are interested in the economic causes of country growth and wealth achievement at various levels. International commerce, among other things, has become a hot topic of discussion when it comes to economic growth drivers since it adds to GDP growth, exchange rate, current deficit correction, and Foreign Direct Investment (Dewi and Hung, 2019). Tanzania, for example, is a free market participant in overseas trade, accounting for 42% of GDP in 2021 (MoA, 2021). According to the most recent available country statistics from 2019, importers in Vietnam (2.1% of the global total), the Netherlands (2.1%), the United Arab Emirates (2.3%), Rwanda (2.7%), Uganda (3.1%), China (3.8%), the Democratic Republic of the Congo (3.8%), Kenya (5.8%), Belgium (6.3%), Switzerland (6.8%), India (19.2%), and South Africa purchased 77.4% of Tanzanian exports (UNCTAD, 2021). Tanzania's total export in 2020 is USD 1.7 billion (32.6% of total export of goods and services), with precious metals accounting for USD 1.7 billion (32.6% of total export of goods and services), copper accounting for USD 476.3 million (9.1%), ore, slag, and ash accounting for USD 416.9 million (8%), fruits and nuts accounting for USD 416.5 million (8%), and oil seeds accounting for USD 262.8 million (5%) (Nguto, 2020).

Tanzania initiated a variety of trade-related efforts, including trade liberalization in 1986, the establishment of the Tanzania Exporters Association (TANEXA), and the drafting of trade policy in 2003, among others (MoIT, 2013). Furthermore, Tanzania has signed a number of trade union agreements with other nations in order to boost its export performance, including the East African Community (EAC) in 1999 and the Southern Development Community (SADC) in 2003 (Nguto, 2020). Tanzania also benefits from trade agreements such as the African Growth and Opportunity Act (AGOA) of the United States and the European Union's Everything but Arms (EBA). These initiatives give the country duty-free access to the US and EU markets (Nguto, 2020). The goal is to reduce trade imbalances and alleviate economic issues. The most important characteristics of trade imbalance are worth of the country's export falls below the worth of its imports, the country will use more money to purchase imports rather than export goods (Mputu, 2016). In this circumstance, Terms of Trade are predictable to have a great effect on the rise of exports. Despite various programs, the contribution of export on the economic growth in Tanzania has been volatile as shown below in the Figure 1.

**Figure 1**

*Tanzania Goods and Service Exports Trend from 1991 to 2021*





Traditional export contributes significantly to market expansion, income generation, competition facilitation, job creation, and information exchange. Even though foreign commerce is critical to economic progress, the market for traditional items is volatile in terms of volume and price, affecting Tanzania's economic growth (Tripathi et al., 2021). Tanzania has implemented several trade and fiscal policy reforms to enhance exports since independence (Nguto, 2020). However, the value of the export share has remained low throughout time. Tanzania has never enjoyed a trade surplus since the 1980s, as evidenced by the fact that (Nguto, 2020). For example, Tanzania's trade imbalance expanded to USD 1,784.7 million in 2021 from USD 1140.7 million in 2020, with total exports being USD 6,751.1 million and imports totaling USD 9,678.3 million.

However, while examining the influence of exports on economic growth, they did not distinguish the effect of traditional as the independent variable. Urriola and Baral (2018) discovered, using a VAR model, that traditional agricultural exports had a favorable but small influence on economic growth in the short run. In explaining the variance in economic growth, the study disregarded other key variables such as terms of trade and currency rate. As a result, it is critical to include the VECM approach in this study, which adjusts in both the short and long run using the Error Correction Term (ECT), which is a crucial requirement for long-run equilibrium (Kagoma, 2019). Therefore, this research aims to fill the knowledge gap that exists in the literature by investigating the impact of traditional export to economic growth in developing countries specifically Tanzania.

### **Review of Literature**

Heckscher-Ohlin Trade Theory; Absolute advantage and comparative advantage theories, as well as the Heckscher-Ohlin Samuelson model, are utilized in international trade and growth literature. The Heckscher-Ohlin-Samuelson model, which is an extension of the comparative advantage idea proposed by Eli Heckscher (1991) and Bertil Ohlin in 1933, was refined in 1948 by Paul Samuelson (Mkubwa, 2019). Countries have a varied variety of factor endowments, according to these economists. As a result, worldwide inequalities in factor endowments (labor/capital) describe the foundation for specialization and comparative cost gaps. Prebisch-singer theory; classical economists such as Thomas Malthus, David Ricardo, and others anticipated that when land and other natural resources became scarce, the terms of trade for conventional products would rise, forcing their prices up.

According to Andenew and Woldeyohannes (2021) used econometric approaches to evaluate the impact of international trade performance on Ethiopian economic growth. The study used yearly time series data from 1989/90 to 2018/19 to examine the pattern of export agricultural goods and economic growth in Ethiopia. The autoregressive distributed lag (ARDL) model was used to regress the following variables: export value, gross capital creation, gross labor force, real exchange rate, and imports. The Granger causality approach was used to assess the direction of causation between export and economic growth. Long-term data suggest that agriculture export has a positive and significant effect on economic growth. Mlambo et al. (2019) studied the influence of processed and unprocessed export items on South Africa's GDP from 1896 to 2012.

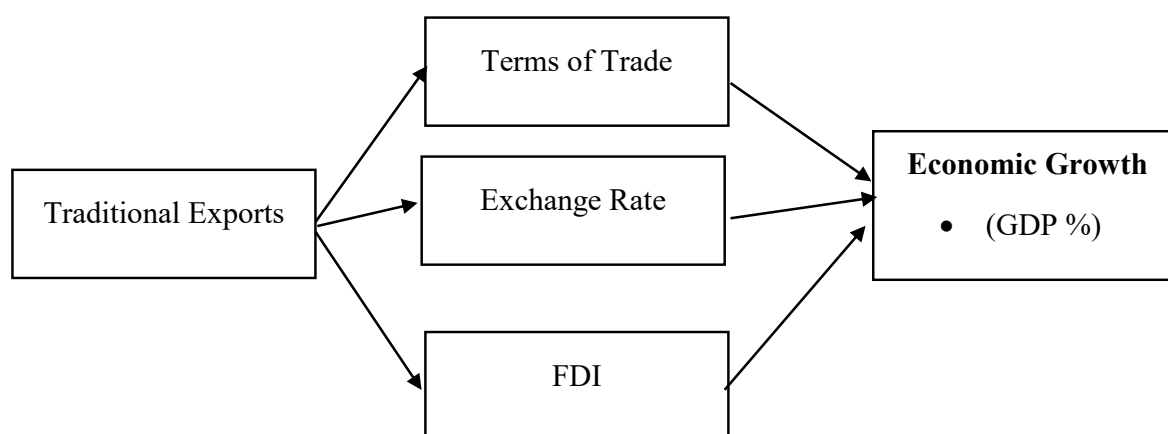
According to Omanus and Utonga (2019) examined the link between exports and Tanzania's economic development using time series data from 1980 to 2015. Exports to other countries are assessed as a percentage change in products and services, whereas economic growth is recorded as a percentage change in GDP. As part of the econometrics investigation, the existence of unit root, cointegration, and causality were all examined. The Johansen cointegration and granger causality tests were used to evaluate the long-run relationship between variables. The results of co-integration demonstrate that there is only one co-integrating equation. Economic growth

and exports were found to be linked using the causality test. The regression results suggest that there is a long-term relationship between Tanzanian exports and economic development (Okyere & Mensah, 2020).

Previous studies similar to this study did not capture the terms of trade, exchange rate and FDI, most of studies which have already been conducted. In explaining the variance in economic growth, the study disregarded other key variables such as terms of trade and currency rate. As a result, it is critical to include the VECM approach in this study, which adjusts in both the short and long run using the Error Correction Term (ECT), which is a crucial requirement for long-run equilibrium (Kagoma, 2019).

**Figure 2**

*Conceptual Framework*



*Source: Constructed from Kagoma, 2019.*

### Material and Methods

The annual time series research approach was employed because it permits statistical conclusions to be applied when analyzing the relationship between two or more variables (Mohamed, 2020). The research looked at annual repeated data from the same unit of analysis because they provide insight into the sources of trends or systematic patterns throughout time. The key factors of production in this model are capital and labor forces (Edeme et al., 2016), as specified in the function below.

$$Y_t = f(L_t, K_t) \dots\dots\dots (1)$$

*Where,  $L_t$  = Terms of Trade and  $K_t$  = Exchange Rate*

To achieve the major goals of how traditional export and total export effect Tanzania's economic growth. It was important to integrate the study's goal variable and replace for  $L_t$ ,  $K_t$ . The function presented as follows:

$$Y_t = f(TX_t, TOT_t, EX_t, FDI_t) \dots\dots\dots (2)$$

However, the model with natural logarithm to evaluates the effect analysis of traditional export on the economic growths in Tanzania is presented as follows:

$$\log GDP_t = \beta_0 + \beta_1 \log TX_t + \beta_1 \log TOT_t + \beta_2 \log EX_t + \beta_3 \log FDI_t + \varepsilon_t \dots\dots\dots (3)$$

$$\log GDP_t = \beta_0 + \beta_1 \log TOT_t + \beta_2 \log EX_t + \varepsilon_t \dots\dots\dots (4)$$

Where,  $GDP_t$  = natural logarithm of Gross Domestic Product,  $TX$  = natural logarithm of traditional export,  $TOT$  = natural logarithm of Terms of trade,  $E\beta_0$  = natural logarithm of real exchange rate,  $FDI$  = natural logarithm of foreign direct investment and  $\beta_0$  to  $\beta_5$  = coefficients.

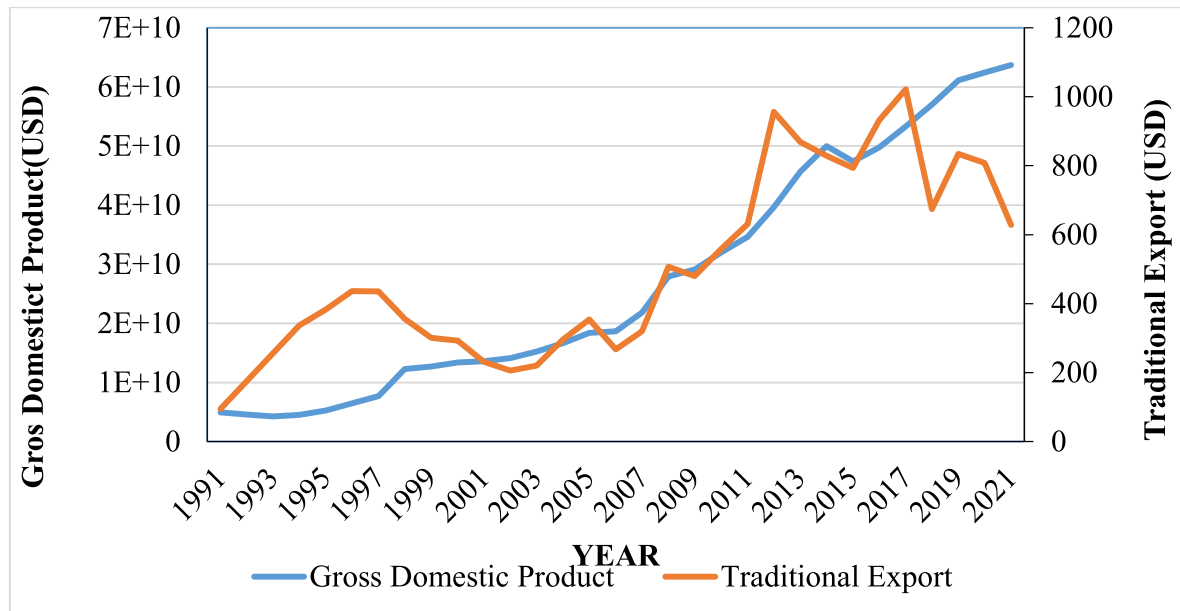
## Results and Discussion

### Traditional Exports (TX)

Figure 4 shows that traditional exports from 1991 to 2021 fluctuated with an upward trend. Figure 3 provides a summary of economic growth and traditional export trends from the year 1991 to 2021.

**Figure 3**

*Trend of the Unit of GDP and Total Export*



Source: BOT, 2022.

Figure 3 shows that the traditional exports (TX) reached maximum value of USD 1021.8 million in 2021 and minimum value is USD 94.91 million in 1991 and make the difference of USD 926.9 million from the maximum value to minimum value. In 1991 the value was USD 94.91 million, then in 1992 rose to USD 175 million. An upward trend with significant implication to country economic growth observed from 1993, 1994, 1995 and 1996 were the total value of traditional stand for USD 256.19 million, USD 336.83 million, USD 383.55 million, and USD 436.31 million. The consistent increase in the total value from 1991 to 1997 was associated with several reasons, accelerate reforms based on the tariffs was among of the reasons which act as catalyst for investment resulting to the increase of the exports. In the next years the decline of traditional exports was associated with a decline in production levels, poor strategies on export sector, resulted to downward trend of traditional exports from a total value of USD 435.34 million in 1997 to USD 220 million in 2003 (BOT, 2002).

### Correlation Analysis

On this study correlation Analysis performed by Pairwise matrix, the correlation coefficient of the test reveal how strongly the chosen independent factors affects the outcome variable by explaining the relationship that persists between independent variable and dependent variable (Dangal & Gajurel, 2021). The purpose of the test was to determine whether the variable was perfectly collinear before running the test. A low correlation indicates that the variables are hardly related, while a high correlation means that two or more variables are highly related. The results of correlation matrix for all variables are presented in Table 1.

**Table 1**  
*Correlation Matrix*

| Variable | GDP    | TX     | TOT    | EX     |
|----------|--------|--------|--------|--------|
| GDP      | 1.000  |        |        |        |
| TX       | 0.795  | 1.000  |        |        |
|          | 0.000* |        |        |        |
|          | 0.000* | 0.000* |        |        |
|          | 0.000* | 0.000* |        |        |
| TOT      | 0.852  | 0.795  | 1.000  |        |
|          | 0.000* | 0.000* |        |        |
| EX       | -0.531 | -0.443 | -0.364 | 1.000  |
|          | 0.002* | 0.014* | 0.478  |        |
| FDI      | 0.134  | -0.182 | -0.202 | -0.016 |
|          | 0.479  | 0.336  | 0.285  | 0.933  |

*Source: Researcher Estimation Results, 2022.*

#### Variance Inflation Factor Test (VIF)

The study employed the Variance Inflation Factor (VIF) as a correlation test to confirm. The VIF is proposed as a good indicator for multicollinearity because it gives the degree of collinearity of the predictors. According to Kagoma (2019) to the problem with collinearity to the independents variable it leads to the underestimation of the statistical significance of a given variable. The Rule of thumb of the VIF value suggested that, the value less than 10 has been justified as an indicator of the absence of multicollinearity among the independent.

**Table 2**  
*Variance Inflation Factor Test*

| Variable | VIF  | 1/VIF |
|----------|------|-------|
| EX       | 1.26 | 0.794 |
| TOT      | 1.17 | 0.853 |
| TX       | 1.16 | 0.865 |
| FDI      | 1.04 | 0.946 |

*Source: Researcher Estimation Results, 2022.*

#### Unit Root Test

Test of unit root is an important concept in analysis process as it provides useful analytical tools and act as pre statistical tests. Stationarity means that the statistical properties of time series do not change over time (Mohamed, 2020). Augmented dickey fuller (ADF) and the Phillips - Perron (PP) tests were used for each variable in levels and differences to check the presence of the unit root. Unit root test as important test in time series analysis since it helps to avoiding spurious regression by applying the appropriate model. The best results were obtained from the ADF test and PP test and used to select the appropriate model (VECM) to be used. Table 3 shows the unit test for each variable.

**Table 3**  
*Stationarity Test*

| ADF TEST |                 |                |                  |                |                      |
|----------|-----------------|----------------|------------------|----------------|----------------------|
| Variable | Level           |                | First Difference |                | Order of Integration |
|          | Test Statistics | Critical Value | Test Statistics  | Critical Value |                      |
| GDP      | -1.434          | -2.989         | -3.489*          | -2.992         | I(1)                 |
| TX       | -0.832          | -2.989         | -3.853*          | -2.992         | I(1)                 |
| TOT      | 0.565           | -2.989         | -4.669**         | -2.992         | I(1)                 |
| EX       | -2.317          | -2.989         | -7.590*          | -2.992         | I(1)                 |
| FDI      | -1.714          | -2.989         | -6.179*          | -2.992         | I(1)                 |

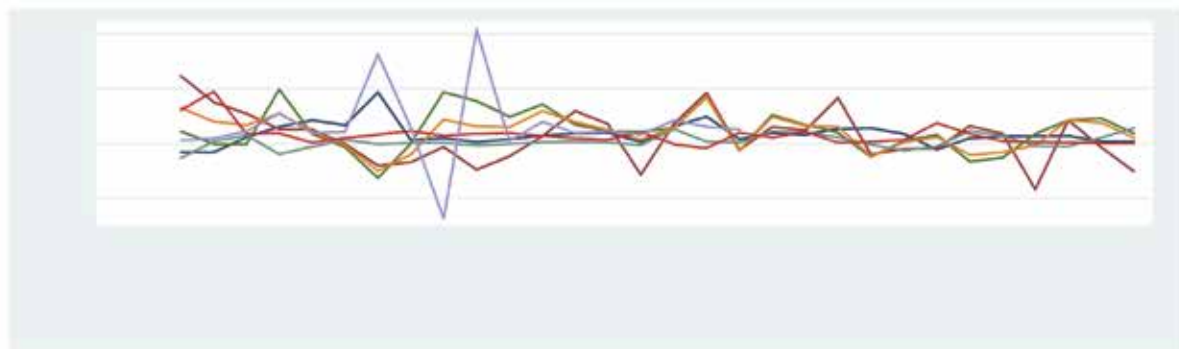
| The PP TEST |                 |                |                  |                |                      |
|-------------|-----------------|----------------|------------------|----------------|----------------------|
| Variable    | Level           |                | First Difference |                | Order Of Integration |
|             | Test Statistics | Critical Value | Test Statistics  | Critical Value |                      |
| GDP         | -0.832          | -2.986         | -4.116*          | -2.989         | I(1)                 |
| TX          | -2.692          | -2.986         | -4.625*          | -2.989         | I(1)                 |
| TOT         | 1.227           | -2.986         | -4.667*          | -2.989         | I(1)                 |
| EX          | -3.979          | -2.986         | -3.729*          | -2.989         | I(1)                 |
| FDI         | -1.673          | -2.986         | -8.409*          | -2.989         | I(1)                 |

Source: Researcher Estimation Results, 2022.

Results in Table 3 revealed that all variables used in the study were non-stationary at their levels, as confirmed by their test statistics which are greater than their corresponding critical values at 5% levels of significance. However, after taking their first differences as way common way to transforming a non-stationarity series to be stationary, all variables became stationary. Results supported by their test statistics which are now less than their corresponding critical values at 5% levels of significance. Therefore, the null hypothesis of the unit root was rejected at 0.05 levels of significance; suggesting that all variables of interest are integrated of order one ( $I(1)$ ) which means is stationary after first difference. Figure 4 below indicates that all variables are a stationary logarithm of FDI.

**Figure 4**

*Time Series Plot for Smoothed Data*



### Normality Test

The test for normality was performed to ensure that residuals follow a normal distribution. The common used normality test by different economist (Machumu, 2020; Kalaitzi & Chamberlain, 2020; Yusuf & Omar, 2019; Mputu, 2016) known as Jarque-Bera test. The data are said to be normally distributed if their overall probability is greater than 0.05. The hypothesis of the test is presented as; : normally distributed; : not normally distributed. Table 4 below presents the results of the test.

**Table 4**

*Jarque- Bera Test*

| Equation | Chi2  | Df | Pro>Chi2 |
|----------|-------|----|----------|
| GDP      | 3.133 | 2  | 0.209    |
| TX       | 1.038 | 2  | 0.595    |
| TOT      | 4.149 | 2  | 0.126    |
| EX       | 1.060 | 2  | 0.589    |
| FDI      | 0.167 | 2  | 0.920    |

*Source: Researcher Estimation Results, 2022.*

Results in Table 4 show results from Jarque-Bera test. From the table the overall probability values and probability value for each variable is greater than 0.05. The overall probability value is 0.58690 which is greater than 0.05 (5%) critical value, hence the null hypothesis was accepted that the residuals are normally distributed. The data used for analysis followed normal distribution which means that the number of shocks that occurred throughout the sample period did not impact the findings. Figure 5 shows normal distribution of the data used in the study.

**Figure 5**

*Normal Distribution*

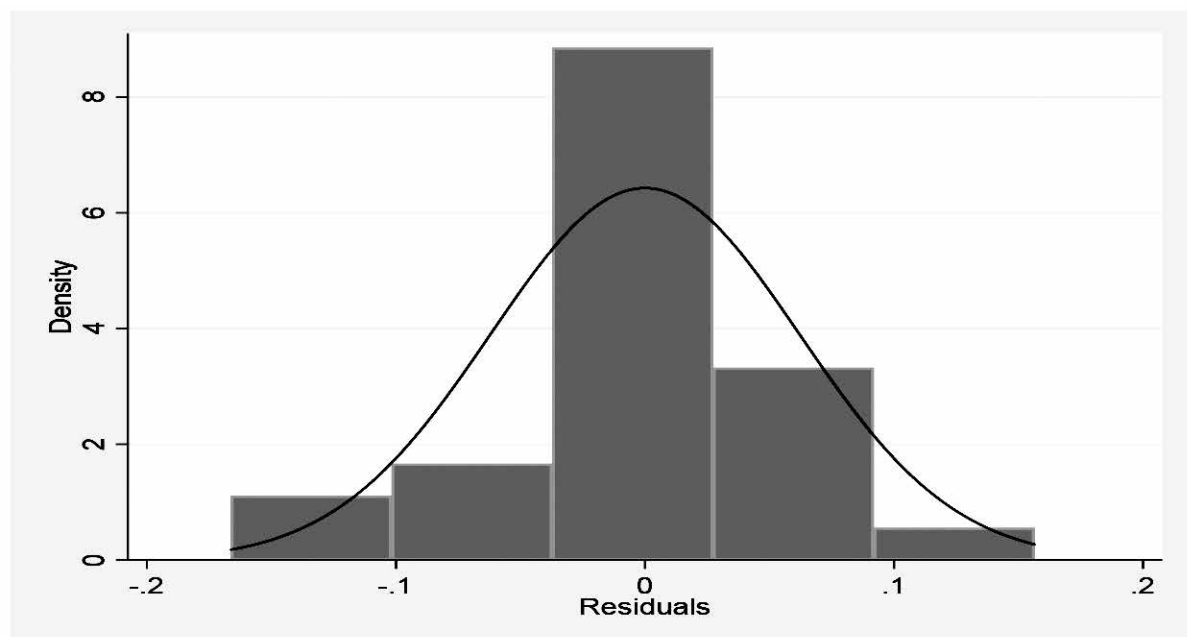


Figure 5 shows histogram is bell-shaped which implies the residual are normally distributed.



### Heteroscedasticity Test

The model was subjected to heteroscedasticity test using Cameron and Trivedi's decomposition of LM-test. The test considers the variation of mean and variance to endogenous variable over time (Mohamed, 2020). Table 5 below shows that the model is free with heteroscedasticity since the P-value for heteroscedasticity is greater than 5% of probability.

**Table 4.5**

*Cameron and Trivedi's Decomposition of IM-Test*

| Source             | Ch2    | df | P-value |
|--------------------|--------|----|---------|
| Heteroscedasticity | 28.683 | 20 | 0.094   |
| Skewness           | 6.941  | 5  | 0.225   |
| Kurtosis           | 1.280  | 1  | 0.257   |

*Source: Researcher Estimation Results, 2022.*

Results in Table 5 show that, probability value was 0.094, which is greater than 0.05. Hence that, the null hypothesis of homoscedasticity was accepted and conclude the residual of series has a constant variance from 1991 to 2021. Also, residual is normally distributed since p-value for skewness and Kurtosis is greater than 5% probability level.

### Autocorrelation Test

Autocorrelation is the correlation between the error term arising in time series data. Such correlation in the error terms often arises from the correlation of the omitted variables that the error term captures. The study employed Lagrange-multiplier test for autocorrelation in the residuals. Table 6 below shows results of LM test.

**Table 4.6**

*Lagrange-Multiplier Test*

| Lag | Chi2   | Difference | Prob > chi2 |
|-----|--------|------------|-------------|
| 1   | 50.474 | 36         | 0.0553      |
| 2   | 40.926 | 36         | 0.2631      |
| 3   | 35.486 | 36         | 0.4929      |

*Source: Researcher Estimation Results, 2022.*

Table 6 above suggests that the model does not suffer from serial correlation problem for all three lags. The p-value was greater than the 5% level which stand as 0.05529, 0.26312 and 0.49287 for 1, 2 and 3 lag respectively. Hence the null hypothesis of no serial correlation cannot be rejected.

### Lag Length Selection

Lag length selection by information criteria was used to avoid the risk of losing degree of freedom, statistical insignificant of coefficient, multicollinearity and miss specification of errors that occurred during selection of lags (Woldeyohannes, 2021). Akaike Information Criterion (AIC), Hannan and Quinn Information Criterion (HQIC), and Schwarz Bayesian Information Criterion (SBIC) were used to determine the optimal lag lengths. Table 7 shows the lag length criteria results for GDP, traditional exports, terms of trade, exchange rate and Foreign Direct Investment.

**Table 7**

*Lag Length Selection*

| Lag | AIC      | HQIC     | SBIC     |
|-----|----------|----------|----------|
| 0   | -.949    | -.862    | -.664    |
| 1   | -9.867   | -9.257   | -7.869   |
| 2   | -11.086  | -9.951   | -7.375   |
| 3   | -16.917* | -15.259* | -14.493* |

*Source: Researcher Estimation Results, 2022.*

Results in Table 7 reveal that, the three optimal lags are the most appropriate lag to consider during analysis, because all three-selection criterion have minimum values of AIC, HQIC SBIC. From the rule of thumb "the lower the value the better the model". Hence lag 3 is preferred for this selection due to the fact that the smallest value of all three criteria lies at three lags.

### Cointegration Test

All variables were thoroughly established and demonstrated to be integrated in same order I (1). This provide the rationale for conducting a cointegration test to determine whether the variables GDP, traditional exports (TX), terms of trade (TOT), exchange rate (EX) and Foreign Direct Investment (FDI) are abounded together in long-term or otherwise. The Johansen co-integration test was used in this analysis because it has many desirable statistical qualities and has been proven to be especially helpful in the number of comparatives investigations (Nguto, 2020; Rwenyagila, 2013). The Johansen cointegration test identifies all cointegration equations relevant to the variable employed in the investigation through comparing the trace statistics or max statistics. Rejected condition of the null hypothesis of no cointegration and acceptance of alternative hypothesis of cointegration exist if it is confirmed by test statistics which is greater than critical values. Table 8 below shows the results of trace statistics and Max-Eigen statistics.

**Table 8**

*Trace Statistics and Max-Eigen Statistics*

| Maximum rank | Trace Statistics |                | Max-Eigen Statistics |                |
|--------------|------------------|----------------|----------------------|----------------|
|              | Trace statistic  | Critical value | Max-Statistics       | Critical Value |
| r=0          | 275.908          | 94.152         | 93.476               | 39.372         |
| r=1          | 182.432          | 68.521         | 80.753               | 33.460         |
| r=2          | 101.679          | 47.213         | 41.985               | 27.075         |
| r=3          | 59.694           | 29.684         | 38.899               | 20.971         |
| r=4          | 20.266           | 15.410         | 20.266               | 14.073         |
| r=5          | 0.529*           | 3.762          | 0.529*               | 3.764          |

*Source: Researcher Estimation Results, 2022.*

Results in Table 8 showed that the null hypothesis of no co-integration is rejected at r=5. Findings revealed that there were at least five significant integration equations based on trace statistics, the conclusion which is supported by Max-Eigen. The results show the variables which were used in this study have the long-run association. Consequently, it is crucial to recognize the equations in concern and conduct a causality test by granger causality test.

### Vector Error Correction Model (VECM)

In order to compare traditional export's effects on economic growth, the study used VECM approach. According to findings of the cointegration test, a maximum of five cointegration equations were found. Cointegration meets the VECM's condition, hence it is obvious that the model is ideal for this inquiry because it can be adjusted for both long and short-run effects. Table 9 shows the short run results.

**Table 9**

*Short-Run Results*

| Variable       | Coefficient | Std. Err | z      | P-value  |
|----------------|-------------|----------|--------|----------|
| R <sup>2</sup> | 0.799       |          |        |          |
| ECT            | -0.198      | 0.053    | -3.761 | 0.000*   |
| GDP            |             |          |        |          |
| LD             | -0.625      | 0.339    | -1.840 | 0.066*** |

|      |        |       |        |          |
|------|--------|-------|--------|----------|
| L2D. | 0.475  | 0.303 | -1.564 | 0.118    |
| TX   |        |       |        |          |
| LD   | -0.100 | 0.103 | -0.971 | 0.330    |
| L2D. | 0.158  | 0.129 | -1.230 | 0.019**  |
| TOT  |        |       |        |          |
| LD   | 0.646  | 0.401 | 1.612  | 0.107    |
| L2D. | 0.213  | 0.448 | 0.485  | 0.634    |
| EX   |        |       |        |          |
| LD   | -0.257 | 0.329 | -1.712 | 0.086*** |
| L2D. | -0.002 | 0.373 | -2.320 | 0.020**  |
| FDI  |        |       |        |          |
| LD   | -0.020 | 0.079 | -0.251 | 0.799    |
| L2D. | 0.023  | 0.079 | 0.293  | 0.773    |
| Cons | 0.063  | 0.061 | 1.031  | 0.303    |

Source: Researcher Estimation Results, 2022.

Table 9 showed the error correction terms (ECT) have a negative coefficient (-0.198508) and significance at 1% level. This means that the terms of trade, exchange rate and GDP are moving together in the long run. The ECT terms suggesting that previous years' error is corrected within the current year at a convergence speed of 19.85%. The R-squared value revealed that about 79.9% of the total variations in the dependent variable were explained by changes in the explanatory variables. Table 10 shows the results of Long Run Error Correction model for six variables.

**Table 10**

*Long Run Results*

| Variable | Coefficients | Std. Err | z      | P> Z    |
|----------|--------------|----------|--------|---------|
| GDP      | 1            |          |        |         |
| TX       | -0.141       | 0.165    | -0.863 | 0.392   |
| TOT      | -0.961       | 0.412    | -2.330 | 0.020** |
| EX       | 2.967        | 0.341    | 8.704  | 0.000*  |
| FDI      | -0.323       | 0.144    | -2.241 | 0.025** |

Source: Researcher Estimation Results, 2022.

The results in Table 10 revealed that traditional export had a positive effect and statically insignificant in the long run. The results correspond with the theory of Prebisch (1950) who claimed on the deterioration conditions of trade for traditional products (Fahmy, 2021). The insignificant traditional export to economic growth is contrary to our expectation reflected in the hypothesis. This is because economic growth has a positive relationship with export value since increased production leads to surplus output in an open economy being exhausted on international market. The results in Table 9 further show that the second lag value of traditional export is positive and significant at 5% level. This implies that, traditional exports have a favorable impact on economic growth in the short run. Hence, on average an increase of a percentage in the traditional exports has resulted in an increase in economic growth by 0.1580969 percentage, under ceteris paribus. This result was the same with studies conducted by Urriola and Baral (2018) on the impact of traditional on economic growth of Peru.

### Causality Test

The causal link between traditional export, grand total export, terms of trade, exchange rate,

Foreign Direct Investment and economic growth was examined using the granger causality test. If there was causation effect from one variable to another, the estimates from VAR were used in the study. Variable X is said to have granger-caused variable Y in time series data if the current value of Y is dependent on previous value of X (, ...), so that in that scenario the past value of X likely to aid in predict Y (Odetola & Etumnu, 2013). The results of the granger causality test for all variables are shown in Table 11.

**Table 11***Granger Causality Test*

| Null Hypothesis | Prob > chi2 | Decision  |
|-----------------|-------------|-----------|
| TX GDP          | 0.002       | Causality |
| GDP TX          | 0.000       | Causality |
| TOT GDP         | 0.000       | Causality |
| GDP TOT         | 0.000       | Causality |
| EX GDP          | 0.000       | Causality |
| GDP EX          | 0.008       | Causality |
| FDI GDP         | 0.041       | Causality |
| GDP FDI         | 0.000       | Causality |

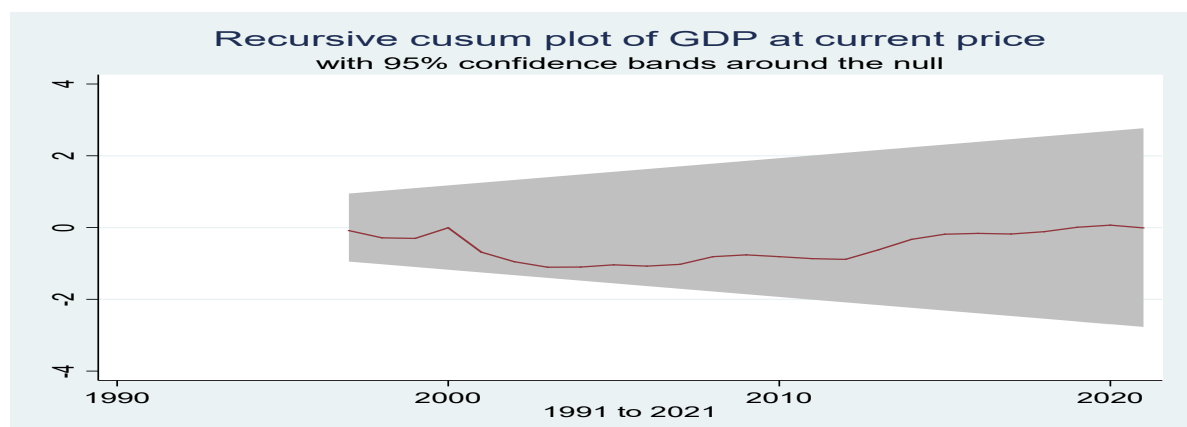
Source: Researcher Estimation Results, 2022.

Results Table 11 showed that traditional export granger cause GDP at 1% significance. Implies that GDP helps to predict the traditional export in Tanzania. On the other side, the test suggests that economic growth granger cause traditional export at 1% level of probability value. The non-traditional export, terms of trade and exchange rate granger cause economic growth 1% significance level. Foreign Direct Investment found statistical significance at 5% level, which means that FDI granger cause economic growth. The same results obtained by Nguto (2020), Shobande (2019), Umar (2022), Eliakim (2020), and Machumu (2020).

### Diagnostic Check

#### Structural Break Test

The study employed cumulative sum square (CUSUM) as the structural break test of the economic growth equation. The guideline of CUSUM testing approach says that if the line of estimated model is within the CUSUM fixed lines, the estimated model will be stable. On the other hand, if the line of estimated model is out of the CUSUM fixed lines, the estimated model is not stable. The figure below shows CUSUM test result (Chindengwike, 2020; Chindengwike, 2021; Chindengwike, 2022 and Chindengwike, 2023).

**Figure 6***CUSUM Test*

Results in Figure 6 the fitted line of the estimated model is in the CUSUM fixed two lines. Therefore, this estimated model is valid and can be used for prediction and planning in future series movement of traditional export, terms of trade and exchange rate.

### Conclusion and Recommendations

According to the findings, the terms of trade have a positive and significant effect on GDP in both the long and short term. As a result, the lag value of conventional exports has a considerable and positive effect on economic growth in the short term but is minor and beneficial in the long run. According to the findings, traditional export has a positive and substantial influence on economic growth in Tanzania in the short term, but a negative and significant effect in the long run. Traditional export is critical to Tanzania's social and economic development since it generates foreign cash and creates jobs. Government subsidies can assist in lessening volume fluctuations. As a result, consistent contribution will be noted. In order for the country to enjoy regular trading conditions, the granger causality test suggested that there is two-way causation between terms of trade and economic growth in Tanzania at 1% percent level. This study revealed that the influence of the exchange rate on economic growth in Tanzania is significance and negative both the in long run and in the short run. Researchers out of the study may increase sample size and use other econometrics approach such as ARDL approach on the non-traditional exports.

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## Safety Management in Public Building Construction: A Case Study of Pokhara Valley

Om Prakash Giri\*, Kamal Paudel\*, Santosh Kumar Shrestha\*\*

\*School of Engineering, Pokhara University, Nepal

\*\*Institute of Engineering, Pulchowk Campus, Kathmandu, Nepal

### Abstract

**Background:** Construction site safety is a major issue in the construction industry all around the world. In a developing country like Nepal, the number of construction industries is growing haphazardly at a high rate but they are not being able to cope with factors associated with construction site safety.

**Objective:** The main objective of the study is to explore the status of safety management in public building construction projects and to suggest measures for improvement.

**Methodology:** To achieve the objective of the study, data were collected from the Engineers and site management personnel through a questionnaire survey. Data were analyzed descriptively by IBM SPSS and presented in tables and diagrams.

**Conclusion:** The identified major safety issues for public building construction sites are lack of regular safety inspection, lack of use of personal protective equipment (PPE), lack of conducting safety training, and a lack of proper safety policy and plan including a lack of an adequate budget for safety management. Increased worker safety awareness and introducing safe working practices through training and induction programs are vital to reducing construction site safety. The outcome of the study will be helpful while formulating a project-based construction site safety policy.

**Keywords:** Construction site safety, safety improvement, safety management

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### Correspondence:

Om Prakash Giri  
omgi5@pu.edu.np

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## Introduction

The construction sector is one of the most dangerous industries in the world (Bhagwat et al., 2022). Construction involves many types of resources like man, material, and machine, and work involves working in difficult working conditions and situations. Therefore, the accident occurs due to various reasons such as carelessness on the job, and improper handling of materials, tools, and machines. The result is loss of property, death, increase in project cost, and delay in construction activities. Due to the special nature of the activities involved and the repetition of many construction activities, construction is a hazardous occupation (Manzoor et al., 2022). The growth of the construction industry is crucial to the economy of the nation. Therefore, one has to be very careful about the situation, and effective safety management on construction sites.

Safety is concerned with no loss of life at the workplace and minimizing injuries to project stakeholders and other common people. It is also concerned with property damage, and loss of time. The number of accidents occurring in each infrastructure construction project is not recorded and given priority in Nepal. Safety engineers along with the workers need to be aware to every construction project is not yet started. Project owners, consultants, and contractors must be responsible for the effective management of construction site safety (Koirala, 2018). Due to the very specific nature of construction projects, frequent operation of heavy equipment such as tower cranes, hoists, concrete pumps, batching plants, engagement of large numbers of workers of various trades, various natures of works in the same construction sites, establishing the safe working environment at sites and avoiding the ill-health of workers has become more challenging (Nadhim et al., 2016). On the other hand, the lack of effective health and safety programs in construction companies, lack of worker awareness towards safety, and inadequate investment in safety programs and measures have created hurdles in establishing a safe working environment.

The high frequency of work-related accidents and fatalities makes the construction process a very risky endeavor. The gathering and analysis of construction site safety is a crucial component of developing measurement and improvement strategies (Awolusi et al., 2018). Construction industries in Nepal have not effectively implemented health and safety measures at construction sites due to a lack of proper organizational policy, adequate resources, and effective management (Acharya, 2015). Construction companies need to analyze risks and take necessary steps for effective management of construction site safety.

The study has been undertaken to seek the answers to the following research questions: (i) what is the status of safety management of the public building construction projects in Pokhara valley? (ii) what are the measures to be taken for improving the safety of public building construction projects? The objectives of this study are: (i) to study the status of safety management in public building construction projects in Pokhara valley and (ii) to suggest measures for the improvement of safety in public building construction projects.

## Review of Literature

The safety of building works has a very important role in construction. Without the involvement of workers, no construction is possible. Therefore, construction job involves risk, and hazards while working in difficult working situations. Everyone who involves in construction activities should be aware of the required safety precautions, including wearing PPE.

An accident can be defined as an unplanned and unexpected occurrence that upsets the planned sequence of events and actions resulting in the loss of production, injury to the persons, and damages to the plants and equipment. It is an unexpected and unwanted event that cannot be anticipated in advance (Shrestha, 2019). Occupational accident covers an occurrence arising out of, or during, work those results in fatal or non-fatal injury (ILO, 2002).

Unsafe acts and unsafe conditions are often referred to as primary causes of accidents because they are the most obvious and are usually directly involved or present. Unsafe acts include: operating without authority, failing to secure equipment, or warning other employees of possible danger, failing to use PPE, throwing materials carelessly, operating or working at unsafe levels of speed, either too fast or too slow, making safety devices inoperative by removing, adjusting, disconnecting them, using unsafe equipment or using equipment unsafely, using unsafe procedures in loading, placing, mixing, taking unsafe positions, under suspended loads, lifting improperly, cleaning, adjusting, oiling, repairing, etc (Vaishali, 2019). Financial constraints, a lack of commitment, a lack of safety policies and programs, a lack of standards, a lack of knowledge and information, a lack of appropriate training, inadequate quality control systems, and other factors are secondary causes of accidents. The provision of safety pamphlets, the provision of safety equipment, the provision of a safe atmosphere, and the appointment of a competent safety representative on site were determined to be key elements related to construction site safety (Sawacha et al., 1999).

The actual expenses of a workplace injury exceed the raw cost. There are not only financial expenses connected with a workplace accident but also morale concerns and other indirect costs that might be difficult to measure. Indirect expenses may include negative effects on the company's reputation, damaged equipment, poorer morale, decreased efficiency, and lost production time (Harter, 2019). Maintaining the health and safety of the workforce is one of the challenges in the construction industry (Timilsina et al., 2021).

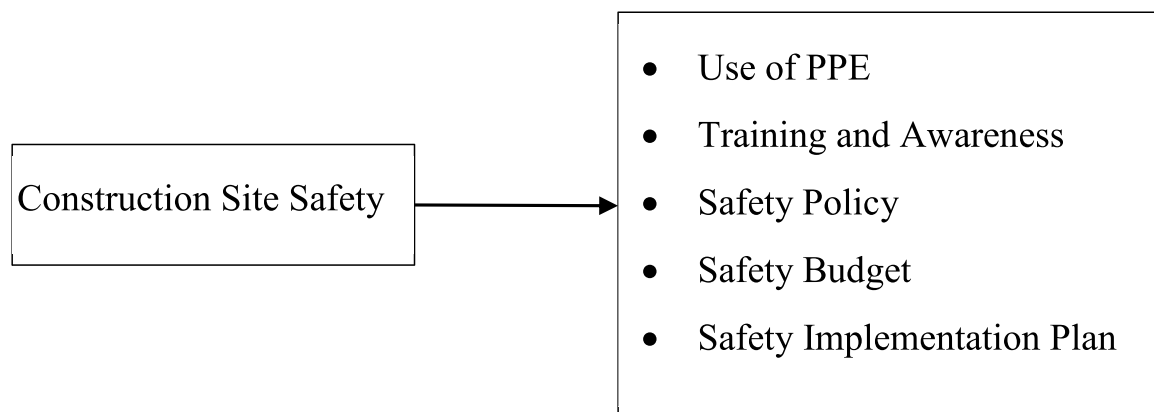
Most often accidents occur at construction sites due to a lack of safety awareness among workers and supervisors, improper work procedures, failure to use appropriate PPE, improper handling of machinery, and human error. Failure to use proper safety measures by predicting hazards in advance is another key contributing factor to construction site safety. Accidents result not only in loss of life but also in financial losses and delays in the project (Giri, 2020). Accidents at work result in a variety of losses for injured employees, their families, employers, and society (Feng et al., 2015). Issues with employees or the work team, workplace difficulties, equipment concerns including PPE, issues with appropriateness and condition of materials, and risk management issues all played a role in the incidents to varying levels (Haslam et al., 2005).

Falls may occur as a result of improper use of safety equipment and a lack of teamwork among the workers. Additionally, falls from higher levels are more likely to happen when construction workers perform risky tasks, and the complexity of the work may divert workers' attention at high altitudes, possibly resulting in an unintentional fall (Jo et al., 2015). The basic problem in maintaining safe working conditions in construction industries is negligence towards safety, lack of use of proper safety equipment and tools, and illiteracy of potential health hazards. Faulty machinery or improper use can cause accidents or even fatalities in the construction industry. Construction difficulty, which is a physical feature of the building, the urgency of the construction period, including accelerated work, and insufficient responses to unforeseen circumstances on site are direct factors affecting critical accidents in building construction (Ahn et al., 2022).

There is a limitation of research and studies on the area of safety in building construction. There is very little research in the field of occupational safety and health (OSH) in Nepal. Especially in Pokhara valley, there is no research on safety in public building construction projects. Therefore, the researchers intended to research safety on a public building project in Pokhara valley. The conceptual framework of the research is shown in Figure 1 below.

**Figure 1**

*Conceptual Framework*



### **Personal Protective Equipment**

Protective clothes, goggles, helmets, or other garments or equipment designed to safeguard the wearer's body from damage are examples of PPE. PPE is regarded as one of the most significant elements influencing construction site accidents. Lack of knowledge, worker reluctance to use PPE, and negligence in PPE maintenance are all factors influencing construction site safety (Elavarasan, 2022).

### **Safety Training**

Safety training is essential for orienting workers to their safety as well as making them aware of the nature of their work, and the usage of PPE for enhancing safety performance.

### **Safety Policy**

The safety policy guideline incorporates the firm's aims and objectives. A safety policy

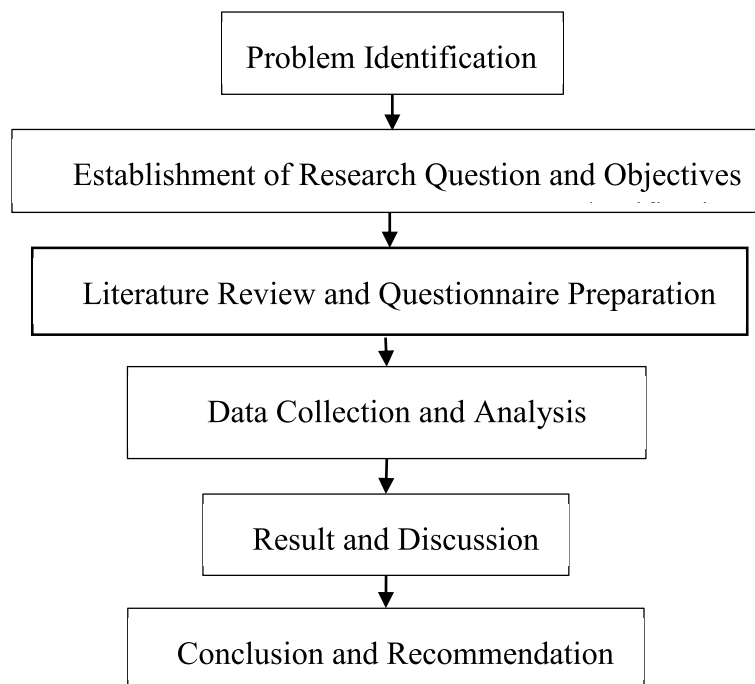
includes regulations and methods to safeguard workers' and the general public's health and safety.

### Materials and Methods

The problem identification was done through a literature review and discussions with professionals in the construction industry. Nine public building construction projects under construction were identified and selected from different government agencies in the Kaski district of Nepal. From each construction project two engineers/sub-engineers, one contractor, one consultant engineer, and two persons from government authority were selected to collect the data. Then, the collected data were arranged, edited, and coded systematically. Data were analyzed quantitatively using Microsoft Excel, and SPSS. Finally, data were interpreted and presented using simple descriptive statistics, tables, and charts, and a conclusion was drawn. The research flow chart is shown in Figure 2 below.

**Figure 2**

*Research Flow Chart*



### Result and Discussion

#### Demographic Profile of Respondents

All the respondents to the questionnaire were civil engineers working with clients, consultants, contractors, and government authorities who have direct involvement in public building construction projects. The demographic profile of the respondent is given in Table 1 below. Out of 54 respondents, 50% of the respondents were clients (government authority), 16.6% were consultant engineers, and 33.4% were contractors. Majority of respondents 90.3% were male and 9.7% were female. Regarding the age of respondents, the majority, 66.7% were 18 to 30 years old, 27.8% were 31 to 43 years old and 5.5% were 44 to 55 years old. Similarly, 3.7% of respondents have less than one year of experience, 42.6% have 1 to 3 years of experience, 33.3% have 4 to 6 years of experience and 20.4% have more than 6 years of experience in public building construction projects.

**Table 1***Demographic Profile of the Respondents*

| Variable                    | Category                      | Percent |
|-----------------------------|-------------------------------|---------|
| Type of Company             | Client (government authority) | 50%     |
|                             | Consultant                    | 16.6 %  |
|                             | Contractor                    | 33.4%   |
| Sex                         | Male                          | 90.3    |
|                             | Female                        | 9.7     |
| Age                         | 18 to 30                      | 66.7    |
|                             | 31 to 43                      | 27.8    |
|                             | 43 to 55                      | 5.5     |
| Years of working experience | <1 year                       | 3.7     |
|                             | 1 to 3 years                  | 42.6    |
|                             | 4 to 6 years                  | 33.3    |
|                             | >6 years                      | 20.4    |

**Descriptive Statistics**

The result reveals that 96.3% of respondents do not have information about health and safety in construction sites, while 3.7 % have some information. Similarly, 49.1% responded are known, and 50.9% were unknown about the accidents happening in public building construction projects in the last six months. It can be interpreted from the result that accidents, either major or minor, happened in most of the construction sites. The workers who replied that they were unknown of the happening of any accidents were either uninformed of the accidents or joined the site after the accidents.

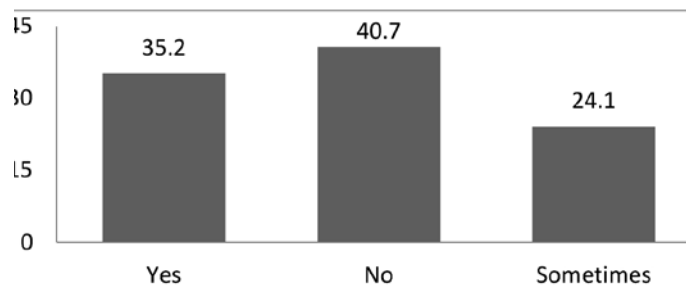
From the result, it is also concluded that the number of accidents leading to death is less frequent than disability cases. However, accidents causing minor injuries are most frequent in construction sites. Due to the lack of practice in recording any accidents at construction sites, the number of minor injuries might be more in the sites than that found during the study. The contractors/Engineers in the construction site are mostly satisfied with the availability of safety gloves with gradually decreasing satisfaction on boots, helmets, and so on. As per the scenario of Pokhara valley, the uses of PPE are mostly not available. The laborers are compelled to do the work without the use of PPE which results in accidents. Figure 3 shows that the reasons of causes of accidents are lack of legislation, lack of safety knowledge, contractor's carelessness, and workers' carelessness. The major reason is the lack of safety knowledge. Contractors, government authorities, consultants, and workers are all equally responsible for happening accidents on construction sites.

**Figure 3***Reasons Behind Causes of Accident*

According to 40.7% of respondents, there is no regular inspection of sites to identify health and safety hazards while 35.2% of respondents, there is an inspection of sites by government agencies, and 24.1% of respondents responded that government agencies do inspections of the site sometimes. Safety inspections are the usual means used to enforce safety at the job site. From the research, it was found that there is a lack of regular site inspection from government agencies resulting in construction site safety violations.

**Figure 4**

*Safety Inspection from Government Agency*



As shown in Figure 5 the research reveals that contractors are more responsible for work-related accidents, injuries, illnesses, and fatalities on construction sites. However, clients and consultants are also equally responsible for the work that may cause accidents.

**Figure 5**

*Responsible for Work-Related Accidents*

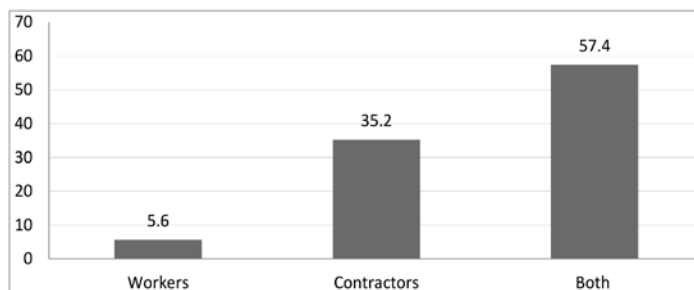
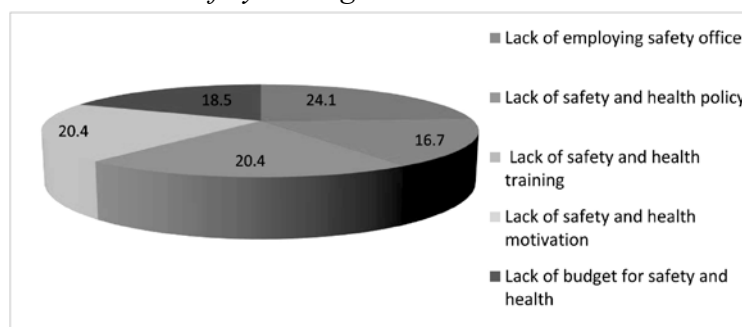


Figure 6 indicates that safety training and induction classes are not conducted in almost all construction sites. This shows that no importance has been given to increasing safety awareness among workers and introducing safe working procedures through training and induction classes.

**Figure 6**

*Major Problems in Health and Safety Management on Construction Sites*

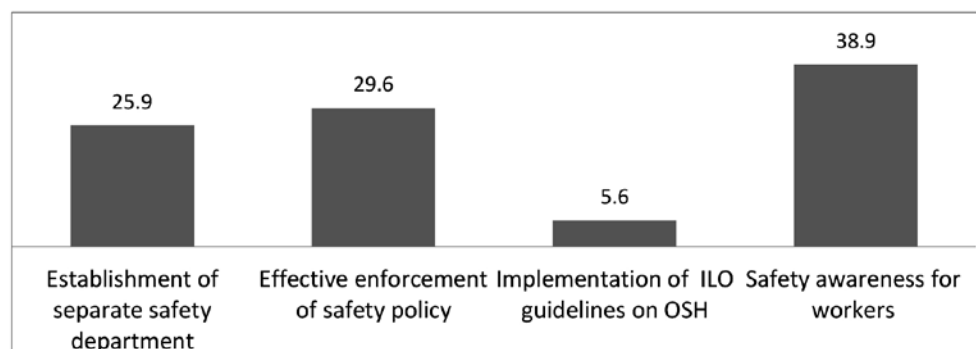




As shown in Figure 7, 38.9% of the respondents replied that safety awareness among workers is the best way to minimize construction site accidents and they think the existing provision is insufficient. 25.9% of respondent says that a separate safety department should be established for effective management of construction site safety while 29.6% of the respondent says existing safety policy should be effectively enforced. The result reflects the fact that existing laws and provisions do not cover all the safety issues of the construction industry. Safety provisions could be made more enforceable by including additional safety clauses.

**Figure 7**

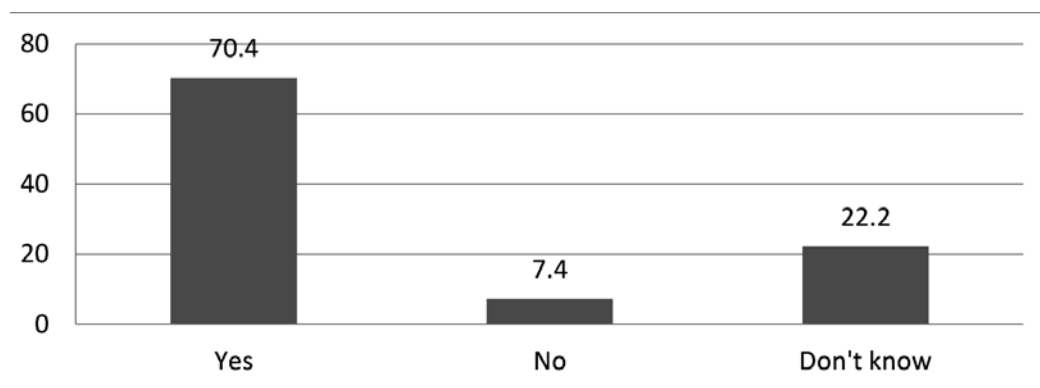
*Factors to be Considered for Better Management of Construction Site Safety*



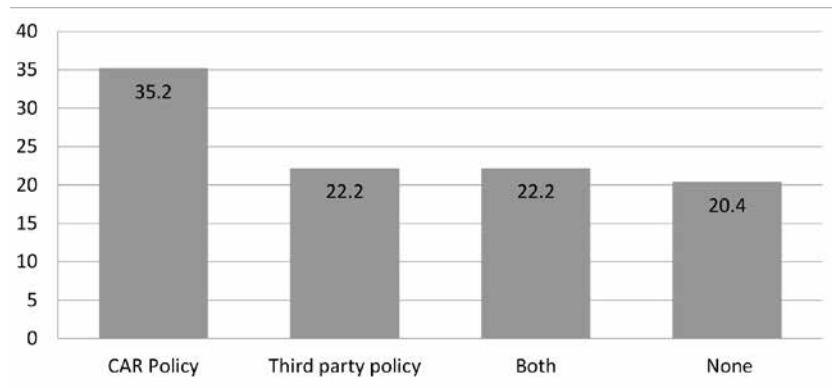
According to Figure 8, 70.4% of respondents answered that the safety plan was included in the contract documents, while 7.4% replied was not included the safety plan in the contract documents and 22.2% replied did not know about the safety plan. The result reflects that most of the projects included the safety plan in the contract documents but in the practice, there is poor implementation of the safety plan in the public building construction projects.

**Figure 8**

*Inclusion of Safety Plan on Contract Document*



Most of the contractors have implemented the contractor-all risk (CAR) policy in the construction sites. Here we can conclude that the inclusion of workers on insurance policies is satisfactory, however, there is space for improvement. The status of insurance is shown in Figure 9 below.

**Figure 9***Insurance Policy Used in the Public Building Construction Sites*

The study explored the existing acts and safety provisions for their weaknesses to achieve better safety performance at the site through a proper implementation based on the survey results. Labor Act 1992 and National Building Code (NBC) are silent in the conduction of safety training and communications to workers at the site. Contract documents have also not included provisions for safety training, induction classes, and hazard communication among workers. There is a lack of provisions for regular safety monitoring, evaluation, and submission of safety performance reports to the concerned regulatory bodies. There is a lack of provisions for fines and other punitive measures for violation of safety regulations and poor safety performance (Acharya, 2015). Construction accidents are primarily caused by worker negligence, failure to follow safety protocols, working at heights, operating machinery without safety devices, poor site management, harsh work conditions, workers' lack of knowledge and skill, failure to use PPE, and poor worker attitudes toward safety (Hamid et al., 2008). To improve safety performance at construction project sites and subsequently create a safer working environment for employees with fewer risks and accidents, the contribution of various stakeholders in the construction industry is essential (Mostly, 2022).

Safety management is one of the vital parts of construction project management, however, it is practiced poorly. Even though the practice is mentioned and included in the project specification, most of the topic is only limited in policy but is not implemented on construction sites. It is the responsibility that belongs both to the consultant and contractor but due to poor supervision from either side safety management is vastly neglected. Policymakers need to specify the better provision of safety in public building construction while making policies. On top of that, proper inspection should also be done from the executive level. From the side of the contractor, proper equipment should be of top priority including toolbox talk, induction training, and guidance on the use of equipment properly.

### **Conclusion and Recommendation**

The study depicted that accidents, injuries, and illnesses are serious problems during construction activities. The authorities such as the government, clients, and consultants, are all responsible for the inadequate safety performance of the building construction project by

selecting a competitive tendering system without incorporating safety and health concerns in the tender documents. The purpose of this study was to identify the safety management status and provide suggestions for the betterment of safety on public building construction sites. The major identified causes of construction site accidents are falling from heights due to being struck by objects. Except for general PPE like gloves and boots, no other PPE is available at construction sites appropriately and adequately. The study depicted that accidents, injuries, and illnesses were serious problems in building construction project sites in Pokhara valley. The lack of safety culture of workers, low safety and health motivation of contractors, and lack of strong commitment of the government to safety and health issues were the key contributors that aggravated the problem. Most of the respondents recommended including additional safety clauses in the contract document and including a site-specific safety plan. The implementation of safety provisions and regulations ensured by state laws and acts was poor at the site due to a lack of proper safety policy and plan, a separate safety department with a safety manager, and an adequate budget. The poor implementation was also contributed by the lack of regular safety inspections by government authorities. The study found that some key provisions need to be included in existing acts and regulations. Mandatory provision of conducting safety training to enhance safety awareness and safe working procedures among workers.

For better safety management on the construction site, it is suggested that the workers are not allowed to work in difficult health conditions and unfavorable weather conditions. The implementation of safety provisions and regulation ensured by state laws and acts were poor at the site due to a lack of proper safety policy, and safety plan. Thus, it can be concluded that for minimizing the contributing factors of injuries and fatalities, proper use of safety measures, PPE, and strict enforcement of safety policies and provisions are essential.

A safety manager should be appointed to inspect the safety conditions of the site and inform workers about hazards before starting work. Safety training and induction classes should be conducted to enhance the safety awareness and skills of the workers. Appropriate PPE should be used appropriately. Existing safety laws and regulations should be strictly enforced. Further study may be carried out considering other infrastructure projects and other project-specific construction site safety measures.

### **Conflicts of Interest:**

The author declares no conflict of interest.

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# A Comparative Study of Immediate Annuities and Ordinary Annuities in establishing the Phantom of Zero Liability Under the Trusteeship Pension Valuation Structure

Ogungbenle Gbenga Michael\*, Adeoye Vincent Oluseyi\*\*

\*Department of Actuarial Science, University of Jos, Nigeria

\*\*Department of Banking and Finance, University of Jos, Nigeria

## Abstract

**Background:** The liabilities of a pension scheme define the financial value to be paid at a definite period in the future. The underlying goal of pension plans is to provide retirees with sufficient stream of income to enable them to live a decent financially independent life post-employment period. The regulatory framework for occupational pension schemes necessitates the services of trustees as administrators who assume legal administrative responsibilities on the scheme and saddled to oversee actuarial valuations of the scheme's liabilities at definite points in time.

**Objectives:** The objective of this paper is (i) to empirically examine the drivers of pension liability and how they are evaluated by the trustee's model. (ii) Specifically, the study intends to use input parameters of the trustee model to establish the conditions for which the value of liability is zero under trusteeship annuity factor.

**Methods:** This study applies trustees' valuation model, the present values together with infinitesimal calculus. Salary data as well as demographic data were obtained from an agricultural production services company located in Jos-South, Nigeria.

**Results:** Computational evidence from our results proves that the total service liability under the conditions of the current model is vanishingly zero. However, when the annuity factor is replaced by life table annuity, the service liability does not vanish.

**Conclusion:** The total service liability obtained as zero therefore initiates inquiry as to whether this current valuation framework causes potential uncertainties for the pension trustees who are responsibly saddled with both administration and core decision-making responsibilities of the system.

**Keywords:** Annuity factor, liability, potential uncertainties, trustees' model, valuation

**JEL Classification:** C02, C13, C15, C63

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## Correspondence:

Ogungbenle Gbenga Michael  
moyosiolorun@gmail.com

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**Introduction**

The goal of this paper is to numerically examine the drivers of pension liability and determine how they are computationally evaluated under the trustee's model. In particular, it intends to employ the parameters of the trustee's model to compute the pension liability of a defined benefit pension scheme and subsequently prove that the value of liability is zero under the newly defined trusteeship annuity factor as functionally defined in McNally and O'Connor (2013). The liability for pension plan is an important form of employee's basic compensation package that has favourable bearing on scheme member's motivation and diligence to continue in the service of the plan sponsor. It further commits the plan members to achieve the set objectives on the job and arouses concern for the continued existence of the company. Therefore, a public pension plan defines a negotiated framework where the plan sponsor designs pension for members towards retirement.

Consequently, at retirement, the plan gives the plan members opportunities to secure a reasonable living standard to fall in line with what obtained during service. There seems to be variations in the manner in which pension assets are administered and benefits are disbursed to qualified members as a result of the problems connected to the previously existing pension plan. Defined benefits pension schemes present a type of deferred remuneration received beyond the different kinds of cash disbursements. Apart from the salaries earned on their official duties presently, scheme members would obtain promised benefits payable from retirement. In order carry out actuarial valuation on these benefits, it is sufficient to determine the level of the expected future pension benefits would be recognized now such that the present value of benefits captures the future expected benefit disbursements. This describes the net present-value accounting for the scheme member's expected future salaries as a current liability.

**Review of Literature**

Generally, the social security system recognizes pension liabilities employing the actuarial phenomenon of pension benefit obligation or the entry age normal approach. The two methods mentioned takes care of future salaries growth projection but would not account for future service and consequently only accounts for a certain percentage of the present value of benefits. The pension benefit obligation accounts for the present value of benefits in proportion to the percentage of a plan member's service received to date in relation to the expected total at retirement. However, the entry age normal pension benefit obligation accounts for the present value of benefits in proportion to the percentage of a scheme member's discounted total salaries received to the present in relation to the expected total at retirement.

In Novy-Marx and Rauh (2009), the least applied actuarial liability method on defined benefits pension schemes is the accrued benefit obligation. This technique recognizes the benefit payments which are received to the present and bases the projected benefit payments outgo on the current member's salary profile. We infer from Pugh (2006) that actuarial techniques of pension liabilities valuations which incorporate salary growth in relation to pension benefit obligation, entry age normal or present value of benefits should be actuarially discounted

at bigger rates. Consequently, pension actuary observe that the discount rate must include a measure of uncertainty connected to pension liabilities and because pension benefits are usually guaranteed under public pension scheme, the precise discount factor is a risk-free rate. We observe in Chen and Matkin (2017) that since employee's salaries are inadvertently introduced to inflation uncertainties, salaries growth and the stock market should be positively correlated across a long-time horizon. When the employee's salary profile is reviewed upwards, then Brien (2020); Wang et al. (2021) argue that optimal investment on the risky asset declines although in order to earn robust returns, the pension manager should inject more funds to buy risky asset instruments. The authors noted that when the employee's salary increases, the living reserve fund markedly improves, and the risk tolerance will be strong such that the investment trajectories become more volatile.

Following Black (2006), the price of stocks rises where it seems that times look definitely favourable. During favourable times, salaries and benefits seems to grow exponentially faster than normal, consequently, the wider your perspective on the pension liability, the more stocks you would require for hedging against risk. Lucas and Zeldes (2006) obtained an actuarial structure for the numerical estimation of the correct risk-adjusted discount rates for defined benefits pension liabilities that takes care of the future pension benefit payments exposure to the market via the salaries growth profile.

These problems seem insignificant under the accrued benefits obligation that is not exposed to salary risk. However, Bulow (1982) observes that the accrued benefit obligation is usually an adequate liability technique for company's schemes since deeper actuarial methods could inadvertently and inadequately mean an intrinsic pension scheme under which young plan members acquiesce to low aggregate remuneration in exchange for an unofficial covenant that such employees would be heavily compensated in their career progression. As a result of the attendant consequences in addition to those inadvertently connected with which benefits are currently recognized precisely, Following Bulow (1982), a possible consequence of such an assumption is that it is erroneously believed that where an employee's benefit is tied to his final salary profile, he is insured against inflation risk till he retires. Therefore, the provision for inflation protection mechanism or the non-existence of such mechanism would definitely affect the correct discount rate to apply in discounting pension liabilities irrespective of which liabilities amount are recognized.

Nevertheless, Bodie (1990) observes that the inability of plan sponsors to exhibit marked interest in inflation protection investment vehicles through CPI-linked bonds apparently proves that the pension fund liabilities is not unit linked nor inflation-indexed. The basic goal of pension plan is to secure retirees against abject poverty, empower them to live required standard of living and guarantee an economically independent life at senescence. From the point where a scheme is inceptioned, achievable financial targets are set which should be satisfied as appropriate. The capacity of a pension plan to satisfy its pension liabilities objectives at a prescribed period under current regulatory framework can be actuarially appraised even though

this could solely define a good estimation provided that the future is assumed certain. In order to achieve the plan's set objectives, it is necessary to perform actuarial valuation of liabilities at regular intervals under the framework of defined benefit scheme structure.

The valuation of a defined benefit plan necessitates a numerical appraisal of both the plan's assets and its liabilities. Essentially, valuation exercise of a defined benefit pension scheme's assets and liabilities under trusteeship scheme is performed under the following settings. (i) To establish both the approved pension scheme valuation funding technique and determine what techniques are applicable to the scheme being considered. (ii) To establish an approved assumption for valuation and estimate the impact of scheme's size on the tendency to recover from any perturbations (stability of its funding). (iii) To measure future cash flows of the scheme and value the assets and liabilities. (iv) To model the sensitivity of the plan to perturbations of actuarial parameters such as interest rates and mortality. The valuation could be performed where the actuary intends to confirm if the pension fund meets the minimum funding standard laid down under the legal framework. For an essential use of annual trust report to the plan members, the pension fund trustees particularly needs the valuation exercise to evaluate contribution rates.

The valuation exercise could be performed for the purpose of the financial statements of the plan sponsor to recognize the fair value of the surplus or deficit in the pension plan although there does not seem to exist definite conditions for consistency under the conditions (i)-(iv) valuation assumptions just enumerated in the valuation requirements. Consequently, a defined benefit plan could possess four key valuation results needed for the four differing scenarios each of which could be described as sufficiently adequate on its set objective at any given valuation date. However, the specified guidelines set for the four valuation procedures could orchestrate varied assumptions, computation bases and varied attention on the results produced. Since defined benefit scheme has long term liabilities, the valuation concept must embed uncertainties such as investment uncertainties and volatility uncertainties which are apparently connected with the claims together with investment returns which impact the adequacy of the reserved capital to cover such claims.

As a result of the marked risks connected with the incomplete financial markets, defined benefit pension liabilities is not usually fully hedgeable because a full hedging could lead to unbearable costs. We observe in Sundaresan & Zapatero (1997); Inkmann, Blake & Shi (2017), that the adoption of mortality rate in measuring valuation is a critical variable when computing replacement ratio of future funds. The estimation of liabilities already received necessitates accumulation as opposed to pension system which addresses discounting a stream of promised future benefits cash flows to the present with the goal of computations associated with the valuation exercise. McNally & O'Connor (2013) observe that a current challenge for trustees is to understand and reconcile the different valuation processes. Despite the appointment of financial market consultants on the scheme, trustees could still be conscripted into legal problems over non-performance of pension funds if they are not adequately informed as to the

robustness of the valuation results.

Following Josa-Fombellidaa and Rincon-Zapatero (2004), and Josa and Navas (2014), an aggregate form of defined benefit pension scheme where the active scheme members instantaneously exist contemporarily with retirees is suggested such that the trustees determine in advance benefits receivable by the scheme members at retirement. However, it is assumed that such benefit being modelled through deterministic method would correlate with the financial market dynamics. As scheme members save for retirement benefits vide occupational pension schemes, there exist expectations on the structural value of benefits disbursement at qualification period and consequently, public pension plans possess explicit models for computing retirement benefits which functionally depends on the number of years of service and salary.

Apparently, both McNally and O'Connor (2013), and McNally and O'Connor (2018) developed alternative innovative models when performing actuarial valuation exercise coming from the Irish perspectives under three scenarios. From our keen observation, it seems the authors could not carry out further asymptotic investigations on their models. This lacuna observed in McNally & O'Connor (2018) presents serious gaps in actuarial literature. In attempting to partly solve this problem, Ogungbenle (2022) further investigated the actuarial conditions on pension liability under the International Accounting Standard *IAS19* pension guidelines. The author found out that when certain mathematical annuity was imposed on *IAS19* pension model, the total liability vanishes. Moreover, the actuarial valuation of pension liability under the minimum funding standard was investigated in Ogungbenle and Omede (2022). Consequently, when a different mathematical annuity was imposed on the model, the authors found out that the liability is vanishingly zero. In order to fill the gap identified, this study will approach our arguments in another actuarial direction different from those in Ogungbenle (2022); Ogungbenle and Omede (2022) and McNally and O'Connor (2018).

As observed above, it seems McNally and O'Connor (2018) could not carry out any further asymptotic investigations on their models. This lacuna observed in McNally and O'Connor (2018) represents serious waves of gaps in actuarial literature. In order to fill the gap identified, this study will approach our arguments in another actuarial direction using the Trustee's valuation model with another mathematical annuity factor defined on it.

### Description of Notation

|             |   |
|-------------|---|
| $L_{Trust}$ | Total service liability                                   |
| $S_c$       | Number of years of pensionable service completed to date. |
| $SAL$       | Current salary  |
| $k$         | The number of pensionable years                           |
| $X$         | Number of years to retirement                             |
| $N$         | Expected lifespan post-retirement                         |
| $A'$        | Annuity factor  |
| $R$         | Annuity rate  |

|        |   |
|--------|---|
| $P_g$  | Pension increase                          |
| $N$    | Life expectancy after retirement 10 years |
| $P_g$  | Pension increase from 1.0% to 4.7%        |
| $d$    | Discount rate 4.5%                        |
| $SALG$ | Salary growth 5.0%                        |

### Life Annuities

The present value of an immediate yearly annuity of 1 unit of currency per annum due to a life aged  $x$  is defined as  $a_x$  and converges to the sum of a series of pure endowments of 1. The first payment of these annuities is disbursed towards the end of the payment period.

$$\text{Following Neil (1979), } a_x = \left( \frac{1}{\frac{1}{(1+i)^x} \sum_{s=1}^{\infty} ({}_sP_x) \frac{1}{(1+i)^s}} \right) \left[ \frac{1}{(1+i)^x} \right] \quad (1)$$

${}_sP_x$  is the probability that a life aged  $x$  will survive to age  $x+s$  and  $i$  is the interest rate. However,  $l_x$  defines the number of lives surviving to age  $x$

$$a_x = \left( \frac{\frac{1}{(1+i)^{x+1}} l_{x+1} + \frac{1}{(1+i)^2} l_{x+2} + \frac{1}{(1+i)^3} l_{x+3} + \frac{1}{(1+i)^4} l_{x+4} \dots}{l_x} \right) \left[ \frac{1}{(1+i)^x} \right] \quad (2)$$

$$a_x = \left( \frac{\frac{1}{(1+i)^{x+1}} l_{x+1} + \frac{1}{(1+i)^{x+2}} l_{x+2} + \frac{1}{(1+i)^{x+3}} l_{x+3} + \frac{1}{(1+i)^{x+4}} l_{x+4} \dots}{\frac{1}{(1+i)^x} l_x} \right) \quad (3)$$

$$A_{x:\overline{m}|} = v^m ({}_mP_x) = {}_mE_x \quad (4)$$

$$D_x = v^x l_x \quad (5)$$

$$D_x \text{ is the discounted deaths and } v = \frac{1}{1+i} \quad (6)$$

is the discount function

$$A_{x:\overline{m}|} = \frac{D_{x+m}}{D_x} \quad (7)$$

$$a_x = \left( \frac{v^{x+1} l_{x+1} + v^{x+2} l_{x+2} + v^{x+3} l_{x+3} + v^{x+4} l_{x+4} \dots}{v^x l_x} \right) \quad (8)$$

$$a_x = A_{x:\overline{1}|} + A_{x:\overline{2}|} + A_{x:\overline{3}|} + A_{x:\overline{4}|} + \dots + A_{x:\overline{\Omega-x-1}|} \quad (9)$$

$$a_x = \left( \frac{D_{x+1} + D_{x+2} + D_{x+3} + D_{x+4} \dots}{D_x} \right) \quad (10)$$

$$a_x = \frac{1}{D_x} \sum_{s=1}^{\Omega-x-1} D_{x+s} \quad (11)$$

$$N_x = \sum_{s=0}^{\Omega-x-1} D_{x+s} \quad (12)$$

$N_x$  is the sum of discounted deaths and  $\Omega$  is the highest age in the mortality table

$$a_x = \frac{N_{x+1}}{D_x} \quad (13)$$

However, when the first of the series of payments is disbursed towards the beginning of the period, then the present value of the annuity is defined by the following series.

$$.. a_x = \left( \frac{\frac{1}{(1+i)^0} l_x + \frac{1}{(1+i)^1} l_{x+1} + \frac{1}{(1+i)^2} l_{x+2} + \frac{1}{(1+i)^3} l_{x+3} + \frac{1}{(1+i)^4} l_{x+4} \dots}{l_x} \right) \quad (14)$$

$$.. a_x = \left( \frac{1}{l_x} \sum_{s=0}^{\infty} \frac{l_{x+s}}{(1+i)^s} \right) \left[ \frac{\frac{1}{(1+i)^x}}{\frac{1}{(1+i)^x}} \right] \quad (15)$$

$$.. a_x = \left( \sum_{s=0}^{\infty} e^{-\delta s} ({}_s P_x) \right) \left[ \frac{\frac{1}{(1+i)^x}}{\frac{1}{(1+i)^x}} \right] \quad (16)$$

$$.. a_x = \left( \frac{\frac{1}{(1+i)^0} l_x + \frac{1}{(1+i)^1} l_{x+1} + \frac{1}{(1+i)^2} l_{x+2} + \frac{1}{(1+i)^3} l_{x+3} + \frac{1}{(1+i)^4} l_{x+4} \dots}{l_x} \right) \left[ \frac{\frac{1}{(1+i)^x}}{\frac{1}{(1+i)^x}} \right] \quad (17)$$

$$.. a_x = \left( \frac{\frac{1}{(1+i)^x} l_x + \frac{1}{(1+i)^{x+1}} l_{x+1} + \frac{1}{(1+i)^{x+2}} l_{x+2} + \frac{1}{(1+i)^{x+3}} l_{x+3} + \frac{1}{(1+i)^{x+4}} l_{x+4} \dots}{\frac{1}{(1+i)^x} l_x} \right) \quad (18)$$

$$.. a_x = \left( \frac{v^x l_x + v^{x+1} l_{x+1} + v^{x+2} l_{x+2} + v^{x+3} l_{x+3} + v^{x+4} l_{x+4} \dots}{v^x l_x} \right) \quad (19)$$



$$\ddot{a}_x = \left( \frac{D_x + D_{x+1} + D_{x+2} + D_{x+3} + D_{x+4} + \dots}{D_x} \right) \quad (20)$$

$$\ddot{a}_x = \frac{N_x}{D_x} \quad (21)$$

$$\ddot{a}_x - a_x = \frac{N_x}{D_x} - \frac{N_{x+1}}{D_x} \quad (22)$$

$$\ddot{a}_x - a_x = \frac{N_x - N_{x+1}}{D_x} \quad (23)$$

$$N_x = D_x + N_{x+1} \quad (24)$$

$$\ddot{a}_x - a_x = \frac{D_x + N_{x+1} - N_{x+1}}{D_x} \quad (25)$$

$$\ddot{a}_x - a_x = \frac{D_x}{D_x} = 1 \quad (26)$$

Consequently, the actuarial deviation of  $\ddot{a}_x$  from  $a_x$  defines the payment made immediately and hence  $\ddot{a}_x - a_x = 1$

## Material and Methods

### Theoretical and Conceptual Framework

Let  $R < \infty$  be the retirement age and let  $B(R)$  define the accrued benefits at age  $R$

$$\text{In (Jordan, 1991), the commutation function } {}_\xi E_x = \frac{D_{x+\xi}}{D_x} \quad (27)$$

where  $D_x = v^x l_x$ ;  $v = \frac{1}{1+i}$  is the discount factor;  $i$  is the interest rate and  $l_x$  is the number of lives surviving to age  $x$

The liability of the pension plan to the employee at  $R$  is  $L(R)$

$$L(R) = \frac{B(R)}{D_R} \int_0^\infty D_{R+\xi} d\xi = B(R) \int_0^\infty \frac{D_{R+\xi}}{D_R} d\xi \quad (27a)$$

$$L(R) = B(R) \int_0^\infty {}_\xi E_R d\xi \quad (27b)$$

Following Neil (1979; Bowers et al., (1997); Hudec (2017); Souza (2019); & Kara (2021),

$$\left( {}_\xi E_R \right) = e^{-\int_0^\xi \mu_{R+u} + \delta du} \quad (27c)$$

$$\text{Where } \mu_{R+u} = -\frac{1}{l_{R+u}} \frac{dl_{R+u}}{du} \quad (27d)$$

is the mortality rate intensity

and  $\delta = \log_e(i+1)$  is the force of interest. Consequently, putting (2a) in (2), the liability function becomes

$$L(\mathbf{R}) = B(\mathbf{R}) \int_0^\infty e^{\left\{ -\int_0^\xi \mu_{\mathbf{R}+u} + \delta du \right\}} d\xi \quad (27e)$$

We can now push the  $B(\mathbf{R})$  into the integral to have

$$L(\mathbf{R}) = \int_0^\infty B(\mathbf{R}) \left\{ e^{\left\{ -\int_0^\xi \mu_{\mathbf{R}+u} du \right\}} \times e^{\left\{ -\int_0^\xi \delta du \right\}} \right\} d\xi \quad (27f)$$

$$L(\mathbf{R}) = \int_0^\infty B(\mathbf{R}) \left\{ e^{\left\{ -\int_0^\xi \mu_{\mathbf{R}+u} du \right\}} \right\} e^{-\delta \xi} d\xi \quad (27g)$$

$$\text{Note that } ({}_\xi P_{\mathbf{R}}) = e^{\left\{ -\int_0^\xi \mu_{\mathbf{R}+u} du \right\}} \quad (27h)$$

$$L(\mathbf{R}) = \int_0^\infty B(\mathbf{R}) ({}_\xi P_{\mathbf{R}}) e^{-\delta \xi} d\xi \quad (27i)$$

Let  $x$  is any age such that  $x > \mathbf{R}$  and  $e$  is the entry age at which the employee was employed.

Suppose  $\xi = x - \mathbf{R}$  then  $d\xi = dx$ . When  $\xi = 0$ ;  $x = \mathbf{R}$  and if  $\xi = \infty$ ;  $x = \infty$

If  $\mathbf{R} - e$  is the years of service with  $\mathbf{R} - e > l$  where  $l$  is the length of service.

Then the expected present value of the future benefits promised by the pension plan sponsor connected with the retirement age  $\mathbf{R}$  for the employee with  $\mathbf{R} - e$  years of service is given by

$$L(\mathbf{R}) = \int_{\mathbf{R}}^\infty B(\mathbf{R}) ({}_{x-\mathbf{R}} P_{\mathbf{R}}) e^{-\delta(x-\mathbf{R})} dx = B(\mathbf{R}) \int_{\mathbf{R}}^\infty ({}_{x-\mathbf{R}} P_{\mathbf{R}}) e^{-\delta(x-\mathbf{R})} dx \quad (27j)$$

$$L(\mathbf{R}) = \int_{\mathbf{R}}^\infty B(\mathbf{R}) ({}_{x-\mathbf{R}} P_{\mathbf{R}}) e^{-\delta(x-\mathbf{R})} dx = B(\mathbf{R}) \eta(\mathbf{R}) \quad (27k)$$

The continuous annuity factor representing the present value of retirement age  $\mathbf{R}$  of a lifetime annuity of 1 unit of currency is therefore defined as

$$\eta(\mathbf{R}) = \int_{\mathbf{R}}^\infty ({}_{x-\mathbf{R}} P_{\mathbf{R}}) e^{-\delta(x-\mathbf{R})} dx \quad (27l)$$

### Empirical Framework

The empirical framework of advanced actuarial annuity factor under trusteeship model was applied to investigate the actuarial liability under study.

### The Trustee's Valuation Model

Following the nomenclature in Ogungbenle and Omede (2022), we define the functions below

$$\text{Model 1} \\ L_{Trust} = \left( \frac{k}{\theta} \right) \times (SAL \times (1 + SALG)^x) \times \left( \frac{1}{(1+d)^x} \right) \times \left( \frac{\left( 1 - \left( \frac{1}{1+\mathbf{H}} \right) \right)^N}{\mathbf{H}} \right) \quad (28)$$

$$L_{Trust} = f(\lambda, \mathbf{A}) \quad (29)$$

$$\text{where } \lambda = a_x \text{ and } \ddot{a}_x = a_x + 1 \quad (30)$$

$$f(\lambda, AF) = \begin{cases} g(\lambda) \neq 0 \text{ for } \lambda = a_x \\ g(\alpha) \rightarrow 0 \text{ for } \alpha = AF \end{cases} \quad (31)$$

### Model 2

$$AR = \frac{d - p_g}{1 + p_g} \quad (32)$$

Adding 1 to both sides in (32)

$$1 + \mathbf{R} = 1 + \frac{d - p_g}{1 + p_g} \quad (33)$$

$$1 + \mathbf{R} = \frac{1 + p_g + d - p_g}{1 + p_g} \quad (34)$$

$$1 + \mathbf{R} = \frac{1 + d}{1 + p_g} \quad (35)$$

$$(1 + \mathbf{R})(1 + p_g) = 1 + d \quad (36)$$

$$d = (1 + \mathbf{R})(1 + p_g) - 1 \quad (37)$$

$$\frac{1}{1 + \mathbf{R}} = \left( \frac{1 + p_g}{1 + d} \right) \quad (38)$$

$$\text{Define } \mathbf{R} = \left[ 1 - \left( \frac{1 + p_g}{1 + d} \right) \right]^{\frac{N}{\mathbf{R}}} \quad (39)$$

### Model 3

$$P_{Trust} = L_{Trust} \times \frac{S_c}{k} \quad (40)$$

### Study Area, Study Population and Sampling

The research region is the Jos-South Local government area of Plateau state, Nigeria. However, Jos South is the region where viable industries are located. The salary data of 39 employees from an agricultural production service firm in Jos-South Local Government area of Plateau state, Nigeria was collected from the human resources department.

### Research Instrument and Data Analysis Techniques

#### Method of Data Presentation and Analysis

The trusteeship model stated above is the main actuarial tool used. The salary data collected was cleaned for ease of computations. Along the salary data, the demographic data of each employee was also collected and fed into R language software to enable us to carry out full computation of the actuarial liability. The data was analysed using the trustee valuation model and findings were depicted in graphs and tables for easy understanding of numerical values.

**Table 1***Table of Liabilities ( $L_{TRUST}$ )*

| PNC          | A              | B                  | C             | D             | E                |
|--------------|----------------|--------------------|---------------|---------------|------------------|
| 001          | 0.6000         | 5763673.20         | 0.2340        | 0.0309        | 25041.78         |
| 002          | 0.6333         | 3952684.60         | 0.3797        | 0.0331        | 31488.02         |
| 003          | 0.6667         | 2577590.84         | 0.3327        | 0.0324        | 18549.97         |
| 004          | 0.7333         | 2941101.05         | 0.2790        | 0.0316        | 19039.15         |
| 005          | 0.6667         | 2565783.57         | 0.3327        | 0.0324        | 18465.00         |
| 006          | 0.6833         | 2632010.76         | 0.3184        | 0.0322        | 18457.26         |
| 007          | 0.8333         | 5087603.58         | 0.2050        | 0.0305        | 26516.59         |
| 008          | 0.8333         | 4694979.60         | 0.2050        | 0.0305        | 24470.24         |
| 009          | 0.7833         | 4168250.03         | 0.2340        | 0.0309        | 23643.67         |
| 010          | 0.6000         | 3073314.72         | 0.3797        | 0.0331        | 23194.19         |
| 011          | 0.5333         | 2501652.10         | 0.4528        | 0.0341        | 20624.43         |
| 012          | 0.6667         | 2896347.15         | 0.3184        | 0.0322        | 19815.56         |
| 013          | 0.7333         | 1406082.10         | 0.1878        | 0.0302        | 5854.49          |
| 014          | 0.7000         | 1550205.51         | 0.1719        | 0.0300        | 5597.20          |
| 015          | 0.5833         | 906373.06          | 0.2790        | 0.0316        | 4667.24          |
| 016          | 0.7000         | 1275357.91         | 0.2050        | 0.0305        | 5583.47          |
| 017          | 0.5500         | 1473970.79         | 0.2670        | 0.0315        | 6808.58          |
| 018          | 0.6500         | 1961983.51         | 0.1962        | 0.0304        | 7598.87          |
| 019          | 0.6667         | 2060082.68         | 0.1878        | 0.0302        | 7797.77          |
| 020          | 0.6500         | 1549897.03         | 0.3634        | 0.0329        | 12039.97         |
| 021          | 0.7000         | 2111996.61         | 0.1719        | 0.0300        | 7625.61          |
| 022          | 0.6667         | 1915643.19         | 0.1878        | 0.0302        | 7251.04          |
| 023          | 0.7000         | 2760666.94         | 0.3047        | 0.0320        | 18857.12         |
| 024          | 0.6833         | 1214626.58         | 0.2143        | 0.0306        | 5449.90          |
| 025          | 0.7333         | 1406082.10         | 0.1878        | 0.0302        | 5854.49          |
| 026          | 0.6167         | 973025.11          | 0.2050        | 0.0305        | 3752.84          |
| 027          | 0.5000         | 691510.78          | 0.2790        | 0.0316        | 3052.14          |
| 028          | 0.5000         | 691510.78          | 0.2790        | 0.0316        | 3052.14          |
| 029          | 0.6167         | 973025.11          | 0.2050        | 0.0305        | 3752.84          |
| 030          | 0.6833         | 1072760.18         | 0.1878        | 0.0302        | 4162.10          |
| 031          | 0.6500         | 973025.11          | 0.2050        | 0.0305        | 3955.70          |
| 032          | 0.5833         | 1101702.12         | 0.2340        | 0.0309        | 4653.67          |
| 033          | 0.6000         | 1156787.22         | 0.2239        | 0.0308        | 4785.50          |
| 034          | 0.6833         | 1126398.19         | 0.1797        | 0.0301        | 4165.04          |
| 035          | 0.7167         | 1241854.01         | 0.1645        | 0.0299        | 4376.64          |
| 036          | 0.6500         | 1021676.37         | 0.1962        | 0.0304        | 3957.01          |
| 037          | 0.6833         | 1126398.19         | 0.1797        | 0.0301        | 4165.04          |
| 038          | 0.4333         | 3460390.82         | 0.3327        | 0.0324        | 16187.05         |
| 039          | 0.6333         | 4129131.50         | 0.2239        | 0.0308        | 18030.75         |
| <b>Total</b> | <b>25.5000</b> | <b>84187154.72</b> | <b>9.6913</b> | <b>1.2153</b> | <b>452340.08</b> |

In Table 1 above we have computed the liabilities of the scheme for each member. The total service liability of the scheme was computed using the trustee valuation model. In column *E* the sum of the total liability of the plan is 452,340.08 based on the parameters we have set below

where:

*PCN* = permanent code number

$$A = \frac{k}{\theta} \quad (41)$$

$$B = SAL \times (1 + SALG)^x \quad (42)$$

$$C = \frac{1}{\left(1 + \frac{d}{1 + H}\right)^x} \quad (42a)$$

$$D = \frac{\left(1 - \left(\frac{1}{1 + H}\right)^N\right)}{H} \quad (43)$$

$$E = L_{Trust} = \left(\frac{k}{\theta}\right) \times (SAL \times (1 + SALG)^x) \times \left(\frac{1}{(1 + d)^x}\right) \times \left(\frac{\left(1 - \left(\frac{1}{1 + H}\right)^N\right)}{H}\right) \quad (44)$$

In Table 1, column *A* shows the pension accrual of each member of the scheme. This is the ratio of the number of pensionable years to the retirement age 65. The total pensionable accrual is 25.50. Column *B* shows the projection of the annual salary figure of each member as compared to the current salary growth rate of 5% in Nigeria. This also depend on the number of years to retirement of each of the scheme members and total value sum up to 84,187,154.72. Column *C* shows the discount rate of each member of the scheme and the total value is 9.6913. Column *D* shows the computation of the annuity factor based on their respective age and on the number of expected years to live after retirement which is 10 years the total value is 1.2153. Column *E* shows the service liability of each member of the scheme. The computation was based on the trustee valuation method and the total service liability is 452,340.08

**Table 2**

*Table of Service Years Completed*

| <i>PCN</i> | <i>F</i>   | <i>G</i> | <i>x</i> | <i>I</i> |
|------------|------------|----------|----------|----------|
| 001        | 1152000.00 | 36       | 32       | 33       |
| 002        | 1351224.72 | 38       | 43       | 22       |
| 003        | 761169.72  | 40       | 40       | 25       |
| 004        | 714529.68  | 44       | 36       | 29       |
| 005        | 757683.00  | 40       | 40       | 25       |
| 006        | 740228.64  | 41       | 39       | 26       |
| 007        | 878412.48  | 50       | 29       | 36       |
| 008        | 810623.04  | 50       | 29       | 36       |
| 009        | 833118.72  | 47       | 32       | 33       |
| 010        | 1050612.24 | 36       | 43       | 22       |

|              |                    |    |    |    |
|--------------|--------------------|----|----|----|
| 011          | 1039488.12         | 32 | 47 | 18 |
| 012          | 814570.80          | 40 | 39 | 26 |
| 013          | 220200.00          | 44 | 27 | 38 |
| 014          | 220200.00          | 42 | 25 | 40 |
| 015          | 220200.00          | 35 | 36 | 29 |
| 016          | 220200.00          | 42 | 29 | 36 |
| 017          | 341043.60          | 33 | 35 | 30 |
| 018          | 322620.00          | 39 | 28 | 37 |
| 019          | 322620.00          | 40 | 27 | 38 |
| 020          | 504602.00          | 39 | 42 | 23 |
| 021          | 300000.00          | 42 | 25 | 40 |
| 022          | 300000.00          | 40 | 27 | 38 |
| 023          | 739440.00          | 42 | 38 | 27 |
| 024          | 220200.00          | 41 | 30 | 35 |
| 025          | 220200.00          | 44 | 27 | 38 |
| 026          | 168000.00          | 37 | 29 | 36 |
| 027          | 168000.00          | 30 | 36 | 29 |
| 028          | 168000.00          | 30 | 36 | 29 |
| 029          | 168000.00          | 37 | 29 | 36 |
| 030          | 168000.00          | 41 | 27 | 38 |
| 031          | 168000.00          | 39 | 29 | 36 |
| 032          | 220200.00          | 35 | 32 | 33 |
| 033          | 220200.00          | 36 | 31 | 34 |
| 034          | 168000.00          | 41 | 26 | 39 |
| 035          | 168000.00          | 43 | 24 | 41 |
| 036          | 168000.00          | 39 | 28 | 37 |
| 037          | 168000.00          | 41 | 26 | 39 |
| 038          | 1021863.00         | 26 | 40 | 25 |
| 039          | 786000.00          | 38 | 31 | 34 |
| <b>Total</b> | <b>18983449.76</b> |    |    |    |

Table 2 above shows the computation of service years completed, the current age and the number of future service years. The total annual salary of each member sum up to 18,983,449.76 based on the parameters set below

where:

$PCN$  = permanent code number

$F$  = monthly salary  $\times 12$

$G$  = current age – entry age

$x$  = current age

$I$  = retirement age – current age

In table 2, Column  $F$  shows the annual salary of each member of the scheme. The total annual salary is 18,983,449.76. Column  $G$  shows the number of total pensionable years. Column



$x$  shows the current age of each member of the scheme the minimum is 24 years while the maximum is 47 years. Column  $I$  shows the number of years to retirement.

**Table 3**

*Table of past service*

| $PCN$        | $J$              | $K$ | $L$ | $M$      | $N$      |
|--------------|------------------|-----|-----|----------|----------|
| 001          | 25041.78         | 3   | 36  | 0.083333 | 2086.815 |
| 002          | 31488.02         | 16  | 38  | 0.421053 | 13258.11 |
| 003          | 18549.97         | 15  | 40  | 0.375    | 6956.239 |
| 004          | 19039.15         | 15  | 44  | 0.340909 | 6490.618 |
| 005          | 18465.00         | 15  | 40  | 0.375    | 6924.375 |
| 006          | 18457.26         | 15  | 41  | 0.365854 | 6752.656 |
| 007          | 26516.59         | 14  | 50  | 0.28     | 7424.646 |
| 008          | 24470.24         | 14  | 50  | 0.28     | 6851.666 |
| 009          | 23643.67         | 14  | 47  | 0.297872 | 7042.796 |
| 010          | 23194.19         | 14  | 36  | 0.388889 | 9019.961 |
| 011          | 20624.43         | 14  | 32  | 0.4375   | 9023.19  |
| 012          | 19815.56         | 14  | 40  | 0.35     | 6935.445 |
| 013          | 5854.49          | 6   | 44  | 0.136364 | 798.3393 |
| 014          | 5597.20          | 2   | 42  | 0.047619 | 266.5333 |
| 015          | 4667.24          | 6   | 35  | 0.171429 | 800.0978 |
| 016          | 5583.47          | 6   | 42  | 0.142857 | 797.6391 |
| 017          | 6808.58          | 3   | 33  | 0.090909 | 618.9622 |
| 018          | 7598.87          | 2   | 39  | 0.051282 | 389.6856 |
| 019          | 7797.77          | 2   | 40  | 0.05     | 389.8883 |
| 020          | 12039.97         | 16  | 39  | 0.410256 | 4939.476 |
| 021          | 7625.61          | 2   | 42  | 0.047619 | 363.1245 |
| 022          | 7251.04          | 2   | 40  | 0.05     | 362.5519 |
| 023          | 18857.12         | 15  | 42  | 0.357143 | 6734.687 |
| 024          | 5449.90          | 6   | 41  | 0.146341 | 797.5464 |
| 025          | 5854.49          | 6   | 44  | 0.136364 | 798.3393 |
| 026          | 3752.84          | 1   | 37  | 0.027027 | 101.4281 |
| 027          | 3052.14          | 1   | 30  | 0.033333 | 101.7381 |
| 028          | 3052.14          | 1   | 30  | 0.033333 | 101.7381 |
| 029          | 3752.84          | 1   | 37  | 0.027027 | 101.4281 |
| 030          | 4162.10          | 3   | 41  | 0.073171 | 304.5436 |
| 031          | 3955.70          | 3   | 39  | 0.076923 | 304.2844 |
| 032          | 4653.67          | 2   | 35  | 0.057143 | 265.924  |
| 033          | 4785.50          | 2   | 36  | 0.055556 | 265.8612 |
| 034          | 4165.04          | 2   | 41  | 0.04878  | 203.1729 |
| 035          | 4376.64          | 2   | 43  | 0.046512 | 203.5648 |
| 036          | 3957.01          | 2   | 39  | 0.051282 | 202.9235 |
| 037          | 4165.04          | 2   | 41  | 0.04878  | 203.1729 |
| 038          | 16187.05         | 1   | 26  | 0.038462 | 622.5789 |
| 039          | 18030.75         | 4   | 38  | 0.105263 | 1897.974 |
| <b>Total</b> | <b>452340.08</b> |     |     |          |          |

where  $PCN$  = permanent code number

$J$  = the pensionable years

$K$  = current age – entry age

Table 3 is the table of past services. Column  $J$  shows the service liability. Column  $K$  shows the present number of past service years the minimum is 1 while the maximum is 16. Column  $L$  shows the number of total pensionable years of each member. Column  $M$  shows the ratio of past service years to total number of pensionable years. Column  $N$  shows the past service liability for each member of the scheme.

**Table 4**

*Table of Ordinary Annuity*

| $PCN$ | $P$   | $Q$    | $R$    |
|-------|-------|--------|--------|
| 001   | 0.01  | 0.0347 | 0.0000 |
| 002   | 0.011 | 0.0336 | 0.0000 |
| 003   | 0.012 | 0.0326 | 0.0000 |
| 004   | 0.013 | 0.0316 | 0.0000 |
| 005   | 0.014 | 0.0306 | 0.0000 |
| 006   | 0.015 | 0.0296 | 0.0000 |
| 007   | 0.016 | 0.0285 | 0.0000 |
| 008   | 0.017 | 0.0275 | 0.0000 |
| 009   | 0.018 | 0.0265 | 0.0000 |
| 010   | 0.019 | 0.0255 | 0.0000 |
| 011   | 0.02  | 0.0245 | 0.0000 |
| 012   | 0.021 | 0.0235 | 0.0000 |
| 013   | 0.022 | 0.0225 | 0.0000 |
| 014   | 0.023 | 0.0215 | 0.0000 |
| 015   | 0.024 | 0.0205 | 0.0000 |
| 016   | 0.025 | 0.0195 | 0.0000 |
| 017   | 0.026 | 0.0185 | 0.0000 |
| 018   | 0.027 | 0.0175 | 0.0000 |
| 019   | 0.028 | 0.0165 | 0.0000 |
| 020   | 0.029 | 0.0155 | 0.0000 |
| 021   | 0.03  | 0.0146 | 0.0000 |
| 022   | 0.031 | 0.0136 | 0.0000 |
| 023   | 0.032 | 0.0126 | 0.0000 |
| 024   | 0.033 | 0.0116 | 0.0000 |
| 025   | 0.034 | 0.0106 | 0.0000 |
| 026   | 0.035 | 0.0097 | 0.0000 |
| 027   | 0.036 | 0.0087 | 0.0000 |
| 028   | 0.037 | 0.0077 | 0.0000 |
| 029   | 0.038 | 0.0067 | 0.0000 |
| 030   | 0.039 | 0.0058 | 0.0000 |
| 031   | 0.04  | 0.0048 | 0.0000 |

|              |             |               |          |
|--------------|-------------|---------------|----------|
| 032          | 0.041       | 0.0038        | 0.0000   |
| 033          | 0.042       | 0.0029        | 0.0000   |
| 034          | 0.043       | 0.0019        | 0.0000   |
| 035          | 0.044       | 0.0010        | 0.0000   |
| 036          | 0.045       | 0.0000        | 0.0000   |
| <b>Total</b> | <b>0.99</b> | <b>0.6167</b> | <b>0</b> |

In Table 4, the sensitivity analysis was carried out between annuity rate and the annuity factor, it is apparent that the annuity factor is zero. This was proven in the theorem, the total value if the annuity rate of the plan is 0.6167

Table 4 is a table of ordinary annuity. Column *P* shows the pension growth rate which varies with number of years of each employee in service and it ranges from 1% to 4.7% . Column *Q* shows the annuity rate which varies according to the number of years of each employee in service. Column *R* shows the annuity factor which equate to zero for each employee.

**Table 5**

*Table of Life Annuity*

| PCN | $X$ | $\ddot{a}_x$ | $a_x$  |
|-----|-----|--------------|--------|
| 001 | 32  | 20.686       | 19.686 |
| 002 | 43  | 18.100       | 17.1   |
| 003 | 40  | 18.894       | 17.894 |
| 004 | 36  | 19.894       | 18.849 |
| 005 | 40  | 18.894       | 17.894 |
| 006 | 39  | 19.144       | 18.144 |
| 007 | 29  | 21.238       | 20.238 |
| 008 | 29  | 21.238       | 20.238 |
| 009 | 32  | 19.686       | 19.686 |
| 010 | 43  | 18.100       | 17.1   |
| 011 | 47  | 16.941       | 15.941 |
| 012 | 39  | 19.144       | 18.144 |
| 013 | 27  | 21.570       | 20.571 |
| 014 | 25  | 21.877       | 20.877 |
| 015 | 36  | 19.894       | 18.849 |
| 016 | 29  | 21.239       | 20.239 |
| 017 | 35  | 20.069       | 19.069 |
| 018 | 28  | 21.408       | 20.408 |
| 019 | 27  | 21.571       | 20.571 |
| 020 | 42  | 18.327       | 17.372 |
| 021 | 25  | 21.877       | 20.877 |
| 022 | 27  | 21.571       | 20.571 |
| 023 | 38  | 19.386       | 18.386 |
| 024 | 30  | 21.061       | 20.061 |
| 025 | 27  | 21.571       | 20.571 |

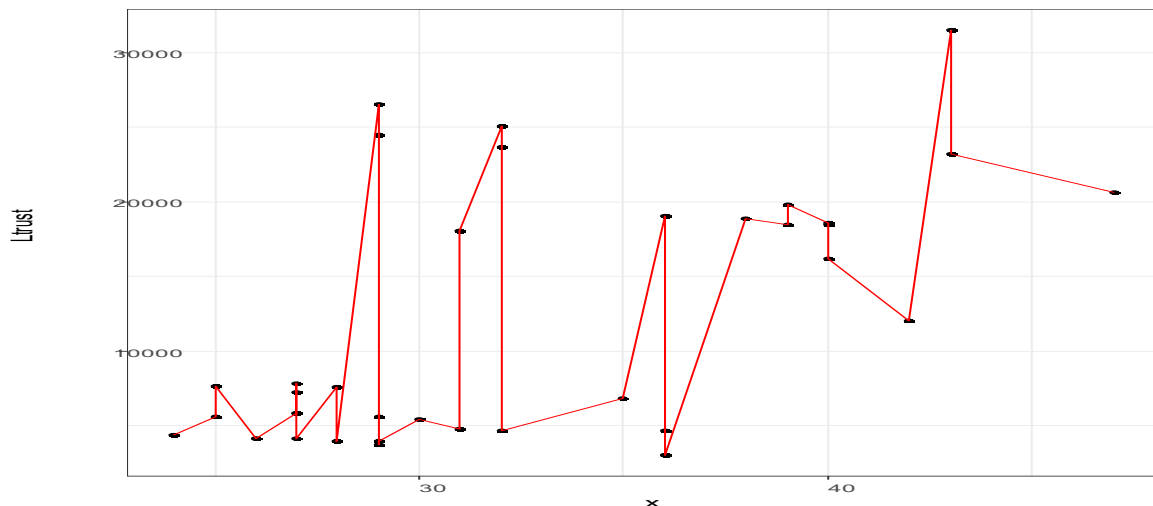
|     |    |        |        |
|-----|----|--------|--------|
| 026 | 29 | 21.238 | 20.238 |
| 027 | 36 | 19.849 | 18.849 |
| 028 | 36 | 19.849 | 18.849 |
| 029 | 29 | 21.238 | 20.238 |
| 030 | 27 | 21.571 | 20.571 |
| 031 | 29 | 21.238 | 20.238 |
| 032 | 32 | 20.686 | 19.686 |
| 033 | 31 | 20.877 | 19.877 |
| 034 | 26 | 21.727 | 20.727 |
| 035 | 24 | 22.020 | 21.02  |
| 036 | 28 | 21.408 | 20.408 |
| 037 | 26 | 21.727 | 20.727 |
| 038 | 40 | 18.894 | 17.894 |
| 039 | 31 | 20.877 | 19.877 |

Source: Neil, 1979.

Table 5 above shows the ages of the employees and the corresponding values of immediate annuities and annuity due. Column  $X$  is the current age of each member of the scheme, column  $a_x$  shows annuity due and column  $a_x$  shows annuity immediate for each member of the scheme. It is therefore amazing to note in column  $E$  of table 1 that when the ordinary annuity in McNally & O'Connor (2018) is changed to life annuities, the liability value is not zero.

### Figure 1

Graph of  $L_{TRUST}$  against  $x$



The Figure1 shows the graph of total service liability ( $L_{Trust}$ ) against the respective age  $x$  for each member of the scheme. It displays wavy trajectories of service liability against age. The trajectories describes the value of the benefits of retirement at the ages of each of the 39 members of the scheme using the trustee valuation method. The graph further shows pension increase from the lowest to the highest age that is 24 years to 47 years. Furthermore, based

on the applicable government regulations, the pension benefits chart is more likely to increase due to increase in pension benefits at every age attained by a member of the scheme.

**Figure 2**

*Graph of  $L_{TRUST}$  against  $K$*

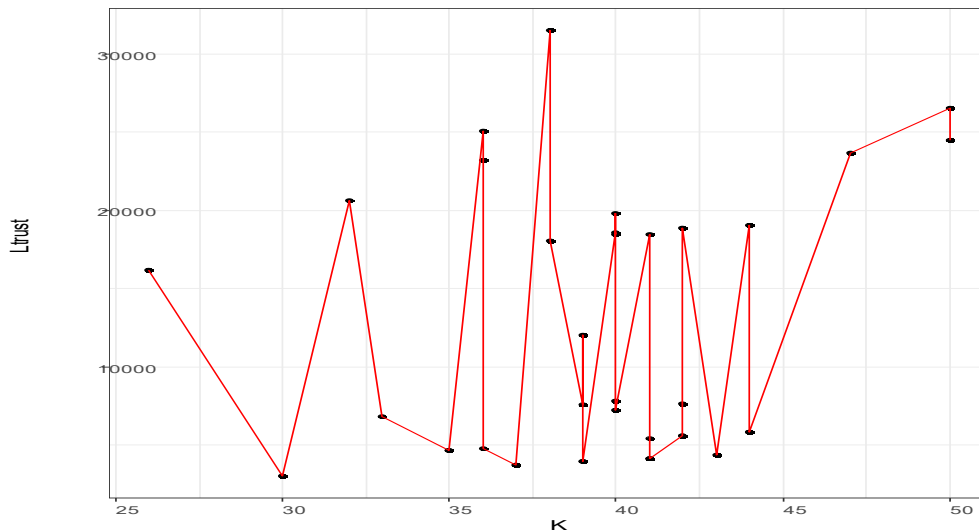


Figure 2 above shows the graph of total service liability ( $L_{Trust}$ ) against number of pensionable years ( $k$ ) for each member of the scheme. This shows an increase in service liability on the average moving chart that depicts the average value of benefits of the scheme members with respect to their various projected number of pensionable years.

**Figure 3**

*Graph of  $L_{TRUST}$  against Salaries*

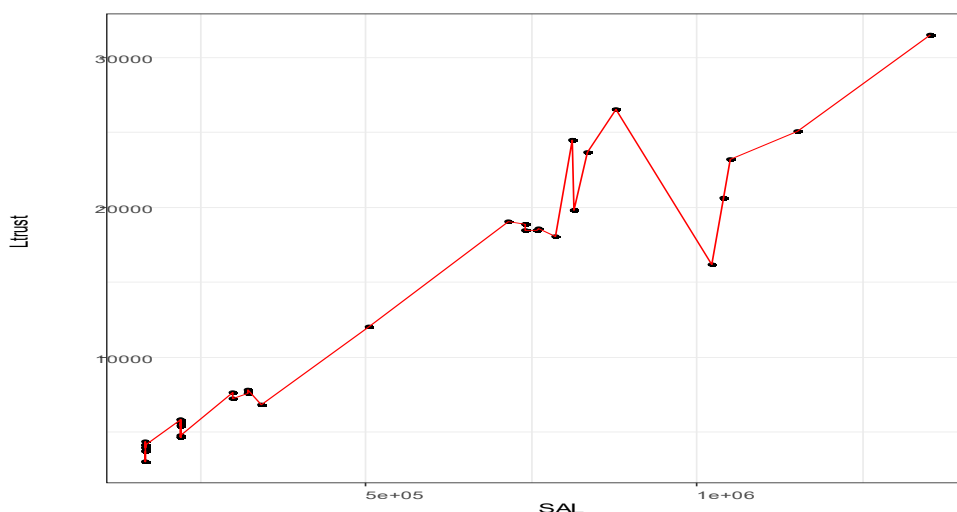


Figure 3 is a graph of the total service liabilities ( $L_{Trust}$ ) against annual salary of each employee ( $SAL$ ). The chart shows sudden humps at different point which is due to salary increase whenever the plan members are due for promotion to differing higher levels of service which

attract marked increase in the scheme members salaries. This has a significant effect on the value of their service liabilities.

**Figure 4**

Graph of  $L_{TRUST}$  against  $x$

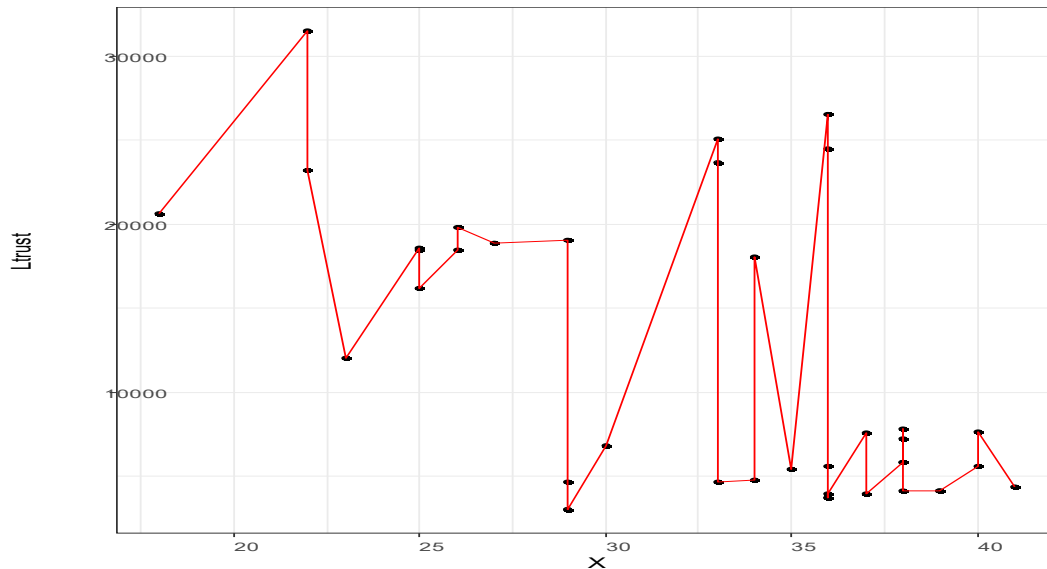


Figure 4 is a graph of total service liabilities ( $L_{Trust}$ ) against age  $x$ . The graph shows the estimated pension benefit expected to be paid by the scheme from the present to retirement as estimated using the trustee model.

**Figure 5**

Graph of  $L_{TRUST}$  against  $P_{TRUST}$

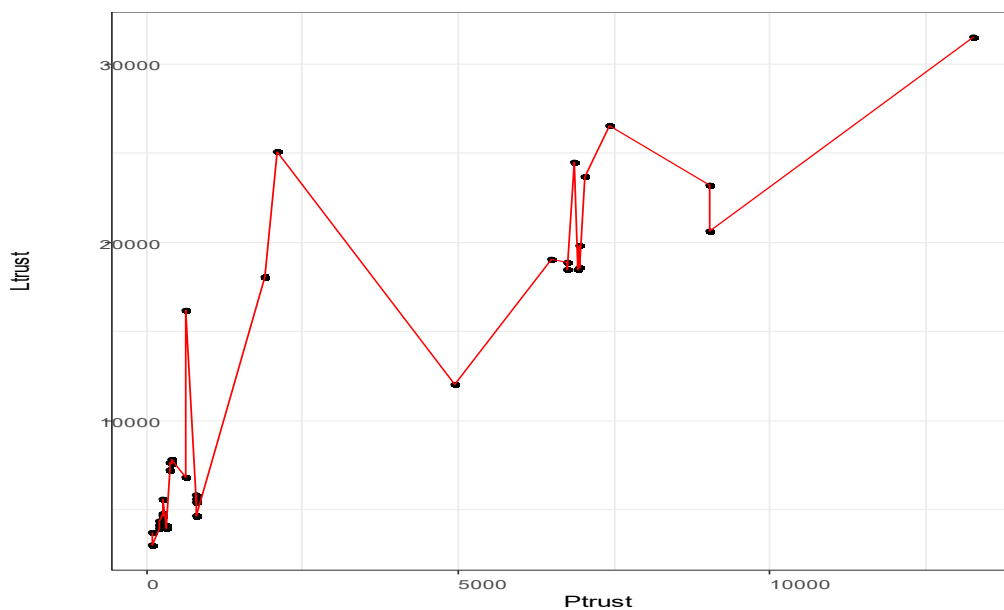


Figure 5 is the graph of total service liabilities ( $L_{Trust}$ ) against the respective past service



liability of the scheme members against ( $P_{Trust}$ ). The points of the liability are clustered from the origin and widens further as the trajectory progresses.

**Figure 6**

Graph of  $L_{TRUST}$  against  $a_x$

S

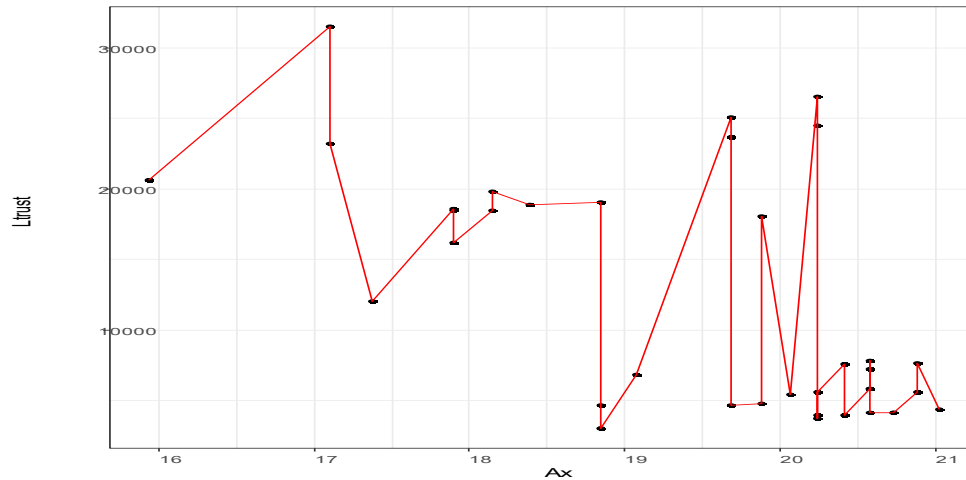


Figure 6 is a graph of service liability against the life annuity rate of each member of the scheme. The points are higher at some points above the origin and lower as the graph progress. This implies that they are projections of higher payment in the future and consequently retirement plan funding anticipates that over a long term, the contribution rate, administrative expenses and investment earnings less investment fees will be needed to cover benefit payments.

## Results and Discussion

### *Descriptive mathematical Analysis*

From the objective of the study, the column  $R$  in table 4 flows directly from the results stated below with the assumptions that:

$$(i) \ AR = \frac{d - p_g}{1 + p_g} \quad (45)$$

$$(ii) \ AF = \left[ 1 - \left( \frac{1 + p_g}{1 + d} \right) \right]^{AR} \quad (46)$$

where  $N$  is the expectation of life at retirement

and  $L_{Trust} \rightarrow 0$

It is sufficient to prove that:

$$AF = \left[ 1 - \left( \frac{1 + p_g}{1 + d} \right) \right]^{AR} \rightarrow 0 \quad (47)$$

under the condition that

$$(i) \quad R = \left[ 1 - \left( \frac{1 + p_g}{1 + d} \right) \right]^{\frac{N}{AR}} \quad (48)$$

$$\text{and (ii) observe that } AR = \left( \frac{(1 + d)}{1 + p_g} \right) - 1 \quad (49)$$

$$AR = \frac{1 + d - (1 + p_g)}{1 + p_g} \quad (50)$$

$$AR = \frac{1 + d - 1 - p_g}{1 + p_g} \quad (51)$$

$$AR = \frac{d - p_g}{1 + p_g} \quad (52)$$

where  $N$  is expectation of life at retirement

$$\text{Computationally } \frac{1 + p_g}{1 + d} < 1 \quad (53)$$

Again since  $N \in \mathbf{N}^+$ ,  $AR \in \mathbf{R}^+$  and specifically  $R < 1$ , then  $\frac{N}{R} \rightarrow \infty$

$$\text{Apparently } 1 - \left( \frac{1 + p_g}{1 + d} \right) < 1 \quad (54)$$

$$\text{Observe that if } |a| < 1 \quad (55)$$

$$\text{then } \lim_{n \rightarrow \infty} a^n = 0 \quad (56)$$

$$\text{Consequently, } \left[ 1 - \left( \frac{1 + p_g}{1 + d} \right) \right]^{\frac{N}{AR}} \rightarrow 0 \text{ and } AR \rightarrow 0 \quad (57)$$

Let  $\frac{1}{\theta} = \sigma$  and observe that if  $0 < \theta < 1$ , then  $\sigma$  is relatively bigger than  $\theta$ , that is  $\sigma > \theta$

$$\text{Consequently, } (\theta)^{-\frac{N}{AR}} = \frac{1}{(\theta)^{\frac{N}{AR}}} = \left[ \frac{1}{\theta} \right]^{\frac{N}{AR}} \quad (58)$$

$$(\theta)^{-\frac{N}{AR}} = \frac{1}{(\theta)^{\frac{N}{AR}}} = \frac{1}{\theta^{\infty}} = \frac{1}{\infty} = 0 \quad (59)$$

By the arguments in (58) and (59), we observe that as

$$\frac{N}{AR} \rightarrow -\infty$$

Since  $\left( 1 - \frac{1 + p_g}{1 + d} \right) < 1$  then we observe that  $\frac{1}{\left( 1 - \frac{1 + p_g}{1 + d} \right)}$  will be relatively bigger than

$$AF = \left( \frac{1 - \frac{1+P_g}{1+d}}{\left[ 1 - \left( \frac{1+p_g}{1+d} \right) \right]^{\frac{N}{AR}}} \right) \text{ and consequently, } = \left[ 1 - \left( \frac{1+p_g}{1+d} \right) \right]^{-\infty} = \frac{1}{\left[ 1 - \left( \frac{1+p_g}{1+d} \right) \right]^{\infty}} = \frac{1}{\infty} = 0 \quad (60)$$

Following the definitions in McNally & O'Connor (2018), the trustee valuation model is given

as follows

$$L_{Trust} = \left( \frac{k}{\theta} \right) \times (SAL \times (1 + SAL)^x) \times \left( \frac{1}{(1+d)^x} \right) \times \left( \frac{\left( 1 - \left( \frac{1}{1+A} \right) \right)^N}{A} \right) \quad (61)$$

Consequently, as  $AF$  is sufficiently small. That is  $AF \rightarrow 0$  then  $L_{Trust} = 0$  (62)

From the results obtained, the pension liability is zero and this may be surprisingly strange to the balance sheet consisting of assets and liabilities. Consequently, the detection of this phenomenon in McNally and O'Connor (2018) model presents a phantom of zero liability, and this is our *main contribution* in this work.

### Conclusion and Recommendations

From the results obtained, the pension liability is zero and this may be surprisingly strange to the balance sheet consisting of assets and liabilities. However, when the life table annuity replaces the annuity factor, the service liability is not vanishingly zero. Hence, this phantom effect resulting in total liability in being zero arouses an inquiry as to whether this current valuation scheme would lead to potential actuarial risk process for the pension trustees who are solely loaded with the core pension decision making responsibilities. The estimated parameters of the trustee model such as the service liability, past service liability, number of pensionable years, salary growth rate, ordinary annuity and life annuity of model was analysed. Of particular interest is the actuarial configurations in McNally and O'Connor (2018) as extended by Ogungbenle and Omede (2022) where the liability vanishes and this zero-liability detected represents the phantom in their valuation method. The annuity factor is calculated based on number of years an employee is expected to live post-retirement. If an employee retires, the number of years that he is expected to live post-retirement is projected. This is determined by mortality table which is actuarially calculated and compiled based on mortality experience and taking into account both the discount rate and expected pension increases but it may be adjusted to reflect assumptions on expected mortality experience. Retirement plan liabilities changes because of the resultant impact of income and expenses components. The modifications on pension accounting regulations which enforces employers to state the variation regularly and formally in valuation results between their defined benefit pension assets and liabilities on their balance sheet have advised investment managers of the pension uncertainties and potential risk

dynamics which the employers sponsoring such schemes are exposed to. Consequently, based on the results, the funding strategy is recommended and advised to be actuarially modified and audited at periodic intervals to confirm if the funding strategy has actuarially complied with the scheme's funding objectives and hence the system should pay sufficient attention to the existing fund's investment strategies entrenched by the fund trustees with a goal to generating yield for the fund. As future research direction, the study can be taken from the stochastic perspectives.

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# Impact of Firm-specific Factors on the Financial Performance of Nepalese Microfinance Institutions

Purna Man Shrestha

Mid-West University, Surkhet, Nepal

## Abstract

**Background:** Microfinance institutions (MFIs) are established with the aim of providing an opportunity to financially deprived people to make them financially independent and come out of poverty. To provide financial assistance to the targeted people, MFI must be able to improve their financial performance. Thus, the financial manager of MFI needs to identify the major factors that influence their financial performance.

**Objectives:** This paper aims to analyze the impact of firm-specific factors on the financial performance of Nepalese Microfinance Institutions (MFIs)

**Methods:** This paper has applied descriptive and causal-comparative research design. The annual panel data of 29 microfinance companies listed in the Nepal stock exchange for the period of 2010/11 to 2020/21 has been used. To identify the impact of firm-specific factors on the financial performance of Nepalese MFIs, an appropriate multivariate regression model is selected based on the result of the Breusch and Pagan Lagrangian multiplier test and the Hausman test.

**Results:** Using the fixed effect regression model, this paper found the significant influence of firm-specific factors on the financial performance of Nepalese MFIs. Further, this study found a significant positive impact on deposit ratio, management efficiency, and weighted average interest rate spread and a significant negative impact of asset quality on the financial performance of Nepalese MFIs.

**Conclusion:** This paper concluded that the financial performance of Nepalese MFIs could be improved by increasing the deposit ratio, management efficiency, and weighted average interest rate spread. On the other hand, the study also concluded that Nepalese MFIs should maintain a lower level of non-performing loans to achieve a higher level of financial performance.

**Keywords:** Financial performance, firm-specific factors, microfinance institutions, Nepal

**JEL Classification:** C33, G21, G30, L25

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## Correspondence:

Purna Man Shrestha  
purnaman.skt@gmail.com

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## Introduction

The financial services which are provided to low-income individuals or groups who are basically excluded from the banking system are known as microfinance (Morduch, 1999). In other words, it is a type of banking service provided to individuals, groups, or unemployed people who have no other access to financial services (Milana & Ashta, 2020). MFIs are established with the aim of providing an opportunity to financially deprived people to make them financially independent and come out of poverty (Bekalu et al., 2019). To achieve this aim, microfinance institutions provide financial support to make better the financial activities of poor people (Almas & Mukhtar, 2015). Therefore, microfinance also contributes to reducing the poverty of people in any nation (Amanu et al., 2021; Bekalu et al., 2019). It gives an idea to people to develop sustainable self-employment by providing various financial services (Anand & Kanwal, 2011).

Microfinance provides financial services to people who have no collateral for getting a loan from financial institutions, but they have strong willpower and indigenous skills for self-employment and income generation (Dhungana, 2018; Pareek et al., 2022). Thus, microfinance is one of the best ways to create self-employment (Dhungana, 2015; Shrestha, 2009). Empirical results (e. g., Chapagain & Dhungana, 2020; Fersi & Boujelbene, 2016; Mori et al., 2013) showed that MFI plays a significant role in self-employment and income generation, which ultimately help to reduce the poverty of people residing in any nation.

In order to provide the service to the targeted people and groups, MFIs must be financially strong. Financially strong MFI can provide its services to the target people and groups very smoothly and efficiently. These institutions should have profitable operations to improve their stability, sustainability, and growth (Agarwal & Sinha, 2010). Thus, the financial performance of MFIs is important. Empirical evidence (Dissanayake, 2012; Ngumo et al., 2017; Rani et al., 2022; Shkodra, 2019) showed that various internal and external factors have a significant influence on the financial performance of MFIs. Thus, the financial manager of MFI needs to identify the major factors that influence their financial performance. Therefore, this paper aims to identify the factors that have a significant influence on the financial performance of Nepalese MFIs.

The main objective of this paper is to analyze the impact of firm-specific factors on financial performance of Nepalese MFIs. This paper also aims to explain the relationship between firm-specific factors and financial performance of MFIs. Furthermore, this paper examined the explanatory power of firm-specific factors for explaining financial performance of MFIs.

## Review of Literature

Literature on finance (e. g. Almansour et al., 2019; Anand & Kanwal, 2011; Bekalu et al., 2019; Ebaid, 2009; Kyereboah-Coleman, 2007; Shkodra, 2019) documented that various internal and external factors have a significant impact on financial performance of microfinance institutions. In this issue Dissanayake (2012) scrutinized the determinants of financial performance of Sri Lankan MFI. The study used return on assets, return on equity, profit margin and operational self-sufficiency ratio as measures of financial performance. Using the regression analysis the author found significant positive impact of operating ratio, cost per borrower and debt equity ratio and not significant positive impact of personal productivity on all measures of financial performance.

Furthermore, Ngumo et al. (2017) investigated the impact of firm-specific factors on financial performance of MFI of Kenya. Based on the annual data of 7 MFI from 2011 to 2015, Ngumo et al. (2017) found a significant positive impact of capital adequacy, operational efficiency, firm size on financial performance whereas the impact of credit risk and liquidity risk found to be not statistically significant negative. On the other hand, Ashenafi and Kingawa (2018) analyzed the effect of internal and external factors on financial performance of MFI of Ethiopia. The author

used annual data of for the period of 2009 to 2013. Using the regression analysis the study found the significant financial positive impact of age and structure on financial performance. On the other hand, the study found not significant positive impact of gross domestic product and not significant negative impact of size and operational efficiency on financial performance. Shkodra (2019) investigated the factors affecting financial performance of MFI in Kosovo for the period of 2007 to 2016. The author used return on assets, profit margin, and operational self-sufficiency as financial performance. Based on the annual data of 12 MFIs for ten years, Shkodra (2019) found the significant positive impact of size and yield and negative impact of GDP on all measures of financial performance and positive impact of age and inflation of financial performance measured by return on assets and operational self-sufficiency.

Furthermore, Negash et al. (2020) also analyzed the internal and external determinants financial performance of MFIs in Ethiopia for the period of 2010 to 2018. The author found that size and capital assets ratio has a significant positive impact and earning ability has a significant negative impact, whereas gearing ratio and liquidity do not have a significant negative impact on financial performance. Likewise, the authors have found a significant positive impact of GDP and no significant impact of inflation on financial performance. The significant positive impact of GDP indicates that the financial performance of MFI increases as there is a growth in GDP. On the other hand, the no significant impact of inflation implies that there is a negligible role of inflation for determining the financial performance of MFIs in Ethiopia.

Likewise, in the context of Nepal, Chaulagain and Lamichhane (2022) found the loan lending system, regulatory environment, and information technology as the most influencing factors for demining financial performance. Furthermore, the authors found a positive association between loan lending system, regulatory framework, information technology, loan lending system, employee motivation, management system, effective risk management, and regulatory framework with financial performance.

Above mentioned empirical studies conducted in developed and developing countries suggests that financial performance of MFIs is affected by several internal and external factor but results are inconclusive. In Nepalese context the determinants of financial performance of MFIs are yet to be analyzed. The establishment of Small Farmer Development Project in 1979/80 by Agriculture Development Bank initiated the concept of microfinance in Nepal. Now the numbers of MFIs are increasing rapidly in Nepal and there are 53 microfinance companies listed in NEPSE till mid-July 2021. Nepalese microfinance institutions are providing financial services to low-income people in order to help their self-employment. In this scenario, Nepalese MFIs must have sound financial performance for delivering its service efficiently to the needy group of people. Several internal and external factors affect the financial performance of MFIs. Therefore, the management of MFIs should be able to identify the factors affecting financial performance. Thus, this study aims to analyze the impact of firm-specific factors on financial performance of Nepalese MFIs.

### **Materials and Methods**

In order to fulfill the objectives of the study, this paper has applied descriptive and causal comparative research design. The fact, status, and behavior of the variables under the study have been analyzed using descriptive research design. Similarly, the impact of selected firm-specific variables on financial performance of Nepalese MFIs has been analyzed using the causal comparative research design. Using the causal comparative research design the explanatory power of firm-specific factors for explaining financial performance of Nepalese MFIs has also been assessed.

The entire microfinance companies of Nepal listed on NEPSE till mid-July 2021 are the population of this study. All together 53 microfinance companies are listed on NEPSE till mid-July 2021 (NEPSE, 2021). Those microfinance companies are selected as samples which

have completed at least four consecutive year of operating till mid-July 2021. Out of these 53 microfinance companies; 29 microfinance companies fulfilled this criterion. Therefore, this study is confined on the 29 Nepalese MFIs.

The impact of firm-specific factors on financial performance of MFIs has been analyzed using secondary source of data. The required data for this study are collected from annual report of sample microfinance companies. This study used unbalanced panel data of 29 microfinance companies of Nepal from 2010/11 to 2020/21. To accomplish the aim of the study, the data related to return on assets (ROA), capital adequacy ratio (CAR), loan ratio (LR) and deposit ratio (DR) and management efficiency (ME) is acquired from the balance sheet and income statement of the selected microfinance companies. Likewise, basic data related to the assets quality (AQ) and weighted average interest rate spread has been collected from the key indicator of the microfinance companies provided in the annual report.

### Model Specification

This study has used financial performance of Nepalese MFIs as dependent variable. However, various measures of financial performance can be used, this paper has utilized return on assets (ROA) only as proxy of financial performance. The objective of this study is to identify the impact of firm-specific factors on the financial performance of Nepalese MFIs. Thus, this study used selected firm-specific variables as independent variables. The independent variables used in this paper are capital adequacy ratio (CAR), loan ratio (LR), deposit ratio (DR), management efficiency (ME), assets quality (AQ) and weighted average interest rate spread (IRS). Using these selected firm-specific independent variables and return on assets as dependent variable, this paper has estimated the multivariate regression model as specified below:

$$ROA_{it} = \beta_0 + \beta_1 CAR_{it} + \beta_2 LR_{it} + \beta_3 DR_{it} + \beta_4 ME_{it} + \beta_5 AQ_{it} + \beta_6 IRS_{it} + \varepsilon_{it} \quad (1)$$

Where,

$ROA_{it}$  = the return on assets of the MFI  $i$  for year  $t$ ,

$\beta_i$  = the coefficient of firm-specific variable to be estimated,

$CAR_{it}$  = the capital adequacy ratio of MFI  $i$  for year  $t$ ,

$LR_{it}$  = the loan ratio of MFI  $i$  for year  $t$ ,

$DR_{it}$  = the deposit ratio of MFI  $i$  for year  $t$ ,

$ME_{it}$  = the management efficiency of the MFI  $i$  for year  $t$ ,

$AQ_{it}$  = the assets quality of the MFI  $i$  for year  $t$ , and

$IRS_{it}$  = the weighted average interest rate spread of the MFI  $i$  for year  $t$ ,

$\varepsilon_{it}$  = the residual error term.

### Methods of Data Analysis

This paper has used STATA 12.0 software to analyze the data collected from 29 Nepalese MFIs for the period of 2010/11 to 2020/21. Using the STATA 12.0 software the result of descriptive statistics, correlation analysis and the result of multivariate regression analysis has been obtained. Since, this study is based on the panel data of 29 Nepalese MFIs, to evaluate the impact of independent variables on dependent variable, the appropriate multivariate regression model is selected from the result of Breusch and Pagan Lagrangian multiplier test and Hausman test. To select the appropriate model between pooled and random effect model Breusch and Pagan Lagrangian multiplier test is applied. Similarly, to select the appropriate model between fixed effect and random effect model Hausman test is applied.

### Operational Definition of Variables

This paper has used financial performance of Nepalese MFIs as the dependent variable and firm-specific factors as the independent variables. The operational definitions of these variables are presented in the following paragraphs and Table 1.

**Table 1***Operational Definition of Variables*

| SN | Variables                                   | Measurement                      | Type        |
|----|---|----------------------------------|-------------|
| 1  | Return on assets (ROA)                      | $ROA_{it} =$                     | Dependent   |
| 2  | Capital adequacy ratio (CAR)                | $CAR_{it} =$                     | Independent |
| 3  | Loan ratio (LR)                             | $LR_{it} =$                      |             |
| 4  | Deposit ratio (DR)                          | $DR_{it} =$                      |             |
| 5  | Management Efficiency (ME)                  | $ME_{it} =$                      |             |
| 6  | Assets quality (AQ)                         | $AQ_{it} =$                      |             |
| 7  | Weighted average interest rate spread (IRS) | $IRS_{it} = IRL_{it} - IRD_{it}$ |             |

**Return on Assets**

Financial performance of firm can be measured by various ratios. One of them widely used measures of financial performance is return on asset (ROA). It measures the ability of the management to generate income by utilizing company assets at their disposal. Further it shows how efficiently the resources of the company are used to generate the income (Khrawish, 2011). Thus, this paper has used ROA as proxy of financial performance of Nepalese MFIs. The ROA is obtained as:

$$ROA_{it} = \frac{NI_{it}}{TA_{it}} \quad (2)$$

Where,  $ROA_{it}$  is the return on assets of the MFI  $i$  at year end  $t$ .  $NI_{it}$  is the net income after tax of the MFI  $i$  at year end  $t$  and  $TA_{it}$  is the total assets of the MFI  $i$  at year end  $t$ .

This study has used firm-specific factors such as capital adequacy ratio (CAR), loan ratio (LR), deposit ratio (DR), management efficiency (ME), and weighted average interest rate spread (IRS) as explanatory variables. The definitions of these variables are presented in the following paragraphs.

**Capital Adequacy Ratio**

Total assets of the firm can be financed by debt and equity capital. How the assets of the firm is financed is important matter for the concern parties and it has significant impact on profitability. Capital adequacy ratio (CAR) shows the financing pattern of the total assets of the firm. It is simply the ratio of equity capital to total assets. Afriyie and Akotey (2012) and Kurawa and Garba (2014) found a significant positive relationship between capital adequacy ratio and financial performance. On the other hand, Alshatti (2015) and Ndoka and Islami (2016) found a negative association between capital adequacy ratio and financial performance. Therefore, in this paper has used CAR as one of the important explanatory variable. It is calculated as follows:

$$CAR_{it} = \frac{TE_{it}}{TA_{it}} \quad (3)$$

Where,  $CAR_{it}$  is the capital adequacy ratio of the MFI  $i$  at year end  $t$ .  $TE_{it}$  is the total equity of the MFI  $i$  at year end  $t$ , and  $TA_{it}$  is the total assets of the MFI  $i$  at year end  $t$ .

**Loan Ratio**

Another important firm-specific factor that determines the financial performance is loan ratio. Loan is the principal source of income of banks and is expected to have a positive impact on profitability. Loan ratio (LR) is the ratio of total loans to total assets. Other things remain constant, more deposits are transformed into loans which results the higher the interest margin and profitability. Alshatti (2015) found a negative effect of leverage ratio on banks financial

performance. Therefore, this paper has also used loan ratio as one of the independent variable which is calculated as follows:

$$LR_{it} = \frac{TL_{it}}{TA_{it}} \quad (4)$$

Where,  $LR_{it}$  is the loan ratio of the MFI  $i$  at year end  $t$ .  $TL_{it}$  is the total loan and advance of the MFI  $i$  at year end  $t$ , and  $TA_{it}$  is the total assets of the MFI  $i$  at year end  $t$ .

### Deposit Ratio

Deposit ratio (DR) is the ratio of total deposits to total assets. DR measures liquidity position of a bank. It is also considered to measure as a liability of bank toward its depositors. Deposits are the principal source of bank funding. The more deposits are transformed into more bank loans at the higher interest margin which helps to increase the bank profitability. DR is considered as an explanatory variable to measure bank profitability and deposits are expected to have positive impact on the profitability. It is obtained as follows:

$$DR_{it} = \frac{TD_{it}}{TA_{it}} \quad (5)$$

Where,  $DR_{it}$  is the deposit ratio of the MFI  $i$  at year end  $t$ .  $TD_{it}$  is the total deposit of the MFI  $i$  at year end  $t$ , and  $TA_{it}$  is the total assets of the MFI  $i$  at year end  $t$ .

### Management Efficiency

The management team of any organization has to create value of the firm. The efficiency of the management can be evaluated through how efficiently the management team of an organization has created output relative to capital. Thus, management efficiency (ME) is one of the major factors that affect the financial performance of the any organization. In this study the ratio of net income to total revenue is used to measure management efficiency, which is obtained as follows:

$$ME_{it} = \frac{NI_{it}}{TR_{it}} \quad (6)$$

Where,  $ME_{it}$  is the management efficiency of the MFI  $i$  at year end  $t$ .  $NI_{it}$  is the net income of the MFI  $i$  at year end  $t$ ,  $TR_{it}$  is the total revenue of the MFI  $i$  at year end  $t$ .

### Assets Quality

Assets quality is another important firm-specific factor that makes significant impact on financial performance of the MFIs. The assets of MFIs comprised of fixed assets, current assets, investments and portfolio of loan. Out of these assets of the portfolio of loan is the major earning assets of bank. Thus, assets quality of the bank is considered as the quality of earning assets i.e. portfolio of loan. The bad quality of loan has higher probability of becoming non-performing loan. Therefore, the ratio of non-performing loan to total loan is the best measures of assets quality of bank. Aduda and Gitonga (2011), Ndoka and Islami (2016) found an inverse impact of non-performing loans on the profitability whereas Afriyie and Akotey (2012), and Alshatti (2015) found a positive effect of non-performing loans on financial performance. Thus, it is considered a major determinant of the financial performance of Nepalese MFIs. It is measured as follows:

$$AQ_{it} = \frac{NPL_{it}}{TL_{it}} \quad (7)$$

Where,  $AQ_{it}$  is the assets quality of the MFI  $i$  at year end  $t$ .  $NPL_{it}$  is the non-performing loan of the MFI  $i$  at year end  $t$ , and  $LT_{it}$  is the total loan of the MFI  $i$  at year end  $t$ .



### Weighted Average Interest Rate Spread

The difference between average yield (interest rate) of a financial institution that is received from the loan and average interest rate that is paid by the financial institution on its deposit and borrowing is known as weighted average interest rate spread (IRS). It is the major determinant of financial performance of any financial institution (Kalsoom et al., 2016). Musah et al. (2018) and Karki (2020) found a significant positive impact of IRS on financial performance. Thus, this paper has also considered IRS as one of the major determinants of financial performance of MFI. It is obtained as follows:

$$IRS_{it} = IRL_{it} - IRD_{it} \quad (8)$$

Where,  $IRS_{it}$  is the weighted average interest rate spread of MFI  $i$  at year end  $t$ .  $IRL_{it}$  is the weighted average interest rate on loan of the MFI  $i$  at year end  $t$ , and  $IRD_{it}$  is weighted average interest rate on deposit and borrowing of the MFI  $i$  at year end  $t$ .

### Results and Discussion

In this section, the impact of firm-specific variables on financial performance of Nepalese MFIs has been analyzed. At the first part the descriptive statistics has been calculated. In the second part the relationship between firm-specific variables and financial performance has been identified through the correlation analysis. Finally, the impact of selected independent variables on dependent variable has been evaluated through the estimation of regression model.

#### Descriptive Statistics

The descriptive statistics of the variables under the study has been calculated using STATA 12.0 software. This study also aims to analyze the facts of the variables under the study; therefore, descriptive research design has been followed. Under this section the descriptive statistics, i.e., mean, standard deviation, minimum and maximum values of sample MFIs are calculated. The result of descriptive statistics is presented in Table 2.

**Table 2**

#### *Descriptive Statistics*

| Indicators | Mean   | Std. Deviation | Minimum | Maximum |
|------------|--------|----------------|---------|---------|
| ROA        | 1.962  | 1.577          | -5.301  | 8.874   |
| CAR        | 15.915 | 12.146         | 3.363   | 135.351 |
| LR         | 82.656 | 16.113         | 5.850   | 197.562 |
| DR         | 26.984 | 14.499         | 0.000   | 17.540  |
| ME         | 13.890 | 12.808         | -67.154 | 39.973  |
| AQ         | 1.694  | 1.886          | 0.000   | 12.324  |
| IRS        | 8.394  | 3.037          | 0.000   | 17.210  |

*Source: Calculation based on data collected by the author from the annual report of the sample MFIs.*

As the result depicted in Table 2 very wide range of financial performance of Nepalese MFIs measured by ROA is observed. It ranges from minimum -5.30 percent to maximum 8.87 percent with average value of 1.9618 percent. This indicates that there exit a wide variation in financial performance of Nepalese MFI.

Similarly, the result presented in Table 2 also documents a wide range of all independent variables under the study. The minimum and maximum value of capital adequacy ratio (CAR) is 3.36 percent and 135.35 percent respectively. Another independent variable of the study, i.e., loan ratio (LR) has minimum value of 5.85 percent and maximum value of 197.56 percent with average value of 52.6565 percent. This also indicates that the loan of Nepalese MFI also quite



varies.

Likewise, deposit ratio (DR) shows the minimum value of 0 and maximum value of 17.54 percent with average value of 26.9843 percent. In the same way, a large variation in management efficiency, i.e., the ratio of net income to total revenue has been observed. It ranges from minimum value of -223.86 percent of maximum value of 39.97 percent.

On the other hand, another determinant of financial performance of MFI taken in the study, i.e., assets quality (AQ) shows the minimum and maximum value of 0 and 12.32 percent respectively and weighted average interest rate spread shows the minimum and maximum value of 0 and 17.21 percent respectively. This also indicates that there is wide variation in interest rate of Nepalese MFIs.

### Correlation Analysis

The relationship between financial performance of Nepalese MFIs and firm-specific variables has been analyzed through the correlation analysis. In this section correlation of ROA with firm-specific factors of the study, i.e., CAR, LR, DR, ME, AQ and IRS is estimated. The result of correlation analysis is presented in Table 3.

**Table 3**

#### *Correlation Results*

| Indicators | ROA    | CAR    | LR     | DR     | ME    | AQ    | IRS   |
|------------|--------|--------|--------|--------|-------|-------|-------|
| ROA        | 1.000  |        |        |        |       |       |       |
| CAR        | -0.167 | 1.000  |        |        |       |       |       |
| LR         | 0.167  | -0.273 | 1.000  |        |       |       |       |
| DR         | 0.250  | -0.287 | 0.097  | 1.000  |       |       |       |
| ME         | 0.662  | -0.053 | 0.233  | -0.095 | 1.000 |       |       |
| AQ         | -0.133 | 0.001  | 0.062  | 0.058  | 0.001 | 1.000 |       |
| IRS        | 0.406  | -0.157 | -0.070 | 0.341  | 0.305 | 0.063 | 1.000 |

*Source: Calculation based on data collected by the author from the annual report of the sample MFIs.*

The result presented in Table 3 illustrates that there is a positive relationship of return on assets (ROA) with LR, DR, ME and IRS and negative relationship with CAR and AQ. This relationship indicates that as the LR, DR, ME and IRS increases the financial performance of Nepalese MFIs also increases whereas the financial performance of Nepalese MFIs decreases as the CAR and AQ decreases. Similarly, CAR shows positive relationship with AQ and negative relationship with LR, DR, ME and IRS. Another independent variable LR shows positive relationship with DR, ME and AQ and negative relationship with IRS. Likewise, DR shows the negative relationship with ME and positive relationship with AQ and IRS. Furthermore, ME shows positive relationship with AQ and IRS and AQ shows positive relationship with IRS.

### Model Estimation

Since, this study is based on panel data of 29 Nepalese MFIs listed in Nepal Stock Exchange (NEPSE) from 2010/11 to 2020/21, the model has been estimated selecting the appropriate model among the pooled, fixed effect or random effect model. To select the appropriate model between pooled or panel regression model, Breusch and Pagan Lagrangian multiplier test for random effects is applied. Table 4 shows the result of the Breusch and Pagan Lagrangian multiplier test for random effects.

**Table 4***Result of Breusch and Pagan Lagrangian Multiplier Test for Random Effects*

| Indicators       | Var                              | SD = sqrt (Var)                     |
|------------------|----------------------------------|-------------------------------------|
| ROA              | 2.4994                           | 1.5809                              |
| E                | 0.7385                           | 0.8594                              |
| U                | 0.3544                           | 0.5953                              |
| Test: Var(u) = 0 | chibar <sup>2</sup> (01) = 67.95 | Prob > chibar <sup>2</sup> = 0.0000 |

Source: Calculation based on data collected by the author from the annual report of the sample MFIs.

The result shown in Table 4 shows the chibar<sup>2</sup> value of 67.95 significant at 1 percent level of significance (probability value of 0.000). The significant chibar<sup>2</sup> value rejects the null hypothesis that the pooled regression model is appropriate. Therefore, the result of Breusch and Pagan Lagrangian multiplier test suggest that the given set of data should be analyzed by applying fixed or random effect model. Thus, the paper further used Hausman test to select the appropriate model between the fixed effect and the random model. Table 5 shows the result of Hausman test.

**Table 5***Result of Hausman Test*

| Indicators           | (b)Fixed Effect | (B)Random Effect        | (b-B) Difference | sqrt(di-ag(V <sub>b</sub> -V <sub>B</sub> )) |
|----------------------|-----------------|-------------------------|------------------|--|
| CAR                  | 0.0027          | 0.0002                  | 0.0025           | 0.0011                                       |
| LR                   | -0.0067         | -0.0041                 | -0.0026          | 0.0011                                       |
| DR                   | 0.0515          | 0.0389                  | 0.0126           | 0.0056                                       |
| ME                   | 0.0527          | 0.0521                  | 0.0006           | 0.0012                                       |
| AQ                   | -0.0826         | -0.1011                 | 0.0185           | 0.0158                                       |
| IRS                  | 0.0787          | 0.0639                  | 0.0147           | 0.0089                                       |
| $\chi^2 (5) = 14.12$ |                 | Prob> $\chi^2 = 0.0283$ |                  |  |

Source: Calculation based on data collected by the author from the annual report of the sample MFIs.

The result of Table 5 shows the value of  $\chi^2$  14.12 significant at 5 percent level of significance (probability value of 0.0283). The significant value of  $\chi^2$  rejects the null hypothesis, i.e., random effect model is appropriate and accepts the alternative hypothesis, i.e., fixed effect model is appropriate. Based on the result of Hausman test, this paper has estimated the regression model using fixed effect model and analyzed the impact of firm-specific variables on financial performance of Nepalese MFI. The result of fixed effect model is presented in Table 6.

**Table 6***Average Slope Coefficients and Corresponding t-Value from Fixed-effects (within) Regression*

| Variable | Coefficient | Std. Error | t-statistics | p-value |
|----------|-------------|------------|--------------|---------|
| CAR      | .0026828    | .004636    | 0.58         | 0.564   |
| LR       | -.0067223   | .0044371   | -1.52        | 0.131   |
| DR       | .0515479    | .008965    | 5.75         | 0.000   |
| ME       | .0527772    | .0039389   | 13.40        | 0.000   |
| AQ       | -.0825725   | .0416945   | -1.98        | 0.049   |
| IRS      | .0786981    | .0274691   | 2.86         | 0.005   |

|                                  |                    |         |                   |       |
|----------------------------------|--------------------|---------|-------------------|-------|
| Cons.                            | -.1251443          | .498451 | -0.25             | 0.802 |
| R <sup>2</sup> : within = 0.6007 | F(6, 183) = 45.89  |         | Prob > F = 0.0000 |       |
| F test that all ui=0:            | F (29, 183) = 4.56 |         | Prob > F = 0.0000 |       |

*Source: Calculation based on data collected by the author from the annual report of the sample MFIs.*

As per the result presented in Table 6, it is observed that capital adequacy ratio (CAR), deposit ratio (DR), management efficiency (ME), and weighted average interest spread rate (IRS) have positive and loan ratio (LR) and assets quality (AQ) has negative impact on financial performance measured by return on assets (ROA) of Nepalese MFIs. Likewise, the coefficients of all independent variables except CAR and LR are found to be significant. It indicates that there is a significant impact of firm-specific variables (Except CAR and LR) on the financial performance of Nepalese MFIs. The insignificant influence of CAR and LR contradict with the findings of Afriyie and Akotey (2012), Kurawa and Garba (2014), Alshatti (2015) and Islami (2016).

Furthermore, the coefficients of DR, ME and IRS are found to be positive and significant at 1 percent level of significance and coefficient of AQ is found to be negative and significant at 5 percent level of significant. It is, therefore, can be concluded that there is a significant positive influence of deposit ratio, management efficiency and weighted average interest rate spreads and significant negative influence of assets quality on financial performance of Nepalese MFIs. The positive influence of IRS is corroborating with the findings of Musah, Anokye and Gakpetor (2018) and Karki (2020). Likewise, the negative influence of AQ is similar with the findings of Aduda and Gitonga (2011), Ndoka and Islami (2016) and contradict with the findings of Afriyie and Akotey (2012), and Alshatti (2015).

The significant positive influence of deposit ratio, management efficiency and weighted average interest rate spreads indicates that Nepalese MFIs should improve these firm-specific factors to achieve higher financial performance. Likewise, the significant negative influence of assets quality, i.e., the ratio of non-performing loan to total loan indicates that Nepalese MFIs should maintain the lower level non-performing loan as far as possible to have a better of financial performance. The finding of this paper is similar with the findings of Dissanayake (2012), Ngumo, et al. (2017), and Shkodra (2019).

Finally, the value of R<sup>2</sup> (within) 0.6007 indicates that the independent variables selected in this paper have 60.07 percent influences on the dependent variable, i.e., the financial performance of Nepalese MFIs. Likewise, the value of F (6, 183) 45.89 (p-value of 0.000) indicates that the estimated model is the best fitted model. Furthermore, the value of F test that all *ui* is equal to zero, i.e., F (29, 183), 4.56 (p-value of 0.000) indicates that there is significant difference between at least some individual Nepalese MFIs.

### Conclusion and Recommendation

With the aim of analyzing the impact of firm-specific factors on financial performance of Nepalese MFIs this study has been carried out. For this purpose, six selected firm-specific factors namely capital adequacy ratio (CAR), loan ratio (LR), deposit ratio (DR), management efficiency (ME), and weighted average interest rate spread (IRS) has been considered as the explanatory variables and return on assets (ROA) is used as the measures of financial performance of Nepalese MFIs. From the analysis this study concludes that firm-specific factors plays significant role for explaining the financial performance of Nepalese MFIs.

The major conclusion of this paper is that among the six firm-specific factors selected in this study deposit ratio (DR), management efficiency (ME), assets quality (AQ) and weighted average interest rate (IRS) has significant impact on financial performance of Nepalese MFI. Further, this paper concludes that there is a significant positive impact of deposit ratio, management efficiency and weighted average interest rate spread and significant negative impact of assets

quality on financial performance of Nepalese MFIs. Thus, Nepalese MFIs should improve their deposit ratio, management efficiency and weighted average interest rate spread for better financial performance. Similarly they should be able to maintain lower level of non-performing loan to increase the financial performance.

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## Perceptions of Employability of Undergraduate Business Program

### Graduates: A Qualitative Analysis

Santosh Kumar Gurung\*, Ramkrishna Chapagain\*, Bandana Godar Thapa\*\*

\*School of Business, Pokhara University, Pokhara, Nepal

\*\*Department of Economics, Prithvi Narayan Campus, Pokhara, Nepal

#### Abstract

**Background:** Students' perspective on graduate employability is an essential aspect to consider as they are the primary stakeholders of higher education institutions. Therefore, exploring graduates' perspectives on their employability and considering their opinions when designing policies and programs to improve graduate employability is crucial. However, little attention has been paid to graduates' perspectives on their employability.

**Objectives:** This paper explored graduates' perceptions of employability, the labour market, and their views on academic credentials and employability skills in obtaining and retaining employment. The paper also examined the role of business schools in enhancing employability and how universities have prepared graduates to enter the labour market in the context of the human capital approach.

**Methods:** The study adopted a qualitative approach using semi-structured interviews with a small sample of 38 undergraduate students from two different business programs who graduated from the constituent college of Pokhara university in 2019 and 2021 using purposive sampling. The interviews were designed to elicit in-depth responses from the participants and to allow them to share their experiences and insights. The study used the thematic analysis approach to analyze the data, which involved identifying patterns and themes within the data. The transcripts of the interviews were carefully reviewed and analyzed, and themes were generated based on the recurring patterns and ideas expressed by the participants.

**Results:** The thematic analysis demonstrated that graduates understood employability as becoming employable with the potential of employability skills. Graduates viewed possessing academic credentials as one of the key benefits of becoming employable in the competitive and congested graduate labour market. The study further illustrated that employers expect both discipline-specific knowledge and soft skills from graduates. The data on the role of business schools in enhancing employability suggested that although many graduates felt that business schools could provide theoretical knowledge, the schools need to pay more attention to practical-based knowledge, especially soft skills.

**Conclusion:** The study findings have provided insights into how recent graduates comprehend employability, view the current labour market and position their academic credentials in employability. The analysis has further demonstrated that students increasingly view their employability as the relative positional competition for labour market resources, which appears to have a bearing on how they perceive the role of credentials in their employability. The findings have further shown that employers expect both sides of graduate potential: strong academic credentials and employability skills. Therefore, graduates increasingly see the need to develop broader employability, which incorporates building strong academic credentials and employability skills and competencies outside the formal learning context. The study findings have implications for business schools, policymakers and researchers within the broader discourse of the knowledge-driven economy.

**Keywords:** Business students, employability, perception, qualitative analysis

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#### Correspondence:

Santosh Kumar Gurung  
f18santoshg@iima.ac.in

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## Introduction

The issue of graduate employability has become a critical concern for various stakeholders, including business students, higher education institutions (HEIs), employers, policymakers and scholars. Recent studies have highlighted the challenges that graduates face in securing employment, especially in the face of shifting demands in the labour market (Calvo & Garcia, 2021; Mainga et al., 2021; Mgaiwa, 2021; Uddin, 2021). As a result, many emerging and developed economies have made the employability of graduates a policy priority (Calvo & Garcia, 2021; Mgaiwa, 2021). In Nepal, for example, the higher education policy emphasizes the need for graduates to possess employability skills relevant to the needs of the labour market (Bajracharya, 2020). Likewise, in other countries, there is a growing recognition of the importance of equipping graduates with broader competencies and skills beyond academic credentials to enhance their employability (Berko et al., 2021). Therefore, the employability of business graduates has been a significant focus of attention for many governments/policymakers, HEIs, employers, and students themselves (Romgens et al., 2020).

It is evident from the research that although employability skills are considered crucial for new graduates' success, many undergraduates fail to develop them during their time at university (Scott et al., 2019; Jackson & Edgar, 2019; Amoroso & Burke, 2018). This is mainly because universities and business schools focus primarily on discipline-specific knowledge and skills, neglecting the essential skills required for the workforce (Mello et al., 2021; Jackson & Edgar, 2019; Teng et al., 2019; Virtanen & Tynjala, 2019; Amoroso & Burke, 2018). This lack of attention to developing employability skills and the disconnect between what is taught in universities and what is required in the workforce poses a significant challenge for students, employers and the education system. It is essential to incorporate teaching and learning methods that develop students' skills, behaviours and traits needed for long-term success in the workplace (Hossain et al., 2020). To address this challenge, universities and business schools must take a more practical approach by integrating real-world management practices into their curricula. They should provide students opportunities to develop practical skills and behaviours through internships, work placements and experiential learning opportunities (Thomas & Ambrosini, 2021). This would help students better understand the practical applications of their academic knowledge, and employers would be more inclined to hire work-ready graduates (Amoroso & Burke, 2018).

Recent education and employment policy have highlighted the importance of graduate employability in the knowledge-driven economy. New graduates need to continuously manage their employability and secure careers in an ever-challenging and global labour market, understanding and exploring the student perspective of how higher education (HE) becomes crucial. However, there is a lack of research and understanding of how students view their employability transition from education to the labour market (Donald et al., 2019; Jackson, 2015; Tymon, 2013). This career transition is a significant milestone that requires scholarly attention, as it can affect a graduate's career (Onyishi et al., 2015; Pinto & Ramalheira, 2017). The limited empirical evidence relating to students' perceptions of their transition into the labour market highlights the need for further research. The dearth of literature on students' perspectives on employability and the transition from education to the labour market presents a gap in our understanding. Therefore, it is essential to fill this gap to improve graduate employability and prepare students for successful careers in the global labour market.

The motivation for this study emanated from understanding undergraduates' perception of employability because students' perspective on graduate employability is an essential aspect to consider as they are the primary stakeholders of higher education institutions. Further, graduates' notion of employability and transition from higher education into the labour market

is yet to be articulated (Donald et al., 2017). It is essential to take into consideration graduates' perspectives on their employability as they are the ones who have gone through the education system and are looking to enter the job market. Their experiences and opinions can provide valuable insights into educational programs' effectiveness and ability to prepare graduates for the job market. Moreover, graduates' perspectives on employability can provide policymakers with a better understanding of the current job market's demands and trends. This can lead to development of more effective policies that can better support graduates in their transition from education to employment. Additionally, employers can also benefit from understanding graduates' perspectives on employability. It can help them identify the skills and competencies most valued by graduates and adapt their recruitment strategies accordingly. Therefore, exploring graduates' perspectives on their employability and considering their opinions when designing policies and programs to improve graduate employability is crucial.

The expansion of higher education in Nepal has increased the number of graduates entering the job market (University Grants Commission [UGC], 2018). However, there is a lack of qualitative exploration of the linkage between the demand and supply of graduates, especially in the context of the School of Business at Pokhara University (Paudel & Yadav, 2011). This study aims to address this gap by exploring how business graduates in Nepal perceive their employability using a qualitative approach. The study explored how graduates understand employability and the current transformations in the labour market. Additionally, the study examined how graduates perceive their academic credentials in the context of being employable, the expectations of employers in the current job market and the role of business schools in enhancing graduate employability. The study's findings can provide insights into how higher education institutions in Nepal can better prepare their graduates for the labour market and enhance their employability. By addressing these objectives, the study can contribute to the literature on graduate employability and provide practical implications for policy-makers, HEIs and industry stakeholders.

### **Review of Literature**

A considerable number of studies on graduate employability have been conducted recently. For instance, Kassa (2022) investigated the level of competency among Woldia University business graduates as a moderating factor in the graduates' employability. A cross-sectional study design and quantitative methods were used for this investigation. The information was gathered through surveys filled out by 223 recent business school graduates. The study highlighted the importance of having academic credentials and the necessary competencies and confidence to succeed in the job market. The findings suggest that universities should focus on developing their graduates' soft skills, such as English proficiency and promoting independence and competence. Similarly, Mainga et al. (2021) examined business students' perceptions of their employability skills at graduation. A survey was administered to 189 fourth-year business students. The study identified communication, learning, positive attitudes and behaviours and problem-solving skills as the most important employability skills for business graduates to secure entry-level positions. The study also highlighted the need for continuous improvement in creativity, innovation and conflict-resolution skills. Graduates need to focus on self-directed lifelong learning and adapt to the changing demands of the labour market. The study emphasized the role of student-centred learning methods in developing employability skills and suggested that universities should provide opportunities for students to acquire these skills.

Likewise, Hossain et al. (2020) examined students' perceptions of employability skills. To examine the hypotheses, a quantitative positivist approach was used. Respondents to a survey on employability determinants' attitudes among business graduates from two colleges in a developing nation. The results demonstrate a positive relationship between employability and

soft and hard skills. The study also found that graduates' employability is positively affected by internship experiences and their perception of the relevance of their academic courses. Moreover, the study suggests that business schools should provide more opportunities for experiential learning and internships to enhance students' soft skills.

The study recommends that policymakers, educators, and employers work together to improve the employability of graduates by designing curricula that include practical training, soft skills development and experiential learning opportunities. Furthermore, Succi and Canovi (2020) examined and compared employers' and students' perspectives on the value of soft skills in various European nations. The study's findings suggest that soft skills are becoming increasingly important in the workplace, and students must develop these skills to enhance their employability. Collaboration between employers and higher education institutions can facilitate this process by providing students with the necessary training and resources to build these skills.

Relatively little attention has been paid to how Nepal's higher education institutions affect the employability of their graduates. For example, Sharma et al. (2022) have used a sequential explanatory mixed methods research design in two phases to explore employability factors and their roles in the civil, architect, computer, electrical, electronics, mechanical and environmental engineering streams. The first phase of the study revealed that personal attributes, core attributes, self-management and process attributes, and career guidance as four factors of employability. Similarly, the second phase of the qualitative case study revealed that the opportunities for exposure, mentorship, internship, and project work in architecture were more significant than that of the computer, civil, and mechanical streams. The findings suggest that various factors contribute to employability, such as personal attributes, core attributes, self-management and process attributes, and career guidance. Additionally, the study highlighted the importance of opportunities for exposure, mentorship, internship, and project work in specific engineering streams, such as architecture. Without these opportunities and employability skills development, students may face challenges in their work transition and future careers. This study underscores the importance of integrating employability skills development into engineering education and providing students with practical experience and mentorship opportunities.

Similarly, Sharma and Bhattarai (2022), has carried qualitative study using primary data collected through FGD (Focused Group Discussion) from 56 vocational teachers to explore teachers' understanding of the strategies and methods that need to be applied to strengthen students' employability skills. The findings suggest that vocational teachers understand the importance of employing specific strategies and methods to develop students' employability skills, such as active participation during small group activities, frequent practices on role play, simulation, case study and problem-solving activities. The study highlighted the need for policymakers, school management, vocational teachers, and employers to shift the paradigm from classroom-based theoretical learning practices to workplace-based learning practices, such as apprenticeship programs to enhance students' employability skills. Additionally, the study suggests the need for flexibility in curricula and active engagement of employers at every step of vocational learning practices. This study emphasized the importance of collaboration among various stakeholders to ensure that students are adequately prepared for the workplace and possess the necessary employability skills to succeed.

Likewise, Bhandari et al. (2021) studied business graduate students' professional skills and found that employers search for professional qualities in applications. Both hard and soft skills are sought after by employers when hiring new employees from colleges and universities. The study found that employers look for hard and soft skills when hiring new employees from colleges and universities. Hard skills refer to the technical skills and knowledge required

for a specific job. In contrast, soft skills refer to interpersonal skills, communication skills, and other personal attributes that enable individuals to work effectively in teams and adapt to new situations. The employers identified several professional qualities they sought in the application, including problem-solving, critical thinking, communication, leadership, teamwork, and adaptability. The study also found that business graduates students generally possess strong hard skills but must develop their soft skills to meet employers' expectations. The study's findings suggest that business schools must focus more on developing students' soft skills to enhance their employability in the labour market. It also highlighted the importance of aligning academic programs with the expectations of employers to prepare better graduates for the workforce. In conclusion, the study supports the previous study's findings regarding the importance of soft skills in enhancing graduates' employability. It emphasized the need for business schools to incorporate more opportunities to develop students' soft skills to better align with employers' expectations and meet the labour market demands.

In line with the above results, Devkota et al. (2022) looked at how employers see graduates' professional skills and found that employers want graduates to have soft and hard skills. The study also found that adaptability, learning, conflict resolution, and teamwork are some of the most important skills employers seek. The study found that employers value both soft and hard skills in graduates. Hard skills, such as technical knowledge and expertise, were necessary to perform job-related tasks. However, employers also highlighted the importance of soft skills, such as adaptability, learning, conflict resolution and teamwork. The employers in the study emphasized that graduates need to have the ability to learn and adapt to new situations quickly, as workplaces are constantly evolving. Conflict resolution skills were also seen as crucial in the workplace, as managing conflicts effectively is essential for maintaining a positive work environment. Teamwork was also highlighted as a crucial skill for graduates, as most workplaces require employees to work collaboratively with others. In conclusion, the findings align with the previous studies, indicating the importance of soft skills in enhancing graduates' employability. The study emphasized the need for academic institutions to focus on developing students' soft skills alongside their hard skills to prepare them for the demands of the workplace.

Likewise, Silwal and Bhatta (2017) examine the effectiveness of VET (Vocational Education and Training) programs in job creation among youths in Nepal. A descriptive survey design comprising six urban districts of the country in 2 different occupations: Mason and Solar Technician, with a population of 226 VET graduates, was surveyed in this study. The major findings revealed that significant numbers of the graduates have indicated that their present job is very much related to the occupation they were trained in. Most of the interviewed graduates were satisfied with their current job and income. The study found that many VET (Vocational Education and Training) graduates reported that their present job is very much related to the occupation they were trained in. This suggests that the VET programs effectively provided graduates with the necessary skills and knowledge to perform job-related tasks. The study's findings suggest that VET programs can effectively create job opportunities for youths in Nepal. VET programs can help graduates enter the job market and find employment in their training field by providing them with the necessary skills and knowledge. Overall, the study highlighted the importance of VET programs in creating job opportunities for youths in Nepal. The study's findings suggest that VET programs can effectively provide graduates with the necessary skills and knowledge to enter the job market and find employment in their training field.

Shrestha (2014) also investigated employers' and students' perspectives of their talents to determine their readiness for the workforce and employability. There was a lack of confidence in graduates' abilities, which affected their ability to work in the business sector. Analytical and



communication abilities were found to be areas with room for improvement. According to the findings, business schools must meet employers' needs and expectations. A graduate's theoretical knowledge and viewpoint are adequate, but they must gain some of the talents and qualities companies seek in candidates. The study found that employers and students had different perceptions of graduates' employability and readiness for the workforce. Employers lacked confidence in graduates' abilities, particularly their analytical and communication skills. These skills were identified as areas with room for improvement. The study also found that business schools must meet employers' needs and expectations. Graduates' theoretical knowledge and perspective were deemed adequate, but they needed to gain some of the talents and qualities that companies seek in candidates. Therefore, the study recommended that business schools provide practical training and develop graduates' soft skills, such as communication, teamwork and problem-solving. Overall, the study's findings highlighted the importance of bridging the gap between employers' expectations and graduates' skills. The study suggests that business schools must provide theoretical knowledge, practical training, and development to enhance graduates' employability and readiness for the workforce.

Similarly, Sthapit (2014) analyzed new undergraduate business students' job prospects and competency in the context of job creation in commercial banks in Nepal. The study used a mixed methodological approach that combined secondary and observational data. The study's key findings suggest a gap between the demand and supply of jobs in banks, leading to unemployment among management graduates. Additionally, there seems to be a competency gap due to the education and teaching-learning systems, which may hinder graduates from acquiring the necessary skills to succeed in the job market. Finally, the study concluded that it is challenging for graduates to transition from college to the job market due to a lack of competency and necessary skills. The study highlighted the need for a more comprehensive approach to addressing the challenges facing new graduates in the job market. It suggests that a focus on improving the education and teaching-learning systems, providing more opportunities for practical training and skill-building, and promoting closer collaboration between academia and industry could help bridge the gaps and improve the employment prospects of new graduates.

Similarly, HEIs in Nepal have also made various efforts to identify their graduates' employment status through tracer studies. A thorough review of tracer studies of selected Quality Assurance and Accreditation (QAA) certified HEIs was done. For example, the tracer study report of Gupteshwor Multiple Campus, Tribhuvan University (2018) concluded that the graduates' entrepreneurial and problem-solving skills are necessary for the current economy. Higher education institutions must focus on new non-credit courses to increase graduates' employability. In addition, the tracer study report of Kanya Campus, Tribhuvan University (2018) revealed that skills such as research, information technology, and problem-solving skills should be enhanced for the employability of graduates. Further, graduates should be assisted with career counselling workshops and job placements. Furthermore, tracer study reports of Prithvi Narayan Campus, Tribhuvan University and School of Business, Pokhara University revealed that the programs offered by the institution contribute to imparting personal and professional requirements of the graduates. However, the institutions need to improve at imparting job-related skills required by the graduates in the labour market (Prithvi Narayan Campus, 2017; School of Business, 2018). Similarly, a tracer study report of Bal Kumari College, Tribhuvan University (2017) concluded that higher education institutions in Nepal should identify skills and competencies that students must learn to meet the workforce requirements. Similarly, a tracer study report of Kathmandu University, School of Education (2017) clinched that the graduate enjoyed an excellent teacher-student relationship and had a top-notch teaching-learning environment. However, most

graduates felt that the school only provided a small number of courses and that there needed to be more options for elective studies. The school's curriculum fell short of what graduates expected regarding professional requirements. Most graduates' programs/courses were not interdisciplinary, and the library resources needed to be updated because no journals were available for study. Consequently, the graduates may need help finding a suitable job with limited courses and may not see the opportunity to hone the necessary skills required in the job market. In the same way, the tracer study report of Janapriya Multiple Campus, Tribhuvan University (2015) revealed that the academic courses offered to the students are satisfactory. To a great extent, these courses develop their communication and teamwork skills. However, the graduates were somewhat unsatisfied with research, Information Technology (IT), and entrepreneurship skills, which are crucial for today's economy. Some graduates also reported not being satisfied with their current job because they want to sustain a career and shift jobs according to their skills and knowledge.

In the context of Nepalese higher education institutions, these tracer studies of graduates were restricted to learning about the graduates' jobs and post-graduate status. These studies were not concerned with knowing only the employment status of graduates. Further, these studies have not highlighted employers' requirement for practical abilities and skills in the labour market and whether HEIs teach these competencies and skills to students during the study to improve graduates' employability. The opinions of students regarding the employability abilities of graduate students are, however, seldom ever examined in the study. The body of knowledge regarding graduate employability and the skills and abilities needed by recent graduates as they transition into the workforce is seriously lacking. This study interviewed business graduates to understand the essential employability skills required for work performance, the extent to which such abilities are taught in college, and what employers anticipate of graduates regarding employability skills. Although widely debated in various public settings, graduate employability has not been systematically studied. To fill this gap, this exploratory study was conducted. Adopting a qualitative approach, which enabled contrasting the opinions and perceptions of business graduates to ascertain significant perception gaps was innovative in this study.

The present study is underpinned by the theoretical assumption that higher education contributes significantly to enhancing the collective stock of knowledge, skills, and competency of graduating students and enriches their employability skills that ultimately lead to graduate employability, a widely accepted assumption of the human capital theory (Becker, 1962). Similarly, the capacity of a graduate to obtain work is heavily influenced by their human capital, as noted by Fugate, Kinicki and Ashforth (2004) in their model of graduate employability. These factors include a person's age (as well as their education and work experience), job performance, and the organization in which they work. They contend that education and experience—two of the numerous components of human capital—are the best indicators of future professional success. Therefore, the study employed the framework of human capital theory on which the discussion of employability has been built. The human capital theory proposed by Becker (1962) explains the relationship between education and the labour market. Investment in education and training is evaluated, like any other investment, concerning its rate of return. The theory proposes a sequence of causal relationships linking (1) investment in education and training, (2) skill development, (3) increased productivity, and (4) increased employability, higher earnings and economic growth (Souto-Otero 2007, 2010). Human capital refers to individual attributes, such as knowledge, skills, experience, training, abilities, talent, intelligence, and judgment. Human Capital Theory (HCT) is predicated on the idea that money spent on education and training is well spent since it increases individual productivity. Therefore, working harder will benefit me financially and help me find more employment opportunities. Further, it has been suggested that



having access to high-quality higher education (i.e. training) improves one's chances of finding and succeeding in a job. According to this theory, a person's employability measures how well they have made themselves more marketable in the professional world (Becker, 1962). Human capital analysis as a theoretical framework, regular university curriculum reviews, competence development through university-industry partnerships, strengthened quality assurance systems, and alignment of university education with the country's development plans are all crucial to shaping and improving a person's employability. Therefore, this study used HCT as its theoretical lens since it places a premium on human capital investment to increase recent graduates' employability.

### **Materials and Methods**

The methodology adopted for this study was a qualitative approach aimed at exploring business graduates' views of their employability at Pokhara University, Nepal. The qualitative research approach is thought to be the most effective way in which the researcher understands the behaviours, attitudes and perceptions of research participants in a natural setting (Denzin & Lincoln, 2000). Considering the literature review and theoretical position, it was decided to use a qualitative research method (Rolfe, 2006). Ary et al. (2010) explained that qualitative research methods capture a rich and comprehensive image of a situation and allow the participants to share their in-depth experiences. This study employed semi-structured interviews with a cohort of 38 business undergraduates (22 graduates from the BBA (Bachelor of Business Administration) program), including 13 female and nine male graduates. Similarly, the study included 16 graduates from the BBA-BI (Bachelor of Business Administration in Banking and Insurance) program, consisting of nine male and seven female graduates. They all graduated in the years 2019 and 2021. The rationale for considering graduates of the undergraduate business program of the school of business, Pokhara university, lies in the fact that Pokhara University is an emerging university, making it to be the second-largest university in terms of student enrollment and the highest concentration of student falls in business programs with a higher rate of employability. All the participants came from the second largest university in Nepal in terms of student enrollment, i.e., Pokhara University. Graduate employability is one of the highly focused areas of the higher education system in Nepal. It is noted that graduates who pass out from higher education institutions in Nepal lack the required skills expected from a graduate. Additionally, business and management studies are among the popular study areas most employers require in the country. The research study was conducted to find the employability of fresh graduates of the School of Business, Pokhara University.

The semi-structured interview method was employed to understand participants' experiences, perceptions, opinions, feelings, and knowledge to provide more depth and meaning to the findings (Wengraf, 2001; Patton, 2015). The key themes of the student interview were what graduates mean by employability, how they view the current job market, and how graduates view their academic credentials in the current labour market. In addition, the semi-structured interview focused on how business students see their skills and competencies and whether they think their degree program helped them acquire these employability abilities. Moreover, the student interview focused on their perception of what employers expect and the role of universities in enhancing the employability of graduates. Additionally, questions about the respondents' academic profiles were included in the student interview. Specifically, the interview protocol was designed based on three crucial earlier qualitative studies on graduate employability (Tomlinson, 2005; Anastasiou, 2019; Donald, 2017). This added reliability to the interview protocol used in the study.

Purposive sampling was used to recruit the study participants. The sample size of 38 provided overall saturation (Corbin & Strauss, 2015), exceeding 35, regarded as a benchmark for

qualitative studies in strong journals (Saunders & Townsend, 2016). This data provided a clear understanding and explanation of the graduate's perceptions of their employability, which was appropriate for explaining phenomena undergoing constant change (Gioia et al., 2013). The data in this study were analyzed using thematic analysis (Bryman, 2008; Guest et al., 2012). Field data and semi-structured interviews were analyzed to identify overarching themes related to the objectives of the study (Wengraf, 2001). Saldana (2015) suggested that a second researcher do a thematic analysis on a sample of 10% of the interview transcripts. This was done to reduce the bias from a single researcher doing thematic analysis. A third researcher compared the sample transcripts' themes, sub-themes, and codes. This increased the validity of the findings.

The interviews were recorded, transcribed, and analyzed using a thematic analysis approach where the critical research questions identified the interesting contexts of the discussion (Guest et al., 2012). Each audio-taped interview lasted for approximately one hour. When transcribing, the audio recording was replayed several times to transcribe participants' responses. Since the participants were all educated, interviews were conducted in English. The researchers began by gaining a broad understanding of transcripts. Similarly, critical statements about the participant's experience were identified as formulating meanings of the introductory statements. Further, we removed overlapping statements and grouped these statements into clusters. Consensus and further discussion were used to settle any remaining theme disagreements.

Ethical considerations were applied, and participants explained the study objectives, period, and the risk and benefits of the study. Participants were told that they would remain anonymous and untraceable. It was also stressed that their involvement was voluntary and that the data was solely accessible to the lead researcher and his research team. The confidentiality of the participants was ensured by changing all identifying data. Name, age, sex, academic degree, year of graduation, academic specialization, and CGPA (Cumulative Grade Point Average) score were all collected using the participant information survey. The researchers established the themes, essential codes, and categories separately. Each illustrative quote was coded independently. Creating categories was an interpretative process in which definitions were constantly compared. The categories were formed using prior research. Finally, the team used cross-analysis to define and finalize the codes, categories, and central themes.

## Results and Discussion

This study's central aim was to explore business graduates' perceptions of their employability. In line with the primary objective of the study, the study focused on fundamental research questions such as how graduates understand employability and the transformations in the current labour market; how they perceive their academic credentials in the context of being employable; how graduates perceive the expectations of employers in the current job market, and how they perceive the role of business schools in enhancing employability of graduates.

### Understanding Employability and the Current Labour Market

Within the broader discourse of employability, most of the graduates within the sample had picked up the notion of employability skills as crucial for their employment. Thus, most knew that developing and deploying skills is critical to succeeding in the labour market. Further, when the participants were asked what employability means, many graduates expressed that to remain employable and get a job. The participants further argued that graduates need teamwork, communication, personal management, and IT competency skills. Overall, graduates tend to view employability as possessing different assets beyond their academic ability. The narratives of the research participants indicated that employability is closely related to one's ability to adapt to a job and utilize their skills effectively. The graduates also recognized that having a degree can increase one's employability by demonstrating intelligence and the ability to

formulate ideas. However, they caution that having a degree alone does not guarantee a job and that one must also demonstrate their ability to perform the required tasks. Adaptability and a willingness to learn seem to be critical factors in employability.

**Participant 6:** *I don't know. It was about having the skills to do the job and applying the skills you've got when you need to. A lot is whether you are up to the job and can involve yourself in what you do.*

**Participant 9:** *For me, it is about whether or not you can adapt to a job and be able to do it successfully and adjust the skills you have to cope with the demand of a particular position. Doing a degree has made me more employable, even if it's just because I can now formulate my ideas and then put them into a coherent form, which is the basic principle behind most jobs.*

**Participant 8:** *You have to adapt well to the workplace, so a graduate cannot go in and assume that just because they are a graduate and have a degree, they should be given a particular position. So, you have to show that you are good at the actual job and can adapt your skills to the objective of the job is... But they'll look at their degree and background and see if they can show that they have the intelligence to do the job.*

Similarly, the participants were also interviewed on what might make graduates employable. Participant 15 and participant 3 both agree that proficiency in technology is crucial in today's job market, as most jobs now require some technical knowledge. Good numeracy and communication skills are also vital as they help individuals convey information effectively and collaborate in the workplace. However, as Participant 3 mentioned, implementing these skills is critical. Only by doing the job can one honestly assess their proficiency level and identify areas for improvement. Therefore, seeking opportunities to apply these skills in real-world settings, such as internships, apprenticeships, or entry-level positions, is essential. In summary, having the necessary skills is essential, but gaining practical experience and continuing developing these skills is equally important to stay competitive in the job market.

**Participant 15:** *Things you are doing, as most jobs are now so reliant on technology, a specific proficiency in this area will help, but also things like good numeracy and written and communications skills.*

**Participant 3:** *You will only know how good you are until you do the job. I know you've got to have all these skills to take you forward but putting them into practice is the key. You are always hearing about 'key' skills needed so that they will be necessary; that's now got a lot to do with how you will get on in your career.*

Similarly, graduates were posed with the question of what the current labour market expects from graduates. In this context, participant 10 raises an essential point about interpersonal and leadership skills, particularly for those who aspire to management roles. Effective communication and strong IT skills are also vital in most jobs today. Similarly, participant 7 emphasizes the need to stand out from the competition in the job market. This could involve developing unique skills or experience that sets you apart from other job seekers. Likewise, participant 33 echoes the sentiment that the job market is becoming increasingly competitive, particularly for recent graduates. It can be challenging to stand out, but focusing on developing in-demand skills, gaining practical experience, and networking with industry professionals can help increase your employability. Overall, succeeding in the job market requires technical and interpersonal skills, practical experience, and the ability to differentiate yourself from other candidates. While it can be challenging to navigate the job market, focusing on personal and professional development can help increase your chances of success. This is evident in the narratives of the research participants mentioned below:

**Participant 10:** *A lot of it (succeeding in the job market) is about having appropriate interpersonal and leadership skills. If you want to go into the management side of things and*

*have a team of your own, I guess you need to have the ability to communicate well and things like good IT skills; I mean, most jobs now involve some IT, and that will help. So, all this is going to help.*

**Participant 7:** *The most important aspect of employability today is getting a job by standing out from the crowd in a competitive labour market.*

**Participant 33:** *Employability is standing out from the ever-increasing crowd in the pool of potential employees to employers. I know that's difficult because of the increased labour market competition. The ultimate problem is too many graduates and too fewer jobs.*

Similarly, several common themes emerged when exploring student views about the current labour market. What is implied in many of the respondents' understandings of the current situation for graduates is that the job market is highly competitive, and there is job scarcity. The evidence in this study also suggests that graduates are aware of the current job market scenario. The graduates in this study appeared to be increasingly concerned about developing employability skills to maintain and remain employable. In many senses, their perceptions are generally framed around a view that, at the graduate level of the labour market, there has been a general shift from simply 'gaining employment' towards the issue of 'being employable'. All the graduates in the present study expressed that the current labour market for graduates is highly competitive, with insufficient job opportunities. The graduates in the present study reported that the critical issue of how they become employable workers relates strongly to the knowledge and the different employability needed for other jobs. Graduates' views on employability are primarily based on their ideas about having the requisite competencies, abilities, and skills to progress within their employment. Overall, participants highlighted the need for various technical, interpersonal, leadership and problem-solving skills to be competitive in the job market. Graduates also noted the impact of the pandemic on the job market, including job scarcity and increased competition, making it challenging for graduates to find opportunities that match their qualifications. This is evident in the narrations by graduates below:

**Participant 19:** *The current job market is highly competitive, and there is job scarcity. Graduates need good communication, leadership, decision-making, problem-solving, and enough knowledge about the job they will apply for. Employers are looking for graduates with good academic marks and interpersonal skills. An academic degree and other competencies are essential to enter the job market.*

**Participant 36:** *After the past lockdown, the job market situation has changed a lot. Many became unemployed during the pandemic, and as a result, the job market got more competitive. You need to boost your skills to work in a highly reputed institute. The market has evolved drastically. So, graduates need to have good technical knowledge.*

**Participant 3:** *Many industries face a crisis, so there are relatively few vacancies. Graduates are waiting for opportunities. Thus, it's highly competitive with fewer windows of opportunity. Graduates aren't getting their job matched with their qualifications.*

**Participant 21:** *The current job market is very competitive. If you remain in the competition, you must acquire all the 21st-century employability skills; otherwise, there is no opportunity.*

**Participant 17:** *Well, the impression I'm getting is, well, the emphasis is that they're looking for the best; everyone seems to be looking for the cream of students, well that's from an employer point of view. From what I see in business, I'd say that graduates are still highly regarded, but I think they're thinking of companies cutting down on graduate recruitment, so paint the situation in a certain way... I think it's strange because when you've done a degree, you expect that you will go into a job, that's the whole process... but like the experiences I've heard from friends of mine and friends of my brother who has gone through the process, has made me realize that it's never as easy as they'd like it to be. It's becoming increasingly more competitive*



*and cut-throat, with more selectivity. I know that's especially the case with banks.*

### **Academic Credentials and Employability**

Another primary aim of this qualitative study was to explore graduates' understanding of the importance of credentials in employment. The overriding belief amongst most graduates in the study is that possessing academic credentials would be a fundamental dimension of their employability. The graduates in the study were aware that for the majority of occupations which they wanted to enter, they would need higher education credentials. A degree qualification is therefore viewed as one of the key benefits of becoming employable. The research participants' responses revealed a consensus that having a degree is essential in today's job market. They believe employers place a high value on academic credentials and excellence. Some participants also mentioned that without a degree, it could be challenging to advance in a career or compete with those without one. Overall, the consensus is that a degree is an essential requirement for any job and can make graduates more employable. This is evident in the narrations of graduates mentioned below:

**Participant 26:** *I think that if you don't have a degree, you get to a certain point where you can't get any higher because everybody above you does have a degree, so I guess you have to be unique to do that without it, but it would be tough. So, that was the whole thing about applying when I was applying to university; it was about what I would do... As I said, it's much more challenging if you still need to get a degree, and having one stands you in better stead when looking for jobs.*

**Participant 32:** *In terms of getting a job, it's very much a case of those who have earned a degree and those who don't, very much so. Gone are the days when people started in a company without a degree and worked their way up towards managing director. If you speak to people, you can only get a high rank without a degree; even fresh graduates go above you. So yeah, it helps ... I think considering the amount of work we put in and the number of exams we do, it's definitely worth doing a four-year degree to make yourself more employable, and also because I could go to university, I feel I would have owed it to myself to do so.*

**Participant 34:** *Yes. Credentials are the basic requirements for any job. Employers look after academic credentials and always search for graduates with good academic excellence.*

**Participant 3:** *Yes, our degree is essential for the job market because it's the first thing we must be prepared for. Degrees are necessary for every job vacancy in the market—the preliminary recruiting process begins with qualifications.*

### **Graduates' Perceptions of Employer's Expectations**

The present study also explored students' views about what employers expect from graduates. Many graduates reported that employers mainly expect graduates with sound academic achievement, competencies, and skills and abilities required for the job. As these views illustrate, graduates know what employers expect from them. However, when it comes to soft skills required, graduates have no prior training, which hinders their employability. The participants were asked what employers look for when recruiting graduates and what might put them at an advantage. Most of the participants in the study emphasized the importance of academic credentials and skills in employability. Few participants added that employers also look for the perfect candidate who fits the position, which may not be taught in academic courses. This is evident in the narrations of a few participants below:

**Participant 8:** *Well, employers today look for those graduates as prospective employees who are academically well-trained with soft and hard skills.*

**Participant 24:** *Employers want their employees to be more confident, have good grades, have skilful knowledge, and have excellent digital and marketing skills.*

**Participant 32:** *I think employers look for the marks the graduates have obtained and the skills*

*they have learned during their bachelor's degree, like interpersonal skills and many more. Employers also look for the perfect candidate who fits the position, but unfortunately, these skills are not taught in academic courses.*

**Participant 26:** *Certainly, employers look for graduates with exemplary academic achievements. They also mainly look for graduates with multiple skills such as communication, teamwork, problem-solving and leadership skills and many more... But we lack these skills.*

**Participant 10:** *More people are going to university, so there are more graduates and loads of competition for places. So, it helps to get a better class or degree than someone else and supports what university you attended, like its status and everything.*

### **Perception of Graduates toward Role of Business Schools in Enhancing Employability**

Many graduates in this study viewed the role of business schools as providing a foundation of knowledge. Most graduates also viewed a university education as offering strong potential for personal growth. Graduates in the study expressed faith in the role of higher education in providing students with knowledge which would have long-lasting benefits for students throughout their lives. Moreover, graduates perceived that they gained much discipline-specific expertise from the university, which they can bring to the labour market. Participants viewed that academic courses provide relevant knowledge and skills necessary for the job market. For example, the academic program included courses such as communication skills, critical thinking and problem-solving, which are essential in any job role. The academic courses also help develop a strong work ethic essential for any job. Participants also believed that the academic courses had given them the foundational knowledge and skills required for the job market. However, the job market is constantly evolving, and there is a need to continue learning and upskilling to stay relevant. Academic courses provide theoretical knowledge and understanding of the subject, but gaining practical experience through internships is equally essential. These experiences can help us apply theoretical knowledge in a practical setting which is valuable in the job market.

**Participant 20:** *Yes, I am sure that what I have learned during my four years of academic course is relevant to the job market. The school heavily focused on sharpening the discipline-specific knowledge, which benefited us...*

**Participant 19:** *The school, especially the teachers, provided relevant current knowledge. Some courses, such as the business environment in Nepal, Business and Society, financial management and accounting, marketing etc., were very helpful in understanding the labour market. The school and teachers did well.*

**Participant 26:** *The courses we learned provided discipline-specific knowledge and personal growth opportunities. For example, when I enrolled in the academic program, we were exposed to stuff like assignments, presentation group assignments, etc., and I was shy. Still, weekly presentations in the classroom have developed confidence in me, and I have eradicated my fear of the crowd, which I had initially. So, I was able to grow personally not only in the job market but in my personal life too.*

**Participant 4:** *Well, the teaching method used in the classrooms, like giving a presentation on the topic, Q/A programs, brainstorming on the subject, class participation, computer knowledge, report writing etc., helps the student to enhance their communication skills, decision-making skills, problem-solving skills, public speaking, personality development, entrepreneurship skills etc. These mentioned are also the skills and competencies required by the job market. So, the proper teaching method helps graduates to get good jobs.*

On the other side, many graduates also expressed that although business schools are capable enough to enhance the course's theoretical knowledge, the schools lack in providing graduates with developing employability skills needed to compete in the current job market. During



their study, they have not been exposed to real-life business situations, skill enhancement workshops and training despite being given the internship opportunities that were part of their curriculum. The graduates' views also expressed dissatisfaction with the role of business schools in enhancing their graduates' employability skills and the labour market potential of their graduates. The students' views suggest that, along with theoretical knowledge, graduates need to be exposed to the practical aspects of the skills. Few other participants have also viewed the need for improvement in the teaching pedagogies of the school. The present study found that generic skills are also needed along with academic qualifications to foster employability.

**Participant 19:** *Evidently, lacking skills prevented many graduates from employment. I have never heard of the school offering skill enhancement, career-building workshops or work-integrated learning. We were exposed to only internship programs, which is insufficient to grow ourselves in the job market. Furthermore, the school predominantly uses the traditional teaching method, which only allows students to sit and listen to the teacher based on theory rather than practice-based. As for my learning experience, there is a gap between university teaching and what employers want. Our school generally focused on completing courses within their given time frame but never bothered about students' learning abilities and relating their knowledge to real-life issues.*

**Participant 35:** *From my standpoint, the lack of skills among HE graduates is worrying and doesn't match what employers seek and what students are acquiring. The school has neglected communication, creativity, decision-making, and problem-solving skills. The university should incorporate such skills in its teaching-learning process, focusing on practice-based courses.*

**Participant 14:** *Apart from poor teaching methods, poor curriculum development, poor interaction between lecturers and students, and poor teaching and learning environment, there are other obstacles too that negatively affect students' performances in the job market. Universities must focus on practical knowledge and provide subsequent exposure to a market where they can stand on natural ground. The professor's presentations, projects, and assignments helped improve students' communication, leadership, and analytical thinking.*

This study has explored the way graduates view their employability. It has addressed several core research objectives: graduates' understanding of employability and the current labour market for graduates, the role of credentials in employability, graduates' perception of employer's expectations and the role of business schools in enhancing graduate employability. The present study was interested in exploring how graduates entering a changing labour market understand the issue of employability. The study found that most graduates are well aware of employability. Many of them related it to employability skills which corroborate with the findings of Gedye and Beaumont (2018) and Thirunavukarasu et al. (2020), who argue that graduates understand employability relating to the idea of employability skills and a good understanding of the labour market. Similarly, many graduates expressed that the current labour market is competitive, with fewer jobs and many graduates. These findings are in line with the earlier results of Jackson and Wilton (2017), Qenani et al. (2014), Holmes (2013), and Tomlinson (2007). They concluded that graduates must enhance their employability skills to be employable because the global labour market is competitive with job scarcity. Similarly, most of the graduates were found to be aware of the current labour market, which is in line with the study of Tomlinson (2012), who argued that to be employable, graduates need to have a clear understanding of current labour market demands as many graduates in the present study have expressed oversupply of graduates and fewer job opportunities.

Similarly, graduates in the study viewed academic credentials as a fundamental dimension of their employability. A degree qualification is considered one of the key benefits of becoming employable. The study found that graduates place a higher value on their academic credentials

in the context of employability, which aligns with Byrne (2022). However, Tomlinson (2008) and Stevenson and Clegg (2011) indicated that graduates perceive their academic qualifications as declining in shaping their employment outcomes. While academic credentials are still seen as a significant dimension of their employability, graduates increasingly need to add value to gain an advantage in the labour market. The findings are encouraging and indicate that students are intensely aware of the competitive nature of the global labour market. Likewise, graduates in the study reported that employers expect both sides of graduate potential: solid academic credentials and employability skills. Many graduates pointed out that employers expect employability skills from the graduates, which aligns with previous research findings (Succi & Canovi, 2020; Mason et al., 2003), who argued that employers value soft skills more than hard skills. The study further suggested that to enhance graduates' skills, higher education institutions (HEIs) and employers must collaborate so that graduates can better adapt to the changing nature of the labour market and increase their employability.

The present study's findings were also supported by recent studies (Kassa, 2022; Hossain et al., 2020; Mainga et al., 2021), who posited that employability skills are crucial in a changing labour market. Further, graduates in the study viewed that business schools have a significant role in fostering the students' employability skills. Graduates also viewed another significant way of enhancing employability skills is by introducing new teaching pedagogies into the classrooms, such as case studies, simulations and role-play etc., which is also in line with the prior study (Okolie et al., 2019). The graduate in this study also suggested focusing more on practical and skill-based learning, which is similar to the findings of Sin and Neave (2016). Most of the graduates were also of the opinion that business schools stress more on theoretical lessons than practical ones, which corroborates with the findings of Okolie (2014). At the same time, graduates expressed that business schools need to meet the demands of the labour market by producing work-ready graduates. Business schools heavily focus on theoretical knowledge and ignore the teaching of skills and attributes associated with employability. The graduates opined that the schools do not provide any training and workshops for fostering abilities as per the labour market, which aligns with the findings of De Villiers (2010) and Osmani et al. (2017), contending that teachers need to provide training on skill development to prepare graduates to meet market needs.

### **Conclusion and Recommendation**

The present study aimed to explore the perceptions of employability among undergraduate business program graduates in Nepal. The study adopted a qualitative approach, using semi-structured interviews to collect data from 38 business graduates. The study findings have provided insights into how recent graduates comprehend employability, view the current labour market and position their academic credentials in employability. The analysis has further demonstrated that students increasingly view their employability as the relative positional competition for labour market resources, which appears to have a bearing on how they perceive the role of credentials in their employability. The findings have further shown that employers expect both sides of graduate potential: strong academic credentials and employability skills. Therefore, graduates increasingly see the need to develop broader employability, which incorporates building strong academic credentials and employability skills and competencies outside the formal learning context. Finally, graduates believed that business schools are critical in enhancing graduate employability by providing practical skills and experience.

The findings of this study will be an essential contribution to the field's existing body of knowledge and value to business schools, administrators, planners, and policymakers of higher education institutions to bring forth educational initiatives to improve graduate employability with implications for students in increasing their employability and smoothing their transition

from higher education into the global job market. The study also contributes to the literature on graduate employability by highlighting the perceptions of graduates in a non-Western context. One of the inevitable limitations of the present study was the small sample used to form the basis of the empirical evidence. Furthermore, the study would have been enriched by a more comprehensive student base and a more extensive institutional range. In particular, more exploration might be needed into the perceptions and attitudes of students with different educational biographies and from a diverse range of class and cultural backgrounds.

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# Teachers' Perception on Reducing Students' Enrollment at University level in Mathematics in Nepal

Thakur Prasad Pokharel

School of Engineering, Pokhara University, Pokhara Nepal

## Abstract

**Background:** Students' enrollment taking mathematics as a major subject has decreased at the university level in recent years. Difficulty in subject matters, the attitude of students, the learning environment, uses of mathematics knowledge in real life, and existing evaluation systems could influence learners' enrollments at the university level. The purpose of this study is to identify causes for reducing the learners' enrollment at a higher level in mathematics.

**Objective:** This study desires to investigate the perception of teachers on the dependent variable as a reduction of students' enrollment in mathematics and independent variables, namely difficulty in subject matters, the attitude of learners, learning environment, application of mathematics in real life, and existing evaluation systems and find relation and influence.

**Methodology:** This inquiry consists of 109 faculty members with qualifications of master's degree or above in mathematics based on the survey research design in Pokhara valley and its surrounding. A three-point Likert-scale survey questionnaire, 31 structured questions related to dependent variables and independent variables was made and administered by the researcher to the teachers.

**Result:** This study concluded that reducing learners' enrollment is remarkably confidently correlated with the attitude of students, learning environment, difficulty in subject matters, and the existence of evaluation patterns. This finding further found that the learning environment and existing evaluation system are directly impacted by reducing the students' enrollment, but other independent variables do not have an influence on the dependent variable, namely perception towards reduction of student enrollment in mathematics.

**Conclusion:** The learning situation and actual judgment system are highly affected by reducing the students' enrollment at a higher level. These two independent variables should be managed by research to address the learners' interest and demand within a short time interval as an international system. Further study about the perceptions of teachers in pure mathematics and applied mathematics should be done separately to generalize and validate this finding.

**Keywords:** Decline, enrollment, environment, evaluation, perception

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## Correspondence:

Thakur Prasad Pokharel  
pokthakur287@gmail.com

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## Introduction

Assumptions, properties, and applications are the major key points of any subject. The study of the assumption, properties, and applications of numerical-related topics is called mathematics. Different parts of mathematics have different assumptions, properties, and applications. Mathematics is a subject that studies numbers, logic, shapes, quantity, and arrangements (Hom & Gordan, 2021). It plays a significant role in diverse fields in our real life such as engineering, economics, business, finance, natural science, and medicine. Even though enrollment of students in general mathematics courses has increased slightly from 2001 to 2013, the enrollment of learners in extension courses of mathematics has rapidly decreased over the recent years (Wilson & Mack, 2014). The course of pure mathematics is abstract and rigorous. Most of the topics of pure mathematics include a more theoretical part and fewer counterexamples. The curriculum of core mathematics has not explained the application part of math in the real field. Most of the learners focused on the applied field of mathematics. They gave less importance to the extension course of mathematics.

Poor marks in exams encouraged the learners to dislike mathematics (Ukobizaba et al., 2021). The pass rate of mathematics of learners was below that of other subjects. With the problem mentioned above, Learns' enrollment in taking mathematics as a major subject has reduced at a higher level in recent years. The study could support the teacher to motivate, inspire, and guide the learners to learn mathematics by explaining the function of mathematics in further studies. This study aims to explore the major problems of learning situations, and existing judgment systems for the low rate of passing- out in mathematics the exam. Thus, it could play a significant role in eliminating the main problems and create good learning environments and update evaluation systems to address learners' interests and needs. Further, this study may provide sufficient ideas for pupils to innovate in mathematics in its applied field. Moreover, it is expected that the findings from this could provide a remarkable suggestion to reform the course content and elaborate the application part.

## Review of Literature

The problem-Based Learning Model can be considered an appropriate tool for achieving intended learning outcomes, interesting and more participating students' activities, and making an easy and comfortable environment for learners to understand subject matters and connect knowing mathematical knowledge to real life (Apriliyanto et al., 2018). The problem-based learning model is a kind of Students Center Teaching Learning Activities (SCTLA). Teachers have to achieve sufficient knowledge for this method. Course contents of mathematics should be updated for the SCTLA approach. Mazana et al. (2019) explored that positive attitude toward mathematics was decreasing from beginning classes to higher classes. The enjoyment and attitude of mathematics were directly correlated with the learner's achievement. Liking or disliking this subject was determined by the output of the result of mathematics. The mathematical concepts, ideas, and application part have to be taken seriously in junior classes. Zhang et al. (2019) indicated that vigorous anxiety about mathematics played a stronger negative significance in the studies of Asian mathematics learners than in mathematics learners of European. Moreover, math anxiety had negative effects on the performance of math at a higher level than elementary groups. Hine (2018) explored that mathematics was a more rigorous and less applicable subject and mathematical knowledge at the secondary level was not essential for the entrance of other viable subjects at a higher level of education in Australia. It indicated that less rigorous and more applied courses in diverse fields attracted new learners. Tyata et al. (2021) found that project-based learning (PBL) was the most suitable pedagogy for the teaching and learning activities of mathematics. The fact-finding revealed that PBL was highly appropriate to engage the learners through group discussion, discovering learning,

questioning, and concept mapping. Moreover, that method motivated the learners by applying interactive ways. PBL was student center teaching-learning activities that were guided by constitutive interests, and collaborative and cooperative learning.

Mathematics was not a favorite subject for most students due to boredom, fear, low self-efficacy, and negative expectations of mathematics (Gafoor & Kurukkan, 2015). More positive effects like higher self-efficacy order, interest, positive expectations, and personal values play a significant role in favorite mathematics learners. A positive attitude toward mathematics supports the learners to like mathematics. Finance and banking, computer and its game, weather prediction, search engine, logistics, music, Transportation, satellite navigation, crime prediction, military, and defense are the most common and essential applications of advanced applied fields of mathematics in real life (Gupta, 2019). Basic and advanced knowledge of mathematics is required in diverged fields.

Online course modality was not an appropriate alternative way of teaching-learning activities of all level courses (Counterman & Zientek, 2021). Subject matters and achievement in mathematics required more face-to-face courses. Semi-structured schedules, frequent interaction, and prompt feedback with students and teachers were suitable for middle and upper-level courses in mathematics. The students-centered face-to-face teaching-learning activities model was suitable for all levels of course of math to achieve remarkable results.

Teachers, students themselves, and the learning environment were the major points for the difficulty of mathematics for learners (Langoban, 2020). Most of the learners had insufficient knowledge about mathematics from the previous class. Most of the faculty members of mathematics were unable to connect the subject matters of mathematics to real life. The learning environment in different academic institutions was not positive for mathematical learning, that's why mathematics becomes difficult for students. Shrestha et al. (2021) revealed that mathematics was complicated, abstract, and rote memorization which were three critical concerns in learners' experience of learning mathematics. The poor responsibility of parents and difficulty adjusting to the new environment in the new school were the main reasons for the decrease in learners' performance in mathematics. So the school should launch a special program for the new learners to adjust them to new environments. The curriculum and teaching methodology should be changed to make them applicable, concrete, and easy.

Kunwar (2020) explored those occupations and education of parents played a remarkable role in learners' achievement in mathematics. This study also found that students obtaining marks were directly related to their parent's occupations. Students' honesty, teacher's evaluation fairness, students' active participation, transparency in the education system, and the occupation of parents play a significant role in achieving good scores in mathematics. Akhter and Akhter (2018) revealed that the attitude of students was a major part of the learning of mathematics of learners. Students having positive attitudes towards mathematics supported them to understand mathematics comfortably. The negative attitude or perception of learners towards mathematics of students should be changed for increasing the demand for mathematics.

The innovative method of mathematics was viable for those students who were weak in mathematics. This method enhanced the learners to motivate, encourage, increase the rate of interest, and apply mathematical knowledge to real life. Negative attitude, disliking mathematics, and getting low grades in mathematics was improved by using an innovative method of mathematics (Woodward, & Baxter, 1997). The curriculum of mathematics should be reformed for this method. Different types of mathematical content have to be included for innovative mathematics. An incentive through private and public funding schemes, Skills – based on technological change in higher education degrees, the rising social reputation of education, and incentive to achieve college degrees were required in part for the expansion

of higher education (Beblavy et al., 2014). The rule of government and universities made huge funds for incentives to degree holders. Government should identify required education for national needs and provide sufficient funds for research activities and learners of degree holders in mathematics.

Technology has been invented rapidly. The world is becoming small due to the use of technology. Every unexpected activity became possible with the help of modern technology. Simply Counting and arithmetic, weaving, building, and other business, solving technological problems by using calculus, and solving technological and mathematical problems by using a computer were all the products of mathematics (Hansson, 2019). The study explored the hybrid concept of usefulness and computation of mathematics in technology. Technology was the product of the philosophy of technology and the philosophy of mathematics. Mathematics was the fundamental tool of technology.

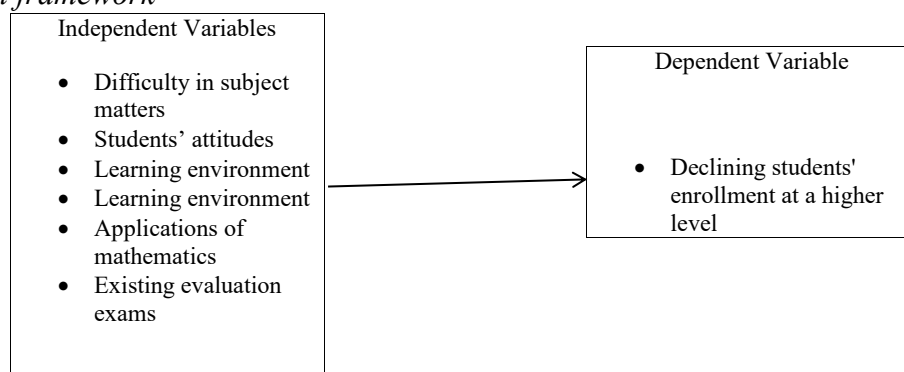
Learners' enrollment has reduced at the higher-level taking mathematics as a major subject in recent years. This investigation aims to identify the problems of reducing student enrollment at the university level in mathematics. From the above theoretical and empirical review, the difficulty of course content, learning environment, the attitude of learners, application of mathematics in real life, and evaluation systems play a significant role to like or dislike mathematics.

Mathematics was more rigorous and less applicable than other disciplines in real life (Hine, 2018). Also, mathematics was abstract, complicated, and had rote memorization. The lack of responsibility of parents and difficulty adapting to the new environment in the new school were the key points for reducing students' performance in mathematics (Shrestha et al., 2021). The low grade obtained in exams encouraged the students to dislike mathematics (Ukobizaba et al., 2021). The positive attitude of students toward mathematics was decreasing in higher-level classes (Mazana et al., 2019). From the above-mentioned points, pupils do not like to study mathematics at a higher level. So, the enrollment of learners taking mathematics as a major subject was lower at the university level.

Moreover, faculty members of mathematics are one of the key factors for teaching learning activities. This study desired to recognize the perception of teachers on decreasing the learners' enrollment at a higher level in mathematics with the constructs such as difficulty in subject matters, the attitude of learners, uses of mathematics, learning environment, and evaluation system in Pokhara valley and its surroundings. Such types of research studies have not been done at Pokhara valley and its surrounding. The purpose of this study is to identify the cause of declining learners' enrollment at the university level in mathematics. The conceptual framework of this study has been presented below. The Independent variables and dependent variable of this study are as below:

**Figure 1**

*Conceptual framework*





## Materials and Methods

The study utilized both descriptive and analytical research design by using the quantitative research method. The inferential statistical tools like mean, standard deviation, correlation, and regression analysis showing the impact of independent variables on dependent variables were used in this study. Finding the perception of the teacher to reduce the learner's enrollment at the university level in mathematics was aimed to apprehend this investigation on independent variables. The researcher had prepared 7 demographic variables and 31 structured questionnaires among them 5 for the decline in the enrollment of students, 5 for the difficulty of subject matters, 6 for the attitude of students, 5 for the learning environment, 5 for the application of mathematics, and 5 for existing exam patterns based on the research questions. Structured questionnaires were used in this study. The data are collected from the questionnaires and analyzed using the statistical software SPSS version 20. The data from questionnaires were checked and the validity and trustworthiness of the results were. This study was especially used to identify the perception of teachers on declining student enrolment in mathematics at the university level on independent variables.

The target population for this study embodied the tutors in mathematics whose qualifications were master's or above within Pokhara valley and its surrounding. All faculty members of mathematics who had taught mathematics at the university level and secondary level of the school during the data collection period constitute the population in this study. The data was collected from 2022 Jun to 2022 August through 40 field visits and 69 online. The sample size was determined by non-probability purposive sampling which consisted of 50 science backgrounds, 26 education backgrounds, and 33 art background tutors who were involved in the teaching profession. Most of the faculty members of mathematics were included in these study areas.

## Internal Consistency of the Perceptions Category

The Internal consistency of the items has been depicted in table 1 using the reliability coefficient Cronbach  $\alpha$ -value. Taken together, we utilized a total of 31 items in the questionnaire. The overall reliability coefficient was found to be 0.893, which indicates that the items employed in the questionnaire were consistent.

**Table 1**

### *Reliability Analysis*

| S.N         | Constructs   | No. of items | $\alpha$ -value |
|-------------|--|--------------|-----------------|
| 1           | On declining enrollment of students in Mathematics at Higher level | 5            | 0 .809          |
| 2           | Difficulty in subject matters                                      | 5            | 0 .764          |
| 3           | The attitude of learners'  | 6            | 0 .877          |
| 4           | Learning Environment   | 5            | 0.835           |
| 5           | Application of mathematics   | 5            | 0 .819          |
| 6           | Existing evaluation systems  | 5            | 0 .725          |
| Total items |  | 31           |                 |

Further, table 1 shows the reliability coefficient of each of the designed constructs such as the declining reason for enrollment in mathematics, difficulty in subject matters, the attitude of learners, and so on. The result shows that the reliability of the constructs was the highest at 0.877(the attitude of learners) and the lowest at 0.725 (the existing evaluation systems). All constructs were reliable because all of them were greater than 0.70.



The plan was especially used to find the rigorous feeling of faculty members facing mathematics on the topics of the declining students' enrollment at a higher level, attitude of students, difficulty in subject matters, learning environment, an applied field of mathematics, and evaluation systems. The arithmetic means and standard deviation (SD) of each structure questionnaire of each construct were computed by applying the software SPSS version 20 and the outcomes were analyzed. The relationship of construct variables and the impact of independent variables on dependent variables were calculated by using correlation and regression matrix.

## Results and Discussion

### Demographic Profile of Respondents

In this study, 109 mathematics teachers participated in the survey. Among 109 respondents, 97.20 % were male and 2.80 % were female. It explains that few females studied mathematics at a higher level. 76.1 % live in Municipality and the rest 23.90% live in Villages. Most of the respondents live in a valley. Among these 109 appellants, 21.10 % of the ages are below 30 years, 29.40 % of the ages are 30 to 40 years, 38.50% of the ages are 40 to 50 years, and 11.00 % of the ages are above 50 years. It described that the age of most faculty members of mathematics lies between 40 to 50 years.

Different respondents have different qualifications, 89 % of appellants have a master's degree, and 6.40% have M.Phil. And 4.6% have Ph.D. qualifications. It revealed that only a few mathematics tutors were interested in further study after passing their master's degree. 89.90 % of the applicants were married and the rest 10.10 % were single. 94.50 % of respondents have a main income that depends on only teaching and learning activities and the remaining 5.50 % have different income rather than teaching and learning activities.

### Descriptive Analysis of Difficulty of Subject Matters

For descriptive analysis of the study means and standard deviation are applied for testing the position of constructs of the perception of teachers on the above-mentioned dependent variable and independent variables.

**Table 2**

*On Declining Enrollment of Students in Mathematics at a Higher Level*

|   |  | N   | Mean  | SD    |
|---|--|-----|-------|-------|
| 1 | Students' enrollment in mathematics at a higher level is decreasing each year.                   | 109 | 2.917 | 0.363 |
| 2 | The curriculum of mathematics at a higher level is less useful than other subjects.              | 109 | 2.918 | 0.388 |
| 3 | The ability and experience of students are not good in mathematics.                              | 109 | 2.898 | 0.407 |
| 4 | Most subject matters of mathematics are not connected to our real life.                          | 109 | 2.899 | 0.438 |
| 5 | The rate of passing out students in Mathematics at a higher level is less than in other subjects | 109 | 2.954 | 0.285 |

According to table 2, the majority of the faculty members agreed that the rate of passing out students in mathematics at a higher level was less than in another subject with a mean of 2.954 and a standard deviation of 0.285. But a minority of the teachers agreed that the ability and experience of students were not good in mathematics having a mean of 2.898 and SD of 0.407.

**Table 3***Difficulty in Subject Matters*

|   |   | N   | Mean  | SD    |
|---|---|-----|-------|-------|
| 1 | I think that only a few students understand mathematics problems.                                     | 109 | 2.450 | 0.739 |
| 2 | I realize that only a few students prefer their friends to study mathematics at a higher level        | 109 | 2.679 | 0.591 |
| 3 | I feel that the mathematics curriculum is not flexible for different levels of students.              | 109 | 2.743 | 0.516 |
| 4 | I think that mathematics is relevant to further studies.  | 109 | 2.817 | 0.389 |
| 5 | I think that the existing curriculum of mathematics is not focused on a problem-based learning model. | 109 | 2.66  | 0.581 |

The outcome was demonstrated in table 3 with the largest mean of 2.817 along with an SD of 0.389. It said that most of the respondents realized that mathematics was relevant to further studies. The smallest mean of this table was 2.450 with a standard deviation of 0.739. It concluded that minor respondents agreed that only a few learners understood mathematics problems.

**Table 4***Attitude of Students*

|   |   | N   | Mean  | SD    |
|---|---|-----|-------|-------|
| 1 | I feel that most of the students have a negative perception of mathematics.                             | 109 | 2.530 | 0.701 |
| 2 | I realize that only a few students of mathematics have the ability and experience to study mathematics. | 109 | 2.743 | 0.599 |
| 3 | I think that only a few students have interested to study mathematics in further study                  | 109 | 2.844 | 0.434 |
| 4 | I feel that most of the students have insufficient mathematical knowledge to apply in the real field.   | 109 | 2.807 | 0.441 |
| 5 | I think that most students do not like to ask mathematics teachers and friends.                         | 109 | 2.596 | 0.610 |
|   |   |     |       | 0.303 |
| 6 | I realize that only a few students like to innovate in mathematics.                                     | 109 | 2.899 |       |

This Table 4 explained that most teachers realized that only a few learners liked to innovate in mathematics with a mean of 2.899 along with an SD of 0.303 nevertheless fewer faculty members felt that most of the learners had negative perceptions of mathematics with a mean of 2.530 along with an SD of 0.701.

**Table 5***Learning Environment*

|   |   | N   | Mean  | S.D   |
|---|---|-----|-------|-------|
| 1 | I feel that most campuses have given less priority to mathematical activities.      | 109 | 2.918 | 0.277 |
| 2 | I feel that most people could not connect their mathematics knowledge to real life. | 109 | 2.917 | 0.308 |

|   |   |     |       |       |
|---|---|-----|-------|-------|
| 3 | I think that most of the student's family has negative perceptions of mathematics.                    | 109 | 2.706 | 0.628 |
| 4 | I think that only a few faculty members of other subjects have a negative perception of mathematics.  | 109 | 2.743 | 0.599 |
| 5 | I feel that only a few people related to mathematics are involved in mathematics research activities. | 109 | 2.826 | 0.448 |

The result of table 5 described that most teachers felt that most of the campuses had given less priority to mathematical activities with a mean of 2.918 along with an SD is 0.277 however fewer teachers thought that most of the student's families had negative perceptions of mathematics with a mean of 2.706 along with SD is 0.628.

**Table 6**

*Application of Mathematics*

|   |   | N   | Mean  | SD    |
|---|---|-----|-------|-------|
| 1 | I feel that mathematics is a more applicable subject than other subjects.   | 109 | 2.881 | 0.402 |
| 2 | I think that mathematics knowledge can help the study of another subject.   | 109 | 2.963 | 0.189 |
| 3 | I feel that mathematics ideas help learners to develop more creative, imaginative, problem-solving, constructive, and logical skills than other subjects. | 109 | 2.954 | 0.210 |
| 4 | I think that the Curriculum of mathematics is not focused on the job orientation, behavioral, and life orientation of learners.                           | 109 | 2.872 | 0.387 |
| 5 | I feel that the Curriculum of mathematics does not include sufficient examples and ideas about Science, Technology, Engineering, Economics, and Business. | 109 | 2.844 | 0.455 |

The outcome of table 6 showed that the largest average was 2.963 with a standard deviation of 0.189 and the smallest mean was 2.844 with an SD of 0.455. Most of the replies felt that mathematical knowledge can help the study of another subject. Only a few replies concurred that the curriculum of mathematics did not include sufficient examples and ideas about Science, Technology, Engineering, Economics, and Business.

**Table 7**

*Existing Exam Patterns*

|   |  | N   | Mean  | SD    |
|---|--|-----|-------|-------|
| 1 | I feel that the question pattern of mathematics is not different for weak and talented students at the same level. | 109 | 2.835 | 0.462 |
| 2 | I think that existing exam patterns do not provide chance exams within a short time.                               | 109 | 2.844 | 0.434 |
| 3 | I feel that most of the students have feared presenting in mathematics exams.                                      | 109 | 2.817 | 0.530 |
| 4 | I think that the question pattern of mathematics is harder than other subjects.                                    | 109 | 2.596 | 0.771 |
| 5 | I feel that question papers on mathematics do not include innovative parts of mathematics.                         | 109 | 2.697 | 0.616 |

The result of Table 7 explained that most teachers thought that existing exam patterns did

not provide chance exams within a short time with a mean of 2.844 along with an SD 0.434 however fewer teachers thought that question pattern of mathematics was harder than other subjects with a mean 2.596 with an SD 0.771.

**Table 8**

*Correlations between Dependent and Independent Variables*

|                               | Declining students enrollment | Difficulty in subject matters | Attitude of students | learning Environment | Application of Mathematics | Existence of exam pattern |
|-------------------------------|-------------------------------|-------------------------------|----------------------|----------------------|----------------------------|---------------------------|
| Declining students enrollment | 1                             | 0.182                         | 0.311**              | 0.405**              | 0.038                      | 0.379**                   |
| Difficulty in subject matters |                               | 1                             | 0.361**              | 0.243*               | 0.128                      | 0.154                     |
| Attitude of students          |                               |                               | 1                    | 0.506**              | 0.304**                    | 0.547**                   |
| learning Environment          |                               |                               |                      | 1                    | 0.198*                     | 0.434**                   |
| Application of Mathematics    |                               |                               |                      |                      | 1                          | 0.279**                   |
| Existence of exam pattern     |                               |                               |                      |                      |                            | 1                         |

**Table 9**

*Regression Analysis showing Effect of Independent Variables on the Dependent Variable, Decline of Students in Enrollment in Mathematics:*

| Model                         | B      | T      | Sig   | VIF   |
|-------------------------------|--------|--------|-------|-------|
| (Constant)                    | 9.668  | 5.939  | 0.000 |       |
| Attitude of students          | 0.019  | 0.290  | 0.772 | 1.827 |
| learning Environment          | 0.216  | 2.698  | 0.008 | 1.423 |
| Application of Mathematics    | -0.119 | -1.198 | 0.234 | 1.125 |
| Existence of exam pattern     | 0.186  | 2.419  | 0.017 | 1.535 |
| Difficulty in subject matters | 0.053  | 0.823  | 0.412 | 1.164 |

The variance inflation factor (VIF) was less than 5, and the VIF of all the variables had not more than 1.827. It meant that there was no multi-co-linearity in any constructs of the study. The P value of the learning environment was 0.008 which was less than 0.05. The coefficient value of  $\beta$  was 0.216 so the learning environment positively impacted on declining enrollment of students in mathematics. The P value of the existing exam pattern was 0.017 which was below 0.05 and the coefficient value of  $\beta$  was 0.186. Based on this information, the existing

exam pattern significantly affected reducing enrollment of students in mathematics at a higher level. The p values of the attitude of students, application of mathematics, and difficulty in subject matters were less than 0.05 from table 9. So the uses of mathematics, the attitude of learners, and difficulty in subject matters were no signs of declining students' enrollment at the higher level in mathematics. The value of the R-square is 0.231. Based on the coefficient of determination ( $R^2$ ), it can be concluded that 23.10 percent of changes in the dependent variables are influenced by independent variables.

The major finding of this study was that decreasing student enrollment was highly influenced by the learning environment and existing evaluation system. Most of the faculty members positively trusted that the pass percentage of learners in mathematics is below that of other disciplines. This finding is consistent with the study by Ukobizaba et al. (2021) that concluded that lower achievement in exams supported students to dislike mathematics. This study found a similar conclusion. Kunwar (2020) revealed that employment and education of guardians showed a significant role in learners' good performance in mathematics. This study found supportive results with the learning environment affecting the student's enrollment.

Moreover, this study assessed that reducing learners' enrollment at a higher level in mathematics was remarkably correlated with the difficulty in subject matters, attitudes of learners, learning environment, and the evaluation process. Learners' achievement in mathematics had decreased because mathematics was abstract, rote memorization, and complicated, and the carelessness of parents' responsibility and difficulty adapting to the new surroundings of the new school (Shrestha et al., 2021). This study also found a similar argument. Mathematics was a more rigorous and less applicable subject compared with other subjects (Hine, 2018). This study also supported this argument because most of the respondents agreed that the curriculum of mathematics at a higher level was less viable than other equivalent subjects.

Furthermore, the result of this study explained that most people were unknown to use their mathematical knowledge in real life, and only a few learners were interested in innovating in mathematics. Only a few colleges provided priority for mathematical activities. These all statements reported that the teaching-learning environment of mathematics was poor. Different types of vocational training should be conducted to apply mathematical knowledge in different sectors such as agriculture, construction of buildings and roads, tailoring, furniture, sports, designing, and so on. Different research activities about the application of mathematics in the local area should be done to improve the learning environment of mathematics. The evaluation system and its affected components should be changed to increase learners' pass percentage.

### **Conclusion and Recommendation**

Teachers' perception of reducing learners' enrollment was due to the rigorousness in course content, attitude of learners, learning environments, uses of mathematics in real lives, and existing evaluation systems. Also, few teachers believed that the ability and experience of learners were not fine in mathematics, only a few students knew mathematics problems, most of the learners and their families had negative insight into mathematics, course content of mathematics did not include a sufficient example of applied part of different disciplines, question pattern of mathematics was harder than other subjects.

Moreover, this study concluded that decreasing learners' enrollment was significantly positively correlated with difficulty in subject matters, attitudes of learners, existing exam patterns, and learning environments and is not correlated with the uses of mathematics. This study further found that the learning environment and existing evaluation system were directly influenced by decreasing students' enrollment. There was no significant impact on reducing students' enrollment at a higher level with difficulty in subject matters, the attitude of students, and applications of mathematics.

Furthermore, the learning environment and actual judgment system play a significant role in enhancing the quality of education. These two independent variables should be managed by doing different research activities to address the student's interests and demands within a short period. The existing judgment system should be updated to raise the pass percentage of students and reduce the difficulty level of question patterns in exams in mathematics. Thus, concerned campuses and universities should frequently manage different types of workshops, training, seminars, and conferences in the applied field of mathematics to improve the learning environment. Also, new learners at a university level should be guided, inspired, and motivated to enroll in mathematics by explaining the importance of mathematics in diverse fields. Faculty members of mathematics should be involved to do different types of research to enhance the scope of mathematics.

In the end, this study unveiled about the attitude of faculty members, the economic status of learners, job guarantee, and family influence. Some educated people said that mathematics was not applied in real life so the learners did not like mathematics. But this study found the learning environment and evaluation system were the main reasons. The nature of pure mathematics and applied mathematics are different. This study took respondents who were involved either in pure mathematics or applied mathematics or both at Pokhara valley and its surrounding. Further research about the perception of teachers in the enrollment of students in pure mathematics and applied mathematics separately should be done in different places to generalize and validate this result.

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# Give me a Vote: How Nepalese Mayoral Candidates Perform Speech Acts on Facebook?

Yog Raj Lamichhane\*, Suresh Raj Dhakal\*\*

\*School of Business, Pokhara University, Pokhara, Nepal

\*\*Gandaki University, Pokhara, Nepal

## Abstract

**Backgrounds:** Social media, particularly at the time of the election, are frequently used by politicians for communication with their voters. Among different social media, Facebook is the most popular media in Nepal.

**Objectives:** In this context, the paper has analyzed how the eighteen mayoral candidates of the Local Election-2022 from six Metropolises of Nepal have performed different illocutionary speech acts while communicating with their voters through posts on Facebook.

**Methods:** Developing a protocol, selected 394 posts of two candidates of the major political parties and one independent candidate from each metropolis are selected as data for analysis. The status updates on Facebook of these candidates from the day of their nomination to the election silence period before the voting day are collected for analysis. The taxonomy of illocutionary speech acts developed by Searle is taken as the theoretical base to analyze the collected written updates.

**Results:** The study has found extreme use of assertive speech acts and occasional use of declarative speech acts in the status updates by the mayoral candidates. There are no fundamental differences between the winning and losing candidates regarding their culture of using or ignoring particular speech acts.

**Conclusions:** Communicating the certainty or the inaccuracy of the proposition in the form of extreme assertive speech acts by the candidate indicates the usual reporting character of them rather than adopting other rational and expressive speech acts to move the audience. It also indicates that they perform different speech acts without being conscious of the inherent characteristics of the acts. The study supports scrutinizing the communication skills of the politicians of urban Nepal in terms of doing politics with words.

**Keywords:** Facebook, political communication, social media, speech acts, status update

**JEL Classification:** F43, N17, N70, O47

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## Correspondence:

Yog Raj Lamichhane  
email: lcyograj@gmail.com

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**Introduction**

In politics, people can support politicians by following them on social media. Steinberg (2015) argues that following a politician's page is equivalent to wearing a campaign button, having an extra-large sticker on a car, and having a sign in front of the house. A single click can work as a virtual vote for the candidates. The incorporation of social media in political campaigns in recent years allows politicians to promote themselves, communicate interactively with voters, and disseminate information without the interference of traditional media. They have evolved into semi-public and semi-private spaces where politicians can engage users in online encounters (Quinlan et al., 2018). Users can exchange content, acknowledge it with a like and interact with other users by leaving a remark on a post in diverse forms of utterances on social media.

Social media as a form of new media engage people in their networks for different forms of communication. Because of that, people can hardly escape the popular network in modern times. Carr and Hayes (2015) remark, "Social media are Internet-based channels that allow users to opportunistically interact and selectively self-present, either in real-time or asynchronously, with both broad and narrow audiences who derive value from user-generated content and the perception of interaction with others" (p. 50). Different from the earlier print and electronic media, social media provides extensive opportunities for its users. The value of the content communicated through social media can never be unilateral. Interlocutors collectively generate meanings in the process of interaction by evaluating the context.

Among diverse social media, Facebook has the largest number of users among different social networks in Nepal. It has 1,45,04,800 users accounting for 46.8% of the entire population of Nepal ("Facebook users in Nepal"). In comparison to other social networks, "most accounts on Facebook are private and its usage is based on one-way or reciprocal friendship ties. Information travels less fluidly through this medium, also due to the extensive algorithmic filtering of contents" (Stier et al., 2018, p. 54). The content shared through Facebook primarily goes to a previously connected users' community. Facebook has been classified as a social networking site that can assist users in understanding politics, building and maintaining social capital and initiating online conversations, all of which can lead to political participation (Bosch, 2018). In politics, Facebook works as a presentation and discussion forum. Facebook users can express their views, participate in discussions and just demonstrate their support for various political parties, candidates, and their ideals (Gerodimos & Justinussen, 2018). Thus, it has become a tool for a political campaign to mobilize potential voters as Bronstein et al. (2018) observe its emergence as a new type of political platform that allows politicians to express themselves uniquely. Realizing its strength, most politicians seem involved in this network.

Thus, this paper examines the Facebook status updates of the eighteen mayoral candidates in Nepal's Local Election-2022 of six metropolitan cities to identify how the five illocutionary speech acts as categorized by Searle are used in the updates by them while virtually communicating with their potential voters. Out of 293 municipalities in Nepal, there are only

six metropolitan cities. The basic requirements concerning population, revenue, infrastructure, health and education are to be fulfilled to be declared a city as a metropolitan city. Bharatpur, Biratnagar, Birgunj, Kathmandu, Lalitpur and Pokhara fulfilled these thresholds and declared metropolitan cities. During election time, the mayoral candidates of metropolitan cities are expected to have effective communication through such media for transferring information and meanings and it is also believed that that could be pragmatically understood by decoding particular speech acts performed by the users.

By collecting and analyzing the written Facebook posts of the mayoral candidates of six metropolises either from the pages or from profiles, the study adds to the current literature on social media and political communication regarding the usage of speech acts. To do so, the study primarily examines:

- How are the mayoral candidates engaged with Facebook status updates in a particular timeframe?
- How do they apply different illocutionary speech acts in their updates?
- What might be the interpretation behind using or ignoring certain speech acts in comparison to others?

In the Nepalese context, no studies have been undertaken to examine the intended meaning of lexical choices of political candidates on Facebook. This paper, therefore, primarily aims to expand the horizon of political communication associated with social media, particularly Facebook, decoding the illocutionary speech acts performed in the form of Facebook posts. Such audition of the performative speech acts of the candidates reveals the communication culture of leadership that might be adopted in the business and managerial communication.

### **Review of Literature**

In Speech Acts theory, Austin establishes the idea that language is not only used to describe or inform things but to perform. He further opines that to “say something is to do something, or in which by saying or in saying something we are doing something” (Austin, 1962, p. 12). It reveals the performative part of the language and aims to support effective communication. Rosaldo (1982) asserts that speech acts theorists try to grasp the idea that requires more than just propositions to be examined for truth: it also requires a communicative goal and as a result, the meanings conveyed by our words must be determined not just by what we say but also by who we are and what we want our audience to understand. It gives more space for contexts which can be understood as different appropriate conditions.

Concerning the functions communicated through linguistic acts, Austin (1962) categorizes the speech acts mainly into locutionary, illocutionary and perlocutionary forces of utterance. Moreover, the locutionary act signifies the fundamental act of utterance which has referential value, the illocutionary act represents the communicative purpose of the utterance and the perlocutionary act denotes the perceived effect on the interlocutor. Then, the illocutionary speech acts are further divided by Austin into “verdictives (typical examples: giving a verdict, estimating, and appraising), exercitives (examples: ordering, urging, and warning),

commissives (promising, pledging, declaring), behabitives (thanking, apologizing, and resenting), and expositives (affirming, informing, and correcting)” (Campbell, 1973, p. 285) types using performative verbs. Searle (1976) denounces the classification of the illocutionary speech acts of Austin declaring defective and argues for revisiting it to correct the prevailing faintness. In the revised taxonomy, Searle proposes an alternative classification in the forms of assertive, directive, commissive, expressive and declarative illocutionary acts. In the reviewed taxonomy, the assertive act explains the world's order by presenting a state of circumstances, the directive act tries to persuade the listener to take action, the commissive act obligates the speaker to take part in some future activity, the expressive act describes a person's mental condition and the declarative act causes a shift in the status quo by employing words to change the world. Thus, using or ignoring of particular speech acts by the specific performers might be related to their intention.

Among the studies related to computer-mediated communication, speech acts have a significant presence. Speech acts are communicative activities carried out in response to the aim of the speaker and the perception of the audience in a definite situation. Tsoumou (2020) looks at how people use their words in politically charged Facebook conversations with a dataset of over 265,147 words using speech acts and finds that “no illocutionary force could exist per se without its perlocutionary counterpart effect. Every speech act is complete as long as both forces illocutionary force and perlocutionary effect are considered indispensable parts of the utterance” (p. 80). It reflects the interconnectivity between other types of speech acts excluding the locutionary one. Differently, Abels et al. (2021) have investigated whether there is a difference in speech acts between child and adult interlocutors in the Hadza community of Tanzania and discovered that adults employ more requests for actions, questions and information to infants, but children use more assertive speech acts. The variation in the illocutionary speech in terms of age signals that the nature of doing with words also changes within an individual at different times.

Social media brings individuals into the public arena. While investigating the role of social media in enlarging democratic space in two African nations Zimbabwe and Kenya, it is explored that “digital media platforms such as Facebook pages constitute a realization and an extension of the original public sphere” (Bosch et al., 2020, p. 360-361). Such expansion leads society to more democratic practices. It seems that politicians use the platform as a virtual stage for the election campaign and as a tool for polarization. Candidates and their overt addressees prioritize subjects differently than their general audience (Stier et al., 2018). Leadership and the active members of the political parties appear to manipulate social media strategically for their political motives using diverse speech acts.

Politics is a public issue but politicians also use social media like Facebook for self-personalization. Metz et al. (2020) examine both the use and consequences of self-personalization on Facebook arguing:

The use of a more emotional and private style provides a beneficial tool for politicians’

impression management. Publishing emotional and private content yields positive effects on audience engagement, suggesting audiences' demand for more intimate and emotional impressions of public figures on the web. (p. 1)

Such emotionally loaded expressive utterance content concerning self-personalization intimately and positively contributes to persuading the audience. A study by Bronstein et al. (2018) on the different types of use of personalization elements as engagement strategies, the Aristotelian language of persuasion, the level of social media engagement in terms of likes, comments and shares and the vividness features used in the post concerning text, photographs and video in Facebook updates by the politicians from Israel during the General Election-2015 concludes that "the dominance of pathos was a salient element in the data demonstrating the politicians' need to create an effective alliance with the public and it was the element that resulted in a higher number of likes, shares and comments" (p. 551). The emotive language of the politicians seems to affect generating more feedback rather than logical and credible words. Differently, sometimes, Facebook has become a site for expressing individual depression. Seabrook et al. (2018) look for links between inconsistent harsh depression in emotional word expression on Facebook and Twitter throughout status updates and they come up with the conclusion that "instability in the negative emotion expressed on Facebook provides insight into the presence of depression symptoms for social media users, and greater variability of negative emotion expression on Twitter may be protective for mental health" (p. 13). In this way, social media has also become a tool to test not only social well-being but also mental well-being.

Nowadays, Facebook has also become a forecasting network for the election result specified by various indicators such as likes, comments, reactions and emojis. Barclay et al. (2015) identify a positive correlation between the number of 'likes' a party or its leader has on its official Facebook page and its vote share. Likewise, likes and comments have become integral parts of Facebook use. Almoqbel et al. (2018) examine inspirations for comment reading and liking on social media news articles responding to whether reading comments before or after reading the full article is related to different commenting and liking motivations as well as scrutinizing how political extremism and cultural orientation are related to users' motivations and find "cultural orientation was a salient independent variable" (p. 118) reflected through social media while discussing politics. Both culture and politics are rooted in the belief system. However, the political view seems a little weaker as compared to the culture in social media.

The review indicates that significant studies on Facebook as social media and its role in political communication are globally available but there is the scarceness of the study on how the Facebook status updates by the political candidates perform with words requesting votes in local settings. So, the study examines the written status updates on Facebook by eighteen mayoral candidates of six metropolitan cities of Nepal in the Local Election-2022 focusing on illocutionary speech acts.



## Materials and Methods

The study has analyzed the Facebook status updates of the eighteen mayoral candidates of Nepal's Local Election-2022 of all six metropolises from Nepal. That comprises Kathmandu, Lalitpur, Pokhara, Biratnagar, Birgunj and Bharatpur. The status updates of two candidates from major political parties and one independent from each metropolis were considered as data. The candidates were of three categories: an alliance of the ruling parties led by the Nepali Congress, an alliance of the opposition parties led by the Communist Party of Nepal (United Marxist-Leninist) and the self-motivated independent class in which the candidates were Balen from Kathmandu, Ganesh from Pokhara, Jagan from Bharatpur, Sarina from Lalitpur, Umesh from Biratnagar and Radheshyam from Birgunj. The links to the Facebook page of the eighteen candidates were listed in the form of references in the appendix. Generally, the first names of the candidates were highly practiced this paper as they were not matching with others. The classification of the candidates could not be done in terms of political ideology because of the ideological mismatch in these political alliances. These updates were collected from the day of nomination (April 24-25, 2022) to the start of the silence period for the poll (May 11, 2022). The official Facebook page or profile of each candidate was used to collect the posts. Excluding the pictorial and visual updates as well as shared items from other sources, the study included purely the written updates of the candidates.

The posts which did not talk about the candidacy and election were also excluded from the study though they were posted within the timeframe of the data collection. Following the protocol, finally, 394 posts were considered for analysis in this qualitative descriptive study. The candidates seemed to access Facebook pages and profiles publicly. Thus, no consent was taken from the candidates to use the updates for the analysis. The status updates from the candidates' Facebook pages or profiles were manually collected simply by copy-pasting them on word files. Among various social media in Nepalese context, Facebook is selected because of its popularity.

As the study aims to identify the communication strategies of the political candidates connecting to performative speech acts on Facebook posts, the data were classified in terms of five illocutionary speech acts; assertive, directive, commissive, expressive and declarative according to the classification of speech acts proposed by Searle (1976). Actually, that became the theoretical base for the study.

## Results and Discussion

To reflect different kinds of speech act used by the mayoral candidates of metropolitan cities of Nepal in the Local Election-2022, the study concentrates on illocutionary acts classified by Searle.

### *Candidates, Status, Speech Acts and Metropolis*

The following table shows the list of six metropolitan cities of Nepal and includes the list of eighteen mayoral candidates that comprises three candidates from each metropolis. The number

of written status updates by the individual candidates is categorized into five illocutionary speech acts. The total use of these acts in the updates is shown in number and percentage.

**Table 1**

*Candidates' Names, Metropolises and Frequency and Percentage of Five Illocutionary Acts as Classified by Searle*

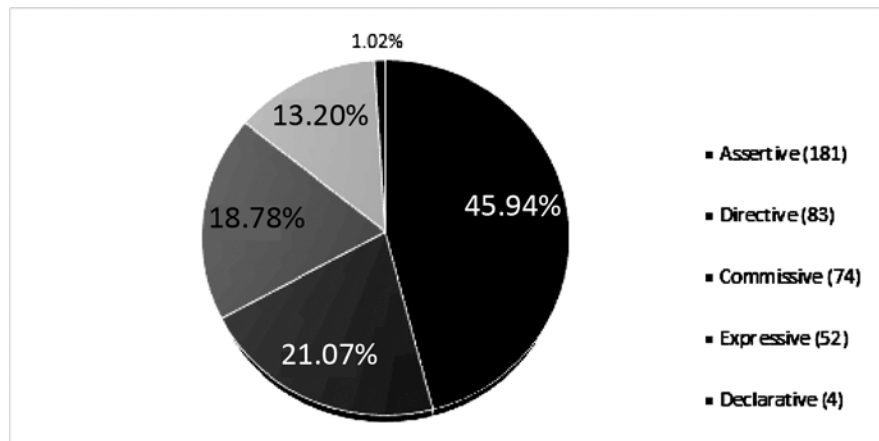
| Types of Illocutionary Acts      |           |            | Assertive |       | Directive |       | Commissive |       | Expressive |       | Declarative |      | Σ   |
|----------------------------------|-----------|------------|-----------|-------|-----------|-------|------------|-------|------------|-------|-------------|------|-----|
| S/N                              | Candidate | Metropolis | F         | %     | f         | %     | f          | %     | f          | %     | f           | %    |     |
| 1                                | Balen     | Kathmandu  | 4         | 30.76 | 1         | 7.69  | 2          | 15.38 | 6          | 46.15 | 0           | 0    | 13  |
| 2                                | Sagar     | Biratnagar | 12        | 54.54 | 1         | 4.54  | 9          | 40.9  | 0          | 0     | 0           | 0    | 22  |
| 3                                | Dhan      | Pokhara    | 7         | 43.75 | 4         | 25    | 3          | 18.75 | 2          | 12.5  | 0           | 0    | 16  |
| 4                                | Ganesh    | Pokhara    | 3         | 50    | 1         | 16.66 | 0          | 0     | 2          | 33.33 | 0           | 0    | 6   |
| 5                                | Keshav    | Kathmandu  | 3         | 13.04 | 7         | 30.43 | 7          | 30.43 | 5          | 21.73 | 1           | 4.34 | 23  |
| 6                                | Srijana   | Kathmandu  | 16        | 64    | 3         | 12    | 3          | 12    | 3          | 12    | 0           | 0    | 25  |
| 7                                | Renu      | Bharatpur  | 6         | 54.54 | 0         | 0     | 1          | 9.09  | 4          | 36.36 | 0           | 0    | 11  |
| 8                                | Krishna   | Pokhara    | 17        | 34    | 15        | 30    | 12         | 24    | 5          | 10    | 1           | 2    | 50  |
| 9                                | Bijay     | Bharatpur  | 2         | 40    | 1         | 20    | 1          | 20    | 1          | 20    | 0           | 0    | 5   |
| 10                               | Jagan     | Bharatpur  | 8         | 66.66 | 1         | 8.33  | 0          | 0     | 3          | 25    | 0           | 0    | 12  |
| 11                               | Chiri     | Lalitpur   | 7         | 29.16 | 15        | 62.5  | 2          | 8.33  | 0          | 0     | 0           | 0    | 24  |
| 12                               | Hari      | Lalitpur   | 0         | 0     | 1         | 33.33 | 0          | 0     | 2          | 66.66 | 0           | 0    | 3   |
| 13                               | Sarina    | Lalitpur   | 4         | 26.66 | 2         | 13.33 | 2          | 13.33 | 7          | 46.66 | 0           | 0    | 15  |
| 14                               | Nagesh    | Biratnagar | 3         | 21.42 | 0         | 0     | 4          | 28.57 | 7          | 50    | 0           | 0    | 14  |
| 15                               | Rajesh    | Birgunj    | 38        | 53.52 | 3         | 4.22  | 27         | 38.02 | 3          | 4.22  | 0           | 0    | 71  |
| 16                               | Vijya     | Birgunj    | 38        | 92.68 | 0         | 0     | 0          | 0     | 1          | 2.43  | 2           | 4.87 | 41  |
| 17                               | Umesh     | Biratnagar | 4         | 12.12 | 27        | 81.81 | 1          | 3.03  | 1          | 3.03  | 0           | 0    | 33  |
| 18                               | Radhe     | Birgunj    | 9         | 90    | 1         | 10    | 0          | 0     | 0          | 0     | 0           | 0    | 10  |
| Total Performance of Speech Acts |           |            | 181       |       | 83        |       | 74         |       | 52         |       | 4           |      | 394 |

*Note.* Only the first names of the mayoral candidates are written in the above table.

The table 1 incorporates the names of eighteen mayoral candidates of six metropolises, their metropolises, and usages of five illocutionary speech acts classified by Searle during the local election, as well as the frequency and percentage of those speech acts.

### ***Occurrence of Diverse Speech Acts in Facebook Updates***

The following figure shows the categorization of all 394 Facebook posts in terms of the use of different illocutionary speech acts as selected for the analysis where assertiveness covers nearly half among the total performances of speech acts.

**Figure 1***Frequency of Speech Acts in Facebook Status Updates*

*Note.* It is the frequency of all the selected status updates for the study.

The above figure shows the total usage of assertive, directive, commissive, expressive and declarative acts by the candidates which are 45.94%, 21.07%, 18.78%, 13.20% and 1.02% respectively. Among five illocutionary acts, all the mayoral candidates, except one, have used assertive speech acts in their status updates. Among assertive interlocuters, there is a variation that the usage ranges from 12.12% to 92.68%. Surprisingly, the usage of declarative speech acts is rare. Out of 394 status updates selected for this study, only four updates represent the declarative speech act. One candidate has written two declarative statuses and the other two candidates have posted single status concerning it. This study differs from the study of Mohamad et al. (2018) on Facebook status updates by an apostate of Islam where “expressive speech act is the most frequent speech act (33%, n=2), followed by the directive (27%, n=177), assertive (22%, n=141), and commissive (18%, n=115), respectively” (p. 226). The variation can be perceived normally that the average result of the political Facebook users can be different in terms of their settings and social character.

This study has identified assertive and directive speech acts as the first and second predominant forces of utterance respectively. Likewise, the study of Sri and Thoyyibah (2017) regarding the teachers’ talk in a classroom interchangeably finds directive and assertive speech acts as the first and second dominant forces of utterance covering 70% and 21% of the usage of speech acts respectively. Similarly, in this study, the average use of commissive acts covers 18.78% and expressive acts cover 13.20%, whereas the study of Sri and Thoyyibah (2017) reveals the presence of only 6% and 3% of expressive and commissive speech acts respectively. It shows that the content related to feelings and commitment is less in teachers’ talk. This study has also explored that the usage of expressive acts by the candidates is just 13.20% in total.

However, Carr et al. (2012) examine the usage of status messages on social network sites of students from a public university in the Midwest United States and find the excessive usage of expressive speech acts that represents almost 60% of updates comprising emotion toward the audience. A similar type of result is also found in the study among Pakistani youth from

the eighteen to twenty-four age group, which explores that the “Status messages were most frequently constructed with expressive speech acts, followed by assertive and directives” (Ilyas & Khushi, 2012, p. 500). However, in this study, assertive speech acts are followed by directive and commissive. Then only, the status updates are formed with expressive speech acts.

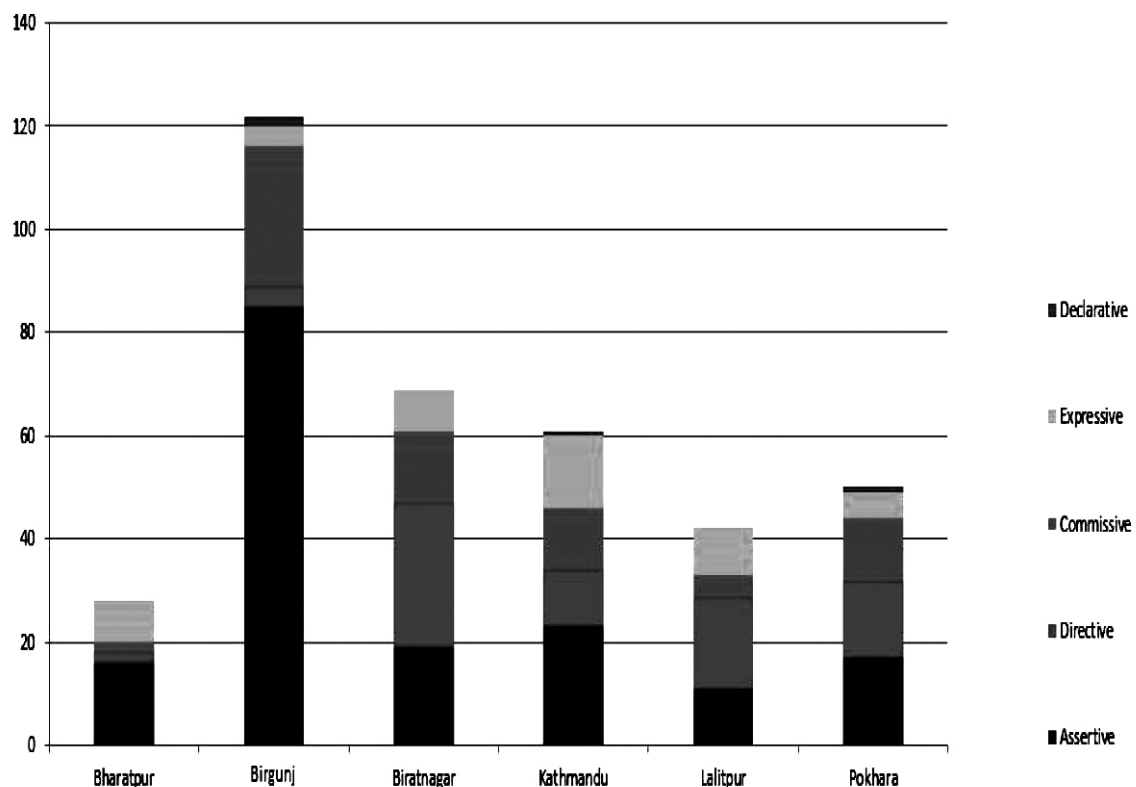
About a fifth of the total selected Facebook status updates in this study perform commissive speech acts which are four times more in comparison to the study on the first prime ministerial announcement of Malaysia and Singapore (Krishnan et al., 2021) concerning Covid-19. In this sense, the usage of the commissive speech act seems satisfactory.

#### *Six Metropolises and Five Speech Acts*

The following figure shows the proportion of the different speech acts used by the candidates from six metropolitan cities of Nepal where Birgunj stands first.

**Figure 2**

*The City-wise Frequency of Different Speech Acts in Status Updates*



In terms of 6 metropolitan cities, as shown in Figure 2, the three candidates from Birgunj collectively contribute the highest number of written updates on Facebook. The number of updates of the candidates from Biratnagar and Kathmandu is somehow similar. Likewise, the updates of the candidates from Pokhara and Lalitpur are nearly the same in counts. Moreover, the Facebook status updates of the candidates from Bharatpur are the least in number. While counting the number of status updates, the updates from Birgunj are four times more than Bharatpur. Again, while comparing the number of individual status updates from the other five

metropolitan cities, the number of usages of the single assertive speech acts from Birgunj is significantly high.

Particularly, the mayoral candidate of Birgunj, Vijaya Sarawagi has mostly performed assertive acts but he fails to use directive and commissive speech acts. On the contrary, the least use of the assertive act; the mayoral candidate of Biratnagar, Umesh Kumar Yadav has used the highest directive act. The studies on the students at Nommensen HKBP University of Indonesia regarding the post and comments on students' Instagram accounts and the defamation act of Indonesian people on social media such as Instagram, Twitter and Facebook during 2017-2019 have similarly identified assertive illocutionary speech act as the most dominant speech act (Hidayatillah et al., 2021; Natalia et al., 2022) as Vijaya of this study.

Exceptionally in totality and significantly in the case of Vijaya, two declarative usages of speech acts are experienced. Krishna Thapa and Keshav Sthapit have also used declarative speech acts in their single status updates. Moving a step forward, a study by Faizin et al. (2018) establishes a surprising result where there is total absenteeism of declarative speech acts in the usage of WhatsApp messages by Indonesian adults who have different educational backgrounds. The result of this study concerning the rare use of declarative speech act can be accepted normally as the earlier result of Indonesia.

Among eighteen mayoral candidates, there lies only three female candidates. Renu Dahal and Srijana Singh have contested representing political parties and Sarina Lakhe has stood independently. These two female candidates from political parties have dominantly used assertive speech acts in their Facebook statuses whereas the independent candidate, Sarina has prominently used expressive speech acts in her status updates. The two female candidates from political parties have used the majority of their status updates using assertive speech acts but the independent woman candidate has used expressive speech acts nearly in half of her total Facebook posts. Hutahae and Hamuddin (2018) in a study regarding the usage of illocutionary acts by Donald Trump and Hilary Clinton in the presidential election 2016 find Hilary's inclination to expressive speech acts more than other performative speech acts like Sarina of this study. However, in totality, this study has shown less use of expressive speech acts in the written status updates of the candidates. As Sarina from Lalitpur, the independent candidate from Kathmandu, Balen Shah in his Facebook posts has used maximum expressive speech acts. Out of his thirteen posts, six posts are formed using expressive speech acts and the remaining seven are formed using assertive, directive and commissive speech acts.

Regarding the excessive usage of different illocutionary acts in the Facebook status updates, Rajesh Man Singh and Vijaya Sarawagi have used a maximum number of statuses infused with assertiveness. Out of 181 statuses in assertive speech acts in the study, these two candidates have equally used thirty-eight assertive speech acts. In the case of directive speech, Umesh from Biratnagar has posted the highest number of his statuses using the directive speech acts. Among his total Facebook statuses, a third of the statuses belong to directive speech acts. Moreover, Rajesh has used the highest commissive speech acts among all eighteen candidates.

Out of a total of seventy-four statuses in commissive speech acts in this study, only he has used twenty-seven statuses. Regarding expressive speech acts, out of a total of fifty-two statuses of expressive speech acts in this study, Nagesh Koirala from Biratnagar and Sarina Lakhe from Lalitpur have significantly used expressive speech acts which is closer to the majority of their total updates. The usage of expressive speech acts by Hari K. Byanjankar counts for more than 60% of his total status updates. However, the percentage has raised because he has used two statuses using expressive speech acts among his total three updates in this study. Finally, in the case of declarative speech acts, Vijaya has used half of the declarative acts among the total number of declarative speech acts in this study. Exceptionally, it is also found in this study that Vijaya is only the candidate who has used the majority of two illocutionary speech acts writing statuses among 6 candidates.

Regarding the maximum and minimum usage of status updates in the election campaign, Krishna and Rajesh have posted fifty or more than fifty statuses whereas Bijaya from Bharatpur and Hari from Lalitpur have five or below five Facebook statuses from the day of their nomination until the election silence period before the voting day. Out of eighteen mayoral candidates, two have used all five forms of illocutionary speech acts, seven candidates have used four forms of these acts and the other seven candidates have used three different illocutionary speech acts in their status updates. Likewise, the remaining two candidates have used only two forms of the acts.

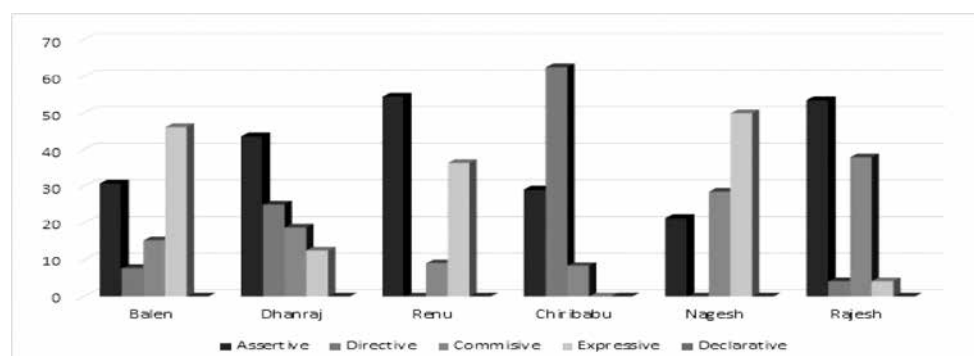
Based on the usages of the different illocutionary speech acts by the eighteen mayoral candidates from 6 metropolises on social media during election time in Nepal, a pattern of political communication can be identified but that can be further rationalized by involving more updates from diverse social media of the candidates from the different wards, rural municipalities, municipalities and sub-metropolises in case of the local election and the federal parliament as well as national assembly in national level.

### *Using Speech Acts by Winning Candidates*

The following figure represents the elected Candidates-wise percentage of the use of different illocutionary speech acts in the Facebook status updates but serves no comprehensive pattern.

**Figure 3**

*Elected Candidates-wise Percentage of the performance of Speech Acts in the Updates*





The above figure indicates the use of illocutionary speech acts only by the six winning mayoral candidates in the Local Election-2022. Among winning candidates, Dhanraj, Renu, and Rajesh seem to use assertive, Balen and Nagesh appear to use expressive and Chiribabu seems to use directive speech acts much in their Facebook posts. However, the experience is not fundamentally different from the overall experience of all eighteen candidates, especially in the case of assertive and declarative speech acts. It indicates that the use of particular speech acts by the candidates does not have any relation to winning or losing the election.

### Conclusions and Recommendations

The results and their discussions in this study support to notice that there is excessive practice of assertive speech acts and rare exercise of declarative speech acts in the Facebook status updates by the eighteen mayoral candidates of six metropolitan cities of Nepal in the Local Election- 2022. The study finds no association between the use of a particular type of speech act and the number of votes obtained by the candidates. Likewise, no relationship is found between the use of particular speech acts and the nature of candidacy either from political party or independent side. Generally, expressive and commissive forms of illocutionary speech acts are predominant in political discourses and even within them, the commissive acts hold the uppermost application in the language of politicians (Mišić Ilić & Radulović, 2015). In this regard, the politicians from Nepal seem strategically illiterate in terms of doing politics with words. Precisely, communicating the truth or the falsity of the proposition in the form of excessive assertive speech acts by the mayoral candidates in this study signals the habitual reporting nature of the politicians rather than developing logical and emotional speech acts for moving the voters. At the same time, as the study has shown no variation in the pattern of using speech acts in the winning and losing mayoral candidates. So, it seems illogical to infer the effectiveness of particular speech acts to change the voting pattern. Although the article focused only on Facebook status updates of the candidates of the Local Election-2022 in Nepal, this result cannot be generalized to different types of election and leaders. The further incorporation of status updates from diverse social media and elections as well as feedback concerning them from the voters' side may reflect more reliable results related to the culture of effective political communication.

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**Appendix**

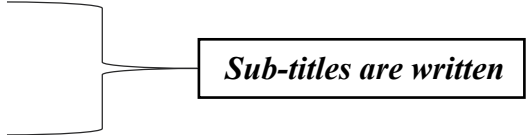
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