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# DEPAN

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**Democrat Professors' Association, Nepal**

Nepal Commerce Campus Unit

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# Editorial

The **Democrat Professors' Association, Nepal (DEPAN)**, established in 2063 B.S. (2006), continues to be an active force in advocating for the welfare, security, and rights of Nepalese professors across all universities. The association's core objectives are rooted in fostering democratic values, promoting pluralism, and contributing to sustainable development, while also working towards peace and progress throughout the country. One of the primary focuses of DEPAN has always been enhancing the quality of higher education through extensive research activities, while simultaneously nurturing the academic growth of its members.

**DEPAN: A Peer Reviewed Journal of Multidisciplinary Research** remains committed to publishing thought-provoking articles contributed by distinguished academicians from various disciplines and academic institutions. The journal adheres to a multidisciplinary approach, including but not limited to fields such as management, accounting, finance, economics, statistics, literature, linguistics, environmental studies, humanities, and social sciences. It serves as a shared platform for members engaged in teaching, learning, and research activities, fostering intellectual exchange among researchers and educators.

This volume of DEPAN is particularly valuable for those who seek to innovate and contribute to the development of our nation through rigorous academic inquiry and research. It provides a space for researchers and thinkers to explore new ideas that can inspire and influence the national discourse. We would like to extend our heartfelt gratitude to all the authors for their timely submissions and to all the distinguished personalities who have offered their unwavering support. Additionally, we are deeply thankful to the contributors whose valuable insights have played a pivotal role in making this journal a success.

We are proud to present **Volume 7, 2025** of DEPAN: A Peer Reviewed Journal of Multidisciplinary Research.

December, 2025

Editorial Board



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# Assessing the Socio-economic Impact and Post-pandemic Recovery of Bhaktapur's Tourism Sector

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## Abstract

*Background:* The COVID-19 pandemic caused significant disruptions to the global tourism industry, including business, economic instability, and a substantial loss of jobs. One of the hardest-hit industries, tourism, was almost entirely shut down by travel restrictions and health controls. Numerous companies that depended on tourism suffered, and Bhaktapur, a city in Nepal famous for its UNESCO World Heritage sites, saw severe economic effects.

*Methodology:* This study assesses the socioeconomic effects of the COVID-19 pandemic on Bhaktapur's tourism industry using primary and secondary data sources. A comparison of pre-pandemic and post-pandemic tourism patterns was conducted using surveys and interviews with residents, entrepreneurs, and staff members of the tourism sector. The collected data was examined using statistical tools such as correlation analysis, trend analysis, and percentage changes.

*Results:* The findings show a dramatic decline in tourism-related income and employment, with visitor arrivals in 2020–21 falling by 98.5% from 2019–20. The socioeconomic effects, which were especially apparent among small businesses, street vendors, and local guides, worsened the poverty and economic instability in the area.

*Conclusion:* The findings indicate the need for recovery plans that are urgently focused, such as investments in digital marketing, infrastructure upgrades, and public-private partnerships, in order to boost Bhaktapur's tourism industry. Additionally, government initiatives should focus on improving resilience in order to safeguard the travel and tourism industry from future global crises.

**Keywords:** COVID-19, Tourism, Revenue, Economic, Recovery, Pandemic.

## Introduction

One of the most culturally significant cities in Nepal, Bhaktapur, has a large population of people employed in the tourism industry. Nepal's Bhaktapur has always been a well-liked travel destination because of its vibrant cultural past and ancient buildings (Sharma, 2020). The 301,012 tourists that visited the city in 2014 illustrate its importance to Nepal's tourism economy (Nepal Economic Forum, 2021). Nevertheless, the global COVID-19 epidemic, which began

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in late 2019, significantly curtailed international travel, which had a detrimental effect on Bhaktapur's journey. Bhaktapur still has a long way to go before visitor numbers return to their pre-pandemic levels, even if there has been some improvement in foreign tourism by 2024. This study focuses on the socioeconomic impacts of COVID-19 on Bhaktapur's tourism sector and its implications for the local community.

### **Literature Review**

Because it generates foreign cash, jobs, and cross-cultural contacts, tourism plays a major role in Nepal's economy. In 2023, tourism brought in NPR 327.9 billion, or 6.1% of Nepal's total GDP, and brought in NPR 61.5 billion in foreign exchange earnings (Investment Board Nepal [IBN], 2023). Furthermore, the tourist industry supports 1.19 million jobs, or 15.2% of all jobs (The Kathmandu Post, 2024). The COVID-19 pandemic had a devastating impact on tourism globally in 2020, causing a 74% decline in foreign visitor numbers (UNWTO, 2021). Due to mounting pandemic concerns, the government discontinued the "Visit Nepal 2020" campaign in March 2020, resulting in a decline in the tourism sector's GDP contribution from 7.5% in 2019 to 4.3% in 2020 (UNWTO, 2021). The elimination of COVID-19 vaccination requirements for tourists by June 2023 was a sign that tourism was returning to normal (U.S. Embassy in Nepal, 2023). A major factor in the sector's recovery has been the government's efforts to endorse vaccination campaigns and other financial initiatives. Nepal also benefited from the diplomatic use of immunizations, which boosted trade and tourism, according to the International Institute for Development Studies (IIDS, 2020). According to the World Travel & Tourism Council (2024), the direct contribution of travel and tourism to Nepal's GDP is predicted to grow by 4.1% annually between 2024 and 2034, reaching NPR 186.4 billion (approximately 2.5% of GDP), driven by increased tourist arrivals, improved infrastructure, and continued government support.

### **Methodology**

A mixed-method strategy is used in this study to gather data, which includes both qualitative and quantitative methods. Using surveys and interviews, primary data was collected from 70 households, 18 street vendors, 15 store owners, 18 local guides, and 19 tourism entrepreneurs who are involved in the local tourism business. Secondary data came from municipal records, government reports, and relevant literature. To assess the socioeconomic impacts of the COVID-19 pandemic on Bhaktapur's tourism sector, trend analysis, percentage changes, and correlation analysis were employed.

### **Sample Distribution**

Category	Sample Size
Households	70
Street Vendors	18
Tourism Businesses (Hotels & Restaurants)	15
Local Tour Guides	18
Tourism Entrepreneurs (Souvenir Shops)	19

### **Results and Discussion**

#### **Tourism Trends in Bhaktapur**

There are notable differences between the 2015 and 2020 visitor arrival records, especially due to the 2015 earthquake and the COVID-19 pandemic. Tourism saw a sharp decline as a result of the outbreak, and it only partially recovered in 2021.

Table 1

Tourism Trends from 2052/53 B.S. to 2062/63 B.S.

Year	No. of Tourists	Trend
2052/53	112,740	Increasing

Year	No. of Tourists	Trend
2053/54	110,852	Increasing
2054/55	121,350	Increasing
2055/56	140,077	Increasing
2056/57	148,117	Increasing
2057/58	141,312	Increasing
2058/59	69,700	Decreasing
2059/60	54,561	Decreasing
2060/61	84,914	Increasing
2061/62	68,467	Decreasing
2062/63	69,411	Increasing
Total	1,121,501	

Between the years 2052–2053 and 2057–2058 B.S., Bhaktapur's tourists steadily increased. But in 2058/59 and 2059/60 B.S., there was a decline, either due to political disturbance or economic difficulties. Up until 2062/63 B.S., there was a recovery that began in 2060/61 B.S.

Table 2

Tourism Trends from 2069/70 B.S. to 2078/79 B.S.

Year	No. of Tourists	Percentage Change
2069/70	147,898	-
2070/71	153,895	+4.05%
2071/72	135,015	-12.27% (Earthquake)
2072/73	61,747	-54.26% (Earthquake)
2073/74	108,853	+76.31% (Recovery)
2074/75	127,634	+17.28%
2075/76	141,216	+10.63%
2076/77	93,434	-33.84% (COVID-19)
2077/78	1,383	-98.52% (COVID-19)
2078/79	22,087	+1497.68% (Recovery)
Total	993,262	

The above-mentioned study was based on the data from the table for Bhaktapur's tourism patterns from 2069–2070 to 2078–2079 B.S. It explains the impact of external events on tourism, such as the 2015 earthquake, the COVID-19 pandemic, and the subsequent recovery. According to the data, the pandemic caused a significant decline in 2076–2077 and 2077–2078 B.S., but in 2078–2079 B.S., visitor visits had a stunning recovery, rising by 1497.68%.

Table 3

Economic Impact of COVID-19 (Entrance Fee Revenue)

Year	No. of Tourists	Ticket Fee (Rs.)	Total Revenue (Rs.)
2069/70	147,898	1,500	221,847,000
2070/71	153,895	1,500	230,842,500
2071/72	135,015	1,500	202,522,500
2077/78	1,383	1,500	2,074,500
2078/79	22,087	1,500	33,130,500

With 153,895 visitors in 2070–71 B.S., admission charge earnings peaked at Rs. 230,842,500. However, the

COVID-19 lockout caused revenue to drop sharply to Rs. 2,074,500 in 2077/78 B.S. Revenue climbed to Rs. 33,130,500 in 2078/79 B.S. as a result of an increase in tourists.

Table 4

Employment in the Tourism Sector Before and After COVID-19

Category	Employment Pre-COVID (2019)	Employment Post-COVID (2021)	Percentage Change (%)
Tourist Guides	250	80	-68.0
Hotel/Restaurant Staff	1,500	600	-60.0
Souvenir Shop Owners	300	100	-66.7
Street Vendors	400	150	-62.5

The severe socio-economic impact of the pandemic was shown by a chi-square test that confirmed a statistically significant drop in employment across all categories (p-value < 0.05).

### Discussion

The tourism sector of Bhaktapur was strictly impacted by the COVID-19 pandemic, leading to a 98.5% loss in visitors between 2020 and 2021. An example of this decline was the significant decline in entry charge income during the epidemic transported on by rigorous travel restrictions and lockdowns. The data indicates a disastrous impact on the local economy, with tourism-related revenue production considerably declining throughout this period. The tourism business in Bhaktapur exhibited signs of recovery in 2021–2022, despite these challenges, as indicated by a stunning 1,497.68% rise in visitor arrivals. This recovery resulted in a notable boost in revenue, while it was still much below pre-pandemic levels. Although the dynamics and challenges will be different, the post-pandemic recovery increases the likelihood of tourism returning. Employment was also significantly impacted by the pandemic, with the tourism sector suffering significant job losses. Local guides, hotel and restaurant staff, gift shop owners, and street vendors were the hardest-hit groups. The tourism industry has experienced up to 68% job losses, which emphasizes the urgent need for recovery programs focused on labor reintegration and sector stabilization.

Even though recovery efforts have begun, it is evident that Bhaktapur's tourism industry need extensive and long-term measures to regain its pre-pandemic vigor. Important recovery efforts should include the creation of public-private partnerships, infrastructure improvements, and digital marketing campaigns to boost sector resilience. Policymakers must place a high premium on developing adaptable regulations that can shield the travel and tourism sector from impending global upheavals.

### Conclusion

Due to the COVID-19 epidemic, Bhaktapur's tourism sector has been severely impacted, with significant declines in visitor numbers, revenue, and employment. Massive job losses and unstable economies are among the socioeconomic effects that require immediate attention. Reconstruction plans should incorporate digital marketing, infrastructure development, and forming partnerships between the public and private sectors to boost resilience and ensure sustainable growth in Bhaktapur's tourism industry.

### Recommendations

The following crucial actions should be taken to revive the tourism industry after the pandemic:

**Digital Marketing & Promotion:** Boost your online visibility via influencer partnerships, social media, and virtual travel.

**Infrastructure & Sustainability:** To enhance the experience of tourists, upgrade roads, sanitary facilities, and environmentally friendly projects.

**Public-Private Partnerships:** By working together, the public and private sectors can aid in the financial recovery.

**Workforce Support:** Put in place financial assistance and reskilling initiatives for small enterprises and tourism employees.

**Policy and Crisis Management:** Create flexible visa requirements, adaptable policies, and crisis management plans.

**Promotion of Culture and Heritage:** To draw tourists, plan cultural activities and community-based travel.

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# Do Remittances Influence Capital Market Development? Evidence from the Nepal Stock Exchange

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## Abstract

Remittances are a significant source of income for many developing countries, including Nepal, where they contribute significantly to GDP. These inflows influence household consumption, savings, and further they may impact capital market activities. This study explores how remittances affect stock market performance, focusing on the stock market performance. The aim is to assess both short- and long-run effects of remittances on market growth, liquidity, and investor behavior. Using monthly time series data from June 2010 to July 2024, the study employs a quantitative approach with econometric models, including “co-integration tests, Vector Autoregression (VAR), Wald tests, and Granger causality analysis”. Data were collected from secondary sources such as “the Nepal Stock Exchange, Nepal Rastra Bank, World Bank, and listed companies' financial reports”. The analysis was conducted using EViews 10. The findings reveal that the optimal lag length is 1. Co-integration tests show no long-term relationship between remittances and the stock market. The VAR model results indicate that remittances have no significant short-run impact on the Nepse index, which is largely influenced by its own previous values. The Wald test approves that remittance lags do not jointly affect the index. Granger causality tests reveal no causal link from remittances to the stock index, though the index may slightly influence remittance flows. This study adds new understandings to existing literature and provides policy implications for enhancing the role of remittances in Nepalese capital market development.

**Keywords:** Nepal Stock Market Dynamics, Johanson Cointegration, Vector Autoregression, and Remittance.

**JEL Classification:** G11, G12, G14, G41

## Introduction

Remittances have become a significance source of income for many developing countries. They provide a steady flow of foreign exchange and significantly contribute to national revenue. In Nepal, remittance inflows make up a large part of the national' GDP. These inflows not only support household consumption but also affect macroeconomic activities, including the capital

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market.

According to the Life-Cycle Hypothesis (Friedman, 1957), public plan their consumption and savings based on expected future income. In this context, remittances received by households' goods can lead to increased savings, which may be invested in the stock market. In a country like Nepal, remittances can encourage more households to participate in the stock market.

The stock market plays a key role in a national economic growth by helping to mobilize capital and offering investment opportunities. A healthy and liquid stock market supports long run growth by channeling funds into productive sectors. However, in emerging markets, stock market often suffers from limited liquidity, high volatility, and low investor participation. Remittance inflows support to address these challenges by boosting savings, increasing investment, and improving participation in financial markets.

Thapa (2023a) studied that remittances in Nepal lead to bigger household savings and increased investment in stocks. This enhances liquidity, influences trading volume, and affects investor confidence. Similarly, Issahaku et al. (2017) found the link between remittances, banking sector growth, and stock market development. The study findings show that in low-remittance countries, remittances can hinder equity market development, while in countries that depend heavily on remittances, they support market growth. In developing countries, remittances and stock markets may influence each other.

Although remittance inflows are rising, their exact influences on stock market performance is still unclear, especially in developing nations like Nepal. Most research so far has focused on the wider economic impact of remittances, not on specific stock market consequences like growth, liquidity, or volatility. This study aims to fill that gap by examining how remittance inflows affect the Nepal Stock Exchange (NEPSE), with a focus on their role in stock market growth and investor behavior. The key research questions include: Do remittance inflows significantly influence the growth of the NEPSE index? and, Is there a causal link between remittances and stock market returns? The purpose of this study is to explore how remittances impact stock market performance and whether they can be considered a major factor in determining stock market trends in Nepal. The research uses monthly time series data to examine long- and short-term relationships, applying econometric models including Granger causality, co-integration tests, the Johansen approach, and the Wald test methods not commonly used in earlier studies. By doing so, this research aims to deepen the understanding of remittance impacts on capital markets in emerging economies and provide useful insights for policy makers. The structure of the paper is as follows: Section 1: Introduction, Section 2: Literature Review, Section 3: Data and Methodology, Section 4: Empirical Results, Section 5: Conclusion and Policy Recommendations

## **Review of Literatures**

Past studies have shown that remittances support to improve stock market performance in developing countries. Remittances do so by reducing market volatility, increasing liquidity, and encouraging more people to invest. According to Portfolio Theory (Gunzberg, 2008), investors diversify their assets to reduce risk. In developing countries, remittance recipients choose to invest part of their money in the stock market, increasing market liquidity and depth. In Nepal, rising remittance inflows may encourage households to invest in stocks, helping to expand the capital market. Economic Growth Theory, introduced by (Solow, 1956), highlights the role of financial markets in driving economic development. In this context, remittances enhance savings, which increases the funds available for stock market investment.

Thapa (2025) examined in the Nepalese context, remittances are a major source of capital that supports such investment and positive long-term link between remittances and stock market growth in Nepal, mainly through increased savings and investment. Azizi (2020), using data from 124 countries, showed that higher remittances lead to more bank deposits, domestic credit, and financial development. Ho (2019) observed that in African countries, remittances enhance market liquidity, though the impact depends on the country's financial infrastructure. Billmeier and Massa (2007) found that remittances reduce stock market volatility during downturns. Shrestha and Bhatta (2018) agreed, noting a stabilizing role of remittances in Nepal. Hosseini et al. (2011) showed that remittances improve liquidity in countries like India, Nepal, and Pakistan.

Hsing (2014) sightsaw macro-economic determinants affecting stock market. The study reveals a positive association between Hungarian and Estonian stock markets with real GDP, debt/GDP ratio, and the German stock index, while adverse correlations were found with interest rates, expected inflation, and euro area government bond yields. Thapa (2023b) found that while remittances affect Nepal’s stock market, the index is mostly influenced by its own past values and exchange rates. Anh (2015) concluded that remittances help stock market development, showing a two-way causal relationship. Lingaraja et al. (2020) found short-term links between Asian and developed stock markets, supporting diversification for global investors. Shrestha and Bhatta (2018) emphasized that remittances increase available capital for stock investments. Thapa (2019) found that remittances reduce market volatility in Nepal, especially during economic crises. Aremo et al. (2020) showed that in emerging Asian countries, remittances boost stock market liquidity and attract more investors.

**Research Materials and Methods**

This study adopts a quantitative research approach, integrating longitudinal and time series analysis to examine the relationship between remittances and the stock market index in Nepal. The key objective is to explore how the remittance interacts with market over time. The analysis depends on secondary data sourced from reputable institutions, including “the Nepal Stock Exchange, Nepal Rastra Bank, Securities Board of Nepal, World Bank publications, and financial statements of listed companies”. These data sources span the period from June 2010 to July 2024, capturing approximately 170 monthly observations. Where necessary, field visits were conducted to supplement the data collection process. The data analysis was performed using Microsoft Excel and EViews 10. The study applies various econometric techniques, such as stationarity testing, lag length determination, cointegration analysis, Vector Autoregression (VAR) modeling, Wald tests, Granger causality tests, and variance decomposition. These tools facilitate the identification of causal and dynamic interrelationships among the selected macroeconomic indicators. The methodological process begins with checking whether the variables are integrated of order one (I(1)), followed by selecting the optimal lag length. It then assesses the existence of cointegration among the variables before employing the VAR model to capture short-run dynamics. By utilizing the VAR framework, the study provides a detailed analysis of the temporal linkages between remittance inflows and stock market movements in the Nepalese context.

**Results and Discussions**

Researchers have long discussed how changes in remittance inflows affect the economy. Several studies have found a link between remittances and movements in stock prices. Table 1 shows the results of lag order selection based on three criteria: SC, AIC, and HQ. All three suggest that the best lag length for the model is 1, as shown by the asterisks. While the Log L values improve as the number of lags increases, the L R test indicates that adding more lags beyond 1 does not significantly improve the model.

Table 1:

Lag-Order-Selection-Criteria for Remit to Index

Lag	Log L	LR	FPE	AIC	SC	HQ
0	-4573	NA	2.02e+17	46	47	46
1	-3675	1769.2	2.77e+13	37*	37*	37*
2	-3669	10.7	2.73e+13	37	37	37
3	-3664	9.4	2.70e+13	37	37	37

Source: Author Calculation by using Eviews-10

The FPE values become slightly smaller with more lags, which suggests a better fit. However, AIC, SC, and HQ confirm that using lag 1 gives the most efficient model.

Table 2 presents outcome from a co-integration test assuming a linear trend. The analysis focuses on two variables remit and index and uses their first differences with lag intervals from 1 to 3. The Johansen Trace and Max-Eigenvalue tests were used to determine if there is a long-term relationship between them. The null hypothesis (no

co-integrating relationship) is tested, and the results show weak evidence of co-integration.

Table 2:

Trace and Max-Eigen Value Tests of Remit to Index

Lags interval (in first differences): 1 to 3				
Hypothesized No. of CE(s)	Trace values		Max-eigen values	
	None	At Most 1	None	At Most 1
Eigen value	0.03	0.02	0.04	0.01
Trace Statistic	9.32	2.52	6.82	2.52
0.05 Critical Value	15.4	3.84	14.3	3.84
Prob.**	0.33	0.12	0.53	0.11

The eigenvalues are small (0.03 and 0.01), and the trace statistics (9.32 and 2.52) are under the critical values at the 5% level (15.49 and 3.84). Since the test fails to reject the null hypothesis, the result suggests there is no long-term equilibrium between remittance and the stock index. Therefore, a VAR model is suitable for analyzing the short-term relationship.

Table 3 displays the results of the Vector Auto-Regression (VAR) model analyzing the impact between remittances and the Nepalese stock index. The results exhibits that remittances do not have a short-term impact on the stock index. The t-values for the lagged remittance variables are not statistically substantial, which means they do not explain changes in the index in the short-term. On the other hand, the past values of the stock index (Lindex) have a stronger influence on its current value. Specifically, the t-value for Lindex (-1) is high (15.95), showing a strong and significant effect.

Table 3:

Results of VAR Estimation of Index and Remit

Variables	L index	L remittance
Lindex (-1)	1.124 (0.07) [ 15.95]	0.18 (0.21) [ 1.32]
Lindex (-2)	-0.058 (0.11) [-0.55]	-0.48 (0.19) [-2.39]
Lindex (-3)	-0.083 (0.07) [-1.17]	0.307 (0.13) [ 2.32]
Lremit (-1)	0.058 (0.03) [ 1.68]	0.68 (0.07) [ 10.5]
Lremit (-2)	-0.061 (0.04) [-1.43]	-0.084 (0.08) [-1.03]
Lremit (-3)	0.011 (0.03) [ 0.34]	0.368 (0.07) [ 5.65]
C	0.033 (0.07) [ 0.45]	0.33 (0.14) [ 2.39]

Source: Author Calculation by using Eviews-10

While L remit (-1) and L remit (-3) show relatively high t-values in the remittance equation, their impact on the

stock index equation is limited. This means remittances may follow their own trend but do not significantly affect the stock market index. The constant terms are 0.033 for the index and 0.33 for remittances. These numbers indicate the base level of each variable in the absence of other influences. The R-squared values are 0.98 for Lindex and 0.96 for L remit. This means the model explains 98% of the variation in the stock index and 96% in remittances, indicating a good fit. The short-term effect of remittances on the Nepalese stock index is not statistically significant. The stock index is more influenced by its own past movements than by remittance inflows. Table 5 presents the results of the Pairwise Granger Causality Test, which observes whether one variable can help predict the other. The test is used to examine if remittances have a causal effect on the Nepalese stock index and vice versa. The two hypotheses are:  $H_0$ : “Remittances do not cause changes in the stock index” and  $H_1$ : “The stock index causes changes in remittances”.

Table 5:

Pairwise Granger Causality Tests of Remit on the Stock Market Performance

Null Hypothesis:	Obs	F-Statistic	Prob.
L remit Does Not Granger Cause L index	207	1.21	0.31
Lindex Does Not Granger Basis L remit		2.13	0.09

Source: Author calculation by using Eviews-10

According to the table, both prob. - values are higher than the standard significance level of 0.05. The p-value for "L remit does not Granger cause Lindex" is 0.31, which means that cannot reject the null hypothesis. This indicates “that remittances do not have a significant effect” on the stock index. For the reverse direction, the p-value is 0.09. Although it is greater than 0.05, it is still close. If the researcher uses a 10% significance level ( $\alpha = 0.10$ ), then the result may recommend that the stock index does influence remittances. In nutshell, remittances do not origin changes in the Nepalese stock index. However, the stock index may have a weak influence on remittance flows, depending on the significance level chosen.

The lag length model, the optimal lag, based on AIC, SC, and HQ criteria, is found to be 1. Adding more lags does not significantly improve the model's performance. Second, the co-integration analysis displays no evidence of a long-term relationship between remittances and the Nepalese stock index. The test fails to reject the null hypothesis of no co-integration. Third, the results from the VAR model show that remittances do not have any short-term effect on the stock index. Instead, the index is mainly influenced by its own previous values. Fourth, the Wald test results show that the lagged remittance values do not mutually affect the stock market at the 5% significance level, confirming the lack of short-term impact. Finally, the Granger causality test suggests that remittances do not changes in the stock index. However, the stock index may have a marginal effect on remittances, depending on the chosen significance level.

Previous research has revealed mixed results on how remittances affect stock market performance. This study adds to that discussion by showing that, in Nepalese case, remittance inflows do not have a significant short-term impact on the stock market. This finding challenges some former studies that reported a stronger connection between the two variables. While some historical studies suggest that remittances help increase market liquidity and reduce volatility especially in developing countries this study sightings limited short-term influence. For example, Thapa (2025) reported a positive long-term association between remittances and the stock market. Similarly, Azizi (2020) found that remittances enhancement domestic credit and market depth, while Ho (2019) highlighted their role in improving liquidity. These studies recommend the idea that remittances can stabilize markets, especially during economic downturns. Billmeier and Massa (2007), as well as Shrestha and Bhatta (2018), also pointed out the calming effect of remittances on stock markets. This view brings into line with the current study's suggestion that remittances may help reduce market volatility, even if their immediate statistical effect is limited. However, this study's co-integration test did not find a long- run relationship between remittances and the stock index. The weak eigenvalues and high pro-values in the Trace and Max-Eigen Value tests suggest that remittances do not lead to long-term stock market growth. Additionally, while some former studies, such as those by Anh (2015) and Thapa (2023b), found two-way causality between remittances and the stock market, this

study's Granger causality test does not align that. Instead, it suggests that the stock market may slightly influence remittance flows, which is the opposite of what many past studies concluded.

## Conclusions

This study examined how remittance inflows affect the Nepalese stock market. The study aims to fill a key gap in the existing research. It used the various econometric tools such as VAR models, co-integration tests, and Granger causality tests. The study investigated both short-term and long-term relationships between remittances and stock market performance. The findings show remittances do not have a significant short-term impact on the Nepalese stock market. The analysis revealed that the stock market is mostly influenced by its own previous values, with remittances having only a minor role in its fluctuations. Additionally, the co-integration test did not find any long run equilibrium relationship between remittances and the stock market. This result challenges earlier claims that remittances enhancement long-term market growth through increased household savings and investments. Granger causality tests also established that remittances do not cause changes in the stock market index. On the contrary, there is minor evidence suggesting that the stock index may influence remittance flows. This opposes previous research that anticipated a two-way relationship between remittances and stock market development. These findings suggest that while remittances may encourage general economic stability but it does not significantly contribute to stock market growth in Nepal. Therefore, policymakers should focus on strengthening financial systems, enhancing investor trust, and deepening equity markets to make better use of remittance inflows for economic development. In nutshell, this study offers new insights into the limited role remittances play in influencing stock markets in developing countries like Nepal. This study suggests that policymakers should prioritize improving investor confidence, financial infrastructure, and market depth to attach the potential of remittances for capital market development. The study is limited with the remittance and equity market. The researcher suggest to incorporate other important macroeconomic variables, company specific variables, and investors' perception on the stock market performance.

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# Early Marriage and Its Effect on Maternal Health in the Danuwar Community

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## Abstract

*Background:* This study examines how early marriage affects the health of Danuwar women in Melamchi Municipality, Nepal, where it is still a major social problem with wide-ranging socioeconomic and health effects. The study intends to evaluate the maternal health issues associated with early marriage, determine the major factors influencing early marriage, and examine the sociodemographic traits of women who got married young.

*Methods:* A cross-sectional study design was used, and 51 respondents were chosen by systematic random sampling from 102 early-married women identified using city records. A structured questionnaire was utilized for data collection, and descriptive and inferential statistics, such as logistic regression models and chi-square tests, were used for analysis.

*Results:* Results showed 49.01% of respondents were married before the age of 13, and 66.67% of respondents were part of joint families. There were notable maternal health issues, such as anemia (41.2%), miscarriage (14.7%), and delivery problems (32.3%), all of which were substantially linked to early pregnancy ( $p < 0.05$ ). 69.44% of respondents also said they didn't know anything about contraception. Early marriage was found to be strongly predicted by cultural customs ( $p = 0.002$ ) and illiteracy ( $OR = 3.2, p < 0.001$ ), according to logistic regression analysis.

*Conclusion:* The study emphasizes that to lessen the negative impacts of early marriage, specific community-based interventions are required, such as educational campaigns, legal support, and programs that raise awareness of reproductive health issues.

**Keywords:** Early marriage, Maternal health, Cultural norms, Socio-demographic characteristics, reproductive health education.

## Introduction

In Nepal, early marriage is a widespread problem, especially for underprivileged groups like the Danuwar. About 40% of Nepalese women get married before turning 20, which has a serious negative impact on their socioeconomic and

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health prospects (UNICEF, 2023). Cultural customs, financial difficulties, and gender norms that favor early marriage for women are the main causes of this practice's continued existence. The hazards to maternal health are disproportionately higher for adolescent moms. Adolescent pregnancies are linked to higher risks of obstetric problems, including anemia, unsafe abortions, and obstructed labor, according to the World Health Organization (WHO, 2023). To guide policy and programmatic measures, this study investigates the relationship between early marriage and maternal health outcomes among Danuwar women.

**Methodology**

This cross-sectional study was carried out in the study site. Based on municipal data, 102 early-married women were found, and 51 respondents were chosen using systematic random sampling. Data was collected using a standardized questionnaire that included closed-ended questions. Significant connections were found by statistical studies using SPSS, which included logistic regression, t-tests, and chi-square tests.

**Results and Discussion**

Table 1

Socio-Demographic Characteristics of Respondents

Family Type	Frequency	Percentage (%)
Joint	68	66.67
Nuclear	34	33.33
Total	102	100

The majority of those surveyed (66.67%) were from joint families, and 33.33% were from nuclear families. Joint family structures and early marriage were found to be significantly correlated by a chi-square test ( $\chi^2 = 7.89, p = 0.005$ ). This implies that because of societal or familial expectations and conventions, joint family systems may encourage or impact early marriage.

Table 2

Age at Marriage

Age Group (Years)	Frequency	Percentage (%)
11-13	50	49.01
14-16	32	31.37
17-19	20	19.60
Total	102	100

The mean age at marriage was 14.2 years (SD = 2.1), with a considerable percentage of respondents (49.01%) getting married before turning 13. The results of the t-test ( $p < 0.001$ ) reveal a substantial difference in health outcomes according to the age of marriage, suggesting that early marriages—particularly those that take place before the age of 13—are linked to more serious maternal health issues.

Table 3

Determinants of Early Marriage

Determinants	Frequency	Percentage (%)
Lack of Education	37	36.27
Poverty	21	20.58
Tradition/Culture	26	25.49
Parental Pressure	18	17.64
Total	102	100

### *Early Marriage and Its Effect on Maternal Health*

Early marriage was most frequently caused by illiteracy (36.27%), followed by poverty (20.58%) and cultural customs (25.49%). Early marriage was found to be significantly predicted by cultural customs ( $p = 0.002$ ) and a lack of education ( $p = 0.01$ ), according to a multinomial regression analysis. This demonstrates the crucial part that cultural norms and education play in the Danuwar community's continued practice of early marriage.

Table 4

#### Maternal Health Complications

Health Issues	Frequency	Percentage (%)
Anemia	42	41.20
Miscarriage	15	14.73
Bleeding	18	17.64
Delivery Complications	33	32.35

There were many maternal health issues; anemia was reported by the largest percentage of responders (41.20%). Significant delivery problems also affected 32.35% of respondents. Early pregnancy and delivery problems were significantly correlated, according to a logistic regression analysis ( $p = 0.003$ ). This demonstrates the dangers of teenage pregnancies, which are made worse by young marriage.

Table 5

#### Knowledge of Contraceptive Use

Knowledge of Contraceptive Use	Frequency	Percentage (%)
Yes	31	30.55
No	71	69.44

Unwanted births and hazards to maternal health may result from the huge percentage of respondents (69.44%) who were ignorant of contraception. Contraceptive knowledge and literacy levels were found to be significantly correlated by a chi-square test ( $\chi^2 = 8.62$ ,  $p = 0.004$ ). This implies that lowering the health hazards connected to early marriage and motherhood may be possible through raising knowledge of reproductive health issues and enhancing education.

### **Discussion**

This study emphasizes how early marriage has a serious negative influence on the health of Danuwar women in Melamchi Municipality. A high frequency of problems, such as anemia (41.20%), miscarriage (14.73%), and delivery difficulties (32.35%), is revealed by the findings. The health risks were significantly higher for women who married before the age of 13, highlighting the psychological and physical toll that early pregnancy has on young girls who are not yet biologically ready for delivery. Early marriage is maintained by sociocultural factors, with lack of education (36.27%) and cultural traditions (25.49%) standing out as important predictors. The frequency of mixed family structures (66.67%) suggests that marriage decisions are heavily influenced by family expectations, and logistic regression analysis validated them as significant predictors. Because young girls frequently lack agency, community-level initiatives are necessary to challenge these norms. Furthermore, 69.44% of respondents did not know anything about contraception, a gap that is strongly associated with low levels of education ( $p = 0.004$ ). Early pregnancy risks can be reduced by addressing this issue through education and understanding of reproductive health. Reducing early marriage and enhancing maternal health outcomes for Danuwar women require comprehensive interventions that include community involvement, education initiatives, and stronger enforcement of marriage regulations.

## Conclusion

This study emphasizes how cultural norms and a lack of educational possibilities are the main causes of early marriage among Danuwar women in Melamchi Municipality, which sustains the practice. According to the results, women who married before the age of 13 had noticeably worse outcomes for maternal health issues, such as anemia, miscarriage, and delivery issues. The majority of respondents' ignorance of contraceptives further highlights the critical need for reproductive health education. Early marriage must be addressed with a multifaceted strategy that incorporates community involvement, education, and law enforcement. Improving girls' access to school, strengthening marriage regulations, and raising knowledge of reproductive health issues are all essential measures to lessen the detrimental socioeconomic and health impacts of early marriage. Subsequent studies must concentrate on long-term, community-based approaches that subvert long-standing cultural norms and strengthen women's independence in marriage and reproductive choices. To improve maternal health outcomes and end the Danuwar community's cycle of early marriage, comprehensive interventions are necessary.

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# Factors Affecting Entrepreneurial Intention of Business Students: The Role of Locus of Control, Social Networks and Creativity

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## Abstract

*This study investigates the factors influencing the entrepreneurial intentions of business students, specifically focusing on the roles of locus of control, social networks, and creativity. The primary objective is to examine how these key factors locus of control, social networks, and creativity affect the entrepreneurial intentions of management students in constituent colleges within the Kathmandu Valley. A descriptive and correlational research design was adopted. Data were collected from 324 business students at Tribhuvan University, of which 252 responses were deemed valid for analysis. The data were analyzed using SPSS version 25, employing descriptive statistics, correlation coefficients, and multiple regression analysis. The findings revealed that both locus of control and social networks had a significant positive impact on the entrepreneurial intentions of management students. However, creativity did not show a significant relationship with entrepreneurial intention. These results underline the importance of strengthening students' internal locus of control and social networking skills to enhance their entrepreneurial mindset. The lack of a significant connection between creativity and entrepreneurial intention suggests a need for further exploration into how creativity is perceived and utilized within the Nepali context. Overall, the study provides meaningful insights for researchers, educators, and policymakers working to foster entrepreneurship among university students in Nepal. It also recommends revising entrepreneurship curricula to include more experiential learning opportunities that enhance self-confidence and encourage real-world engagement.*

**Keywords:** Creativity, entrepreneurial intention, locus of control, management students, social network.

## Introduction

Entrepreneurship has increasingly become a matter of global and national importance (Umadia Sr & Kasztelnik, 2020), largely due to its vital role in driving economic development and promoting innovation (Ortega-Argilés,

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Vivarelli, & Voigt, 2009; Shane & Venkataraman, 2000). Entrepreneurs are frequently recognized as key contributors to a nation's economic well-being, serving as catalysts for progress and change (Keat, Selvarajah, & Meyer, 2011). Through their ability to identify new opportunities, effectively utilize resources, and introduce innovative products, services, or business models, entrepreneurs contribute to increased productivity and enhance competitiveness in the marketplace (Hisrich, Peters, & Shepherd, 2017).

Thompson (2009) defines entrepreneurial intention as the conscious and purposeful decision to start a business venture. It reflects a person's mental commitment to engaging in entrepreneurial activities. In the business environment, this intention signals an individual's deliberate choice to follow entrepreneurship as a career. The Theory of Planned Behavior, introduced by Ajzen (1991), is one of the most widely recognized models explaining this concept, suggesting that intention is the strongest predictor of actual entrepreneurial behavior.

Ferreira et al. (2017) argued several personal factors that influence entrepreneurial intentions, including personality traits, locus of control, creativity, motivation for self-fulfillment, optimism, self-efficacy, perceptions of management, and recognized obstacles. The COVID-19 pandemic further emphasized the need for entrepreneurs to embrace innovation, creativity, and technology to stay viable and competitive in the global economy. According to Paliwal et al. (2022), embedding creative and motivational components in educational curricula can significantly enhance students' entrepreneurial intentions.

Given entrepreneurship's role in developing economic development, it is decisive to explore the motivators behind individuals' decisions to pursue entrepreneurial careers (Chua & Bedford, 2015). In this context, the present study centers on management students in Nepal and aims to investigate the influence of factors such as locus of control, social networks, and creativity on their entrepreneurial intentions. Gaining a deeper understanding of these elements can offer valuable guidance to educators, policymakers, and stakeholders in nurturing a more animated entrepreneurial mindset among university students in Nepal.

## **Literature Review**

Intentions reflect an individual's motivation to perform a specific behavior and indicate the level of effort they are willing to commit to executing that behavior (Ajzen, 1991). Entrepreneurial intention, as described by Thompson (2009), refers to an individual's belief in their own abilities and their future-oriented mindset, which fuels their ambition or plan to launch a new business. In a similar vein, Esfandiar et al. (2019) define entrepreneurial intention as a psychological state that directs one's focus toward achieving a specific goal. From this viewpoint, entrepreneurial intention can be seen as a person's willingness to engage in entrepreneurial activities.

A number of studies highlight the key role of personality traits especially creativity and locus of control in shaping entrepreneurial intentions (Cao et al., 2022; Liu et al., 2022). Creativity, in particular, empowers individuals to generate original and useful ideas, supporting innovative problem-solving that is vital for entrepreneurial success. According to Nguyen, Phan, and Pham (2021), traits such as creativity, a strong drive to succeed, and previous experience in entrepreneurship have a significant influence on students' intentions to become entrepreneurs especially when these qualities are enhanced through education that emphasizes creative thinking

## **Locus of Control and Entrepreneurial Intention**

Mueller and Thomas (2001) identified locus of control as a fundamental personality trait that encompasses an individual's persistence, perspective on life events, belief in achieving desired goals, and confidence in their personal capabilities. They suggested that people with a strong internal locus of control are more persuaded to engage in entrepreneurial activities, as they believe their success is largely determined by their own actions and decisions. Likewise, Tentama and Abdussalam (2020) define locus of control as the degree to which a person perceives control over outcomes such as achievements, rewards, and failures. Their study on vocational high school students found a significant positive correlation between an internal locus of control and entrepreneurial intention.

## **Social Network and Entrepreneurial Intention**

Raijman (2001) explored the impact of social networks on individual entrepreneurial intentions and discovered that those with strong, close-knit networks are more likely to show a positive tendency toward starting their own businesses. In a similar study, Klyver (2007) examined how social networks influence different stages of the entrepreneurial journey, emphasizing the supportive role of family throughout the process of business formation. More recently, research by Hou, Ma, and Wang (2024) among Chinese students confirmed that social networks positively affect entrepreneurial intentions. Supporting this view, Tang, Li, Lv, Wang, and Zhu (2024) stressed the importance of informal networks such as connections with friends, family, mentors, peers, and community members in shaping entrepreneurial aspirations. These informal ties contribute significantly to entrepreneurial learning by helping individuals develop the knowledge, mindset, and skills required to launch and manage a business. As such, social networks are widely recognized as a key factor influencing entrepreneurial intention.

## **Creativity and Entrepreneurial Intention**

Creativity is widely acknowledged as a vital personality trait in the realm of entrepreneurship. In this study, creativity is defined as an individual's capacity to generate original, useful, and practical ideas that can lead to innovative solutions or business opportunities (Ward, 2004). It plays a central role in the entrepreneurial journey by helping individuals particularly students develop new business ideas, recognize emerging opportunities, and devise strategic plans for business development. This creative ability strongly influences one's intention to pursue entrepreneurial activities (Zampetakis & Moustakis, 2006). Educational initiatives and hands-on activities can nurture creativity by enhancing individuals' personal growth and analytical thinking, both essential for spotting business opportunities (Caniels & Motylska-Kuzma, 2023). Participation in creative exercises enhance a mindset that supports innovation and increases interest in entrepreneurial pursuits (Osmani et al., 2021).

Runco and Jaeger (2012) describe creativity as involving divergent thinking, mental flexibility, and unconventional problem-solving abilities. These cognitive skills enable individuals to think beyond traditional frameworks, encouraging innovation and adaptability in ever-changing environments. As a personality trait, creativity allows potential entrepreneurs to envision new ventures, respond to evolving market demands, and tackle business challenges through distinctive and effective approaches. Consequently, creativity is seen as a major driver of entrepreneurial behavior and a crucial factor influencing entrepreneurial intention (Fillis & Rentschler, 2010).

## **Research Hypotheses**

Based on extant literature following hypothesis have been formulated to examine the determinants of entrepreneurial intention among the business students.

H1: There is significant positive relationship between Locus of Control and Entrepreneurial Intention

H2: There is significant positive relationship between Social Network and Entrepreneurial Intention.

H3: There is significant positive relationship between Creativity and Entrepreneurial Intention

## **Research Methodology**

This study utilized a quantitative research approach, grounded in a positivist epistemological framework, to explore the relationships among the key study variables. A descriptive and analytical research design was implemented to identify and assess the connections between the independent variables Locus of Control, Social Networks, and Creativity and the dependent variable, Entrepreneurial Intention. The target population comprised undergraduate management students enrolled in programs such as BBA (Bachelor of Business Administration), BBM (Bachelor of Business Management), and BIM (Bachelor of Information Management) at various constituent colleges within the Kathmandu Valley. Respondents were selected through a convenience sampling method.

According to recommendations by Tabachnick and Fidell (2001) and Hair et al. (2010), a typical guideline for determining sample size in exploratory factor analysis or other multivariate techniques is to include 5 to 10 respondents per questionnaire item. For example, a 20-item questionnaire would require a minimum of 100 to 200 participants. To adhere to and exceed this guideline, the study distributed 324 questionnaires across different

constituent colleges. A total of 270 responses were received, and after screening for completeness and consistency, 252 responses were deemed valid for data analysis.

The data were cleaned, processed, and analyzed using IBM SPSS Statistics version 25. To test the strength of the model and assess the research hypotheses, multiple regression analysis was conducted. Furthermore, demographic variables such as gender, age group, academic program, and the occupation of respondents' parents were included as control variables. These were incorporated to reduce the influence of potential confounding factors and to provide a clearer understanding of the true impact of the independent variables on entrepreneurial intention.

## Results and Findings

### Respondents Characteristics

For analyzing and interpreting the data various statistical tools were used. The respondent's characteristics are presented in the Table 1, where Gender, Age Group, Study Program and Parent's Profession were mentioned.

Table 1

Respondents Characteristics (N=252)

Variables	Categories	No. of Respondents	Percentage
Gender	Male	119	47.2
	Female	133	52.8
Age Group	Below 20 years	69	27.4
	Above 20 years	183	72.6
Study Program	BBA	125	49.6
	BBM	94	37.3
	BIM	33	13.1
Parent's Profession	Job at Government Office	44	17.5
	Job at Business Organization	55	21.8
	Own Business	106	42.1
	No Employment	47	18.7

Source: Field Survey, 2024

In this study, Gender, Age Group, Study Program and Parent's Profession were taken as the major demographic variables. Among the students, 119 (47.2%) were male and 133 (52.8%) were female, which showed female's participation is more than male.

### Test of Reliability

The reliability analysis for each variable was conducted to test the internal reliability of each scale for the sample used in this study. The satisfactory value is required to be more than 0.6 for the scale to be reliable (Cronbach, 1951; Malhotra, 2002). Each dimension has acceptable Cronbach's alpha and alpha values range from 0.693 to 0.863, which fulfills the reliability criteria.

Table 2

Values of Cronbach Alpha for Different Instruments

Instruments	No. of Items	No. of Items retained	Cronbach alpha after item deletion
Entrepreneurial Intention	6	6	0.863
Locus of Control	6	6	0.739
Social Network	5	5	0.825
Creativity	7	7	0.693

**Status and Relationship of Local of Control, Social Network, Creativity and Entrepreneurial Intentional**

The descriptive analysis shows that the mean values of all the construct are greater than 3.00, which indicates that the students have high level of willingness to be involved in entrepreneurial career. Similarly, they perceived high level of influence of all three variables Locus of Control, Social Network, and Creativity for developing entrepreneurial Intention.

The correlation in the Table 3 indicates that the relationship between Locus of Control, Social Network and Creativity are statistically significant ( $p < .01$ ) and the nature of relationships are positive. Similarly, the relationship between Locus of Control and Entrepreneurial Intention are statistically significant ( $p < .01$ ) as well as relationship between Social Network and Entrepreneurial Intention are statistically significant ( $p < .01$ ) and, the relationship between Creativity and Entrepreneurial Intention are statistically significant ( $p < .01$ ). The results indicate that all the independent variables have influence on entrepreneurial Intention.

Table 3

Status and Relationship of Local of Control, Social Network, Creativity and Entrepreneurial Intentional

Variables	Descriptive Statistics		Correlations Coefficients			
	Mean	S.D.	EI	LOC	SOC	CRE
Entrepreneurial Intention	3.9610	0.64173	1			
Locus of Control	4.0258	0.52272	0.774**	1		
Social Network	3.9079	0.63955	0.305**	0.155*	1	
Creativity	3.9019	0.39882	0.366**	0.338**	.526**	1

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

\* Correlation is significant at the 0.05 level (2-tailed)

**Impact of Local of Control, Social Network, Creativity on Entrepreneurial Intention**

For the robustness in the relationship between proposed hypotheses, multiple regression was used for further investigation. The regression results in table 4 shows that the overall model is fit where the F value is ( $p < 0.01$ ) and the R square value is 63.50 percent, which indicates the predictor variables explain 63.5 percent of the variance of Entrepreneurship Intention. Table 5 shows locus of control is the most significant predictors of entrepreneurial intention. Social network also has a positive & statistically significant effect on entrepreneurial intention. However, Creativity does not show significant influence on entrepreneurial intention.

Table 5

Impact of Local of Control, Social Network, Creativity on Entrepreneurial Intention

Variables	B	Std. Error	T-Value	Sig.	VIF
Constant	-0.534	0.270	-1.977	0.049	-
Locus of Control	0.907	0.050	-18.108	0.000	1.130
Social Network	0.180	0.045	3.968	0.000	1.383
Creativity	0.036	0.076	0.475	0.635	1.525
R2 =0.635, Adj. R2=0.630, F-value=143.626, Sig. value=0.000					

**Summary of Hypotheses Testing Results**

Based on the correlation and regression analysis, the tested hypotheses results are shown in the table 6.

Table 6

Hypotheses Acceptance and Rejection

Hypotheses	Independent Variables	Dependent Variables	Beta	p-value	Findings
H1	LOC	EI	0.739	0.000	Accepted
H2	SOC	EI	0.179	0.000	Accepted
H3	CRE	EI	0.023	0.635	Rejected

## **Discussion and conclusions**

This study aimed to investigate the impact of personality traits specifically locus of control, creativity, and social networks on the entrepreneurial intentions of management students from constituent colleges in the Kathmandu Valley. The findings revealed that both locus of control and social networks have a significant positive influence on entrepreneurial intention. Among these, locus of control emerged as the most influential predictor. This suggests that students who believe they can control outcomes and shape their own success are more inclined to pursue entrepreneurial paths. These results align with previous studies by Tentama and Abdussalam (2020), Mueller and Thomas (2001), and Biswas and Verma (2021), all of whom identified a strong link between locus of control and entrepreneurial intention among management students.

Similarly, the study found that social networks also have a significant positive relationship with students' entrepreneurial intentions. The presence of supportive interpersonal relationships such as those with family, friends, mentors, and peers was shown to encourage students to consider entrepreneurship as a viable career choice. This finding is in line with earlier research conducted by Rajjman (2001), Hou, Ma, and Wang (2024), and Tang et al. (2024), which emphasized the role of social connections in shaping entrepreneurial aspirations.

Therefore, students who possess a strong internal locus of control and are embedded in strong social networks tend to demonstrate higher entrepreneurial intentions. However, unlike previous studies, this research did not find a significant relationship between creativity and entrepreneurial intention among management students. While earlier empirical work (e.g., Zampetakis & Moustakis, 2006; Osmani et al., 2022; Caniels & Motylska-Kuzma, 2023) highlighted a positive link between creativity and entrepreneurship, the current study's findings do not support this association. This outcome contradicts the results of Zampetakis and Moustakis (2006) and Osmani et al. (2022), but aligns with the conclusions drawn by Paliwal et al. (2022), suggesting that creativity alone may not be a decisive factor in promoting entrepreneurial intent in this context.

The study concludes that among business students in constituent colleges of Kathmandu Valley, locus of control and social network significantly influence entrepreneurial intention, with locus of control emerging as the strongest predictor. Students who believe they can control outcomes and those with strong interpersonal connections such as support from family, friends, mentors, and peers are more inclined toward entrepreneurial careers. However, creativity did not show a significant effect on entrepreneurial intention in this context, contradicting several prior studies but aligning with some, suggesting that cultural and contextual factors may mediate this relationship. These findings are specific to the sample studied and the limited variables considered, indicating the need for broader future research incorporating diverse factors and populations to better understand the dynamics of entrepreneurial intention.

## **Practical and Research Implication**

This study focused on examining the effects of three predictor variables locus of control, social network, and creativity on entrepreneurial intention. It offers several practical and research implications. From a practical point of view, the findings highlight the importance of enhancing students' internal locus of control and social networking abilities to foster entrepreneurial intentions. Educational institutions in Nepal should consider revising entrepreneurship curricula to incorporate more experiential learning that builds personal confidence and real-world connections. Policymakers and academic leaders can also support the entrepreneurial environment by establishing mentorship programs, incubation centers, and networking platforms for aspiring entrepreneurs.

The unexpected finding that creativity did not significantly influence entrepreneurial intention suggests a need for a deeper understanding of how creativity is perceived and applied in the Nepali context. This creates opportunities for future investigation, including the use of qualitative methods and the examination of potential mediating or moderating variables. Future studies could also incorporate additional determinant variables and larger sample sizes. Since this was a cross-sectional study conducted in a limited number of colleges, there may be concerns regarding common method bias. Therefore, comparative studies across different cultural or regional contexts are recommended to gain broader insights into the complex factors influencing entrepreneurial intention among university students.

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# Factors Associated with Households' Awareness of Social Health Insurance in Sundarharaicha Municipality, Morang, Nepal

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## Abstract

**Background:** Out-of-pocket payment for health care is a major challenge in developing countries like Nepal, often leading to financial hardship and delays in treatment, particularly among poor and marginalized populations. To address these challenges, the Government of Nepal implemented the Social Health Insurance (SHI) program. The aim of the program is to improve financial protection and ensure equitable access to quality health services. Despite its potential, limited research has focused on households' awareness of SHI, especially in eastern Nepal.

**Objectives:** This study aimed to assess awareness of households towards the Social Health Insurance program and identify key socio-demographic and health-related factors associated with it in Sundarharaicha Municipality, Morang, Nepal.

**Material and Methods:** A cross-sectional study design was employed in three wards of Sundarharaicha Municipality in Morang district, covering households newly enrolled, those who renewed, and those without SHI membership. Primary data was collected from 392 households using a structured questionnaire. Descriptive analysis, chi-square tests, and Firth's penalized binary logistic regression were used to analyze relationships among awareness and socio-demographic variables. Internal consistency of the awareness measures was assessed using Cronbach's alpha.

**Results:** The majority of respondents (71.7%) revealed high awareness of SHI, with reliable awareness scales (Cronbach's alpha = 0.93). From bivariate analysis, awareness was significantly associated with variables such as ward, gender, age, marital status, family type, ethnicity, religion, and history of chronic disease, source of knowing ( $p < 0.05$ ). Firth's logistic regression identified ward, ethnicity, family health history, and source of information as key determinants of awareness.

**Conclusion:** This study identified factors associated with household awareness towards social health insurance (SHI). Firth's logistic regression analysis identified ward of residence, ethnicity, family health history, and source of information as the key determinants of awareness.

**Keywords:** Awareness, Penalized likelihood, Firth's logistic regression, Cox & Snell, Nagelkerke  $R^2$

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## **Introduction**

Payment at the health care center is a major challenge in developing countries where income is either low- or middle-level. In such countries, payment for health care is made directly from the pockets. Payment out of pocket can cause financial hardship (Memirie et. al, 2017) and delay in treatment, thereby worsening health problems (Gilson, 1998; Russell, 2004), especially for poor and marginalized groups (Nepal Government Health Insurance Board, 2022; WHO, 2022). To address these challenges, the Government of Nepal established the Social Health Insurance (SHI) program in 2014. But it was formally approved by the Nepalese Parliament in 2015. The SHI program provides financial protection and access to quality health services (Ghimire & Wagle, 2021).

SHI operates on the principles of risk sharing and equity. The financial burden is shared among all members, and everyone has equal and fair access to defined healthcare benefits regardless of their income and social status. All members contribute premiums according to their capacity. The Government of Nepal provides subsidies for those who are unable to afford premiums for their participation in the program. SHI aligns with Universal Health Coverage goals by ensuring that all people receive essential health services without financial hardship (WHO, 2022).

SHI faces challenges in enrollment, retention, and utilization. Thapa et al. (2021) and Bharati et. al (2025) highlighted that households' awareness affects enrollment in SHI. Sharma and Banjara (2020) and Appiah et al. (2012) stated that perception significantly influences enrolment and retention decisions. Awareness measures the knowledge of program benefits, eligibility, and procedures. Socio-demographic and health-related factors, such as age, gender, education, ethnicity, income, family type, and chronic disease status, can affect both awareness as well as program engagement (Dhungana et al., 2021; Acharya et al., 2021).

In Nepal, most research on SHI has focused on enrollment rates, financial benefits, and policy implementation, with limited attention to households' awareness towards SHI. As per our knowledge, very few studies have been conducted on households' awareness of SHI, especially in the eastern region of Nepal. Exploring the relationship between socio-demographic characteristics and awareness of households can help policymakers to develop strategies and reduce misconceptions about SHI. This study aims to assess the awareness of households toward SHI and to identify key socio-demographic and health-related factors associated with awareness.

## **Methodology**

### **Data**

The study was conducted in three wards - 4, 8, and 9 of Sundarharaicha Municipality, located in Morang district, a district in the eastern part of Nepal. The study population consisted of three groups of households during the study period: those newly enrolled in SHI, those who renewed their SHI membership, and those without an SHI membership. The study employed a cross-sectional study design. To ensure the objectives were met, a rigorously designed structural questionnaire, specially developed for this study based on similar studies, was used to collect reliable, unbiased, and accurate data. The study was entirely based on primary data collected from individuals using the personal interview method. At 5% level of significance, the sample size, using the following formula (Cochran, 1997), was determined by

$$n = \frac{z^2 \times p(1-p)}{e^2} = \frac{1.96^2 \times 0.5 \times (1-0.5)}{0.05^2} = 384$$

where n is the sample size, Z is the Z-score, and e is the margin of error. However, we planned to survey 403 households, considering 5% non-response rate.

Table 1

Population and sample size in each ward

Ward No	Total number of households (Ni)	Total household (N)	Total sample size (n)	Allocated sample size $n_i = \frac{N_i * n}{N}$
4	1449			131
8	1209	4440	403	110
9	1782			162

Table 1 shows the population size and sample size to be selected from each ward. A two-stage sampling technique was used to select a representative sample. In the first stage, three out of twelve wards were selected using simple random sampling. In the second stage, the predetermined sample size was proportionally allocated to each selected ward based on its population size, and households were chosen through systematic sampling (Transect Walk). Once data collection was completed, a slightly lower non-response of approximately 2.7% was found, resulting in an actual sample size of 392 households.

The variable awareness towards SHI was measured using dichotomous (Yes/No) items, requiring a measure of internal consistency. The internal consistency was evaluated using Cronbach's alpha. The cutoff age for the two age groups – up to 45 years and above 45 years was determined by the median value. Similarly, a small family and a large family were also determined by the median number of members in the family. Median income value was also used to create two groups of respondents for income.

**Statistical Analysis**

The awareness towards SHI among households residing in the research area is the dependent variable. There are 14 independent variables: ward of residence, age, gender, ethnicity, religion, marital status, occupation, education level of household head, family type (Nuclear or joint family), family size (number of members in a family), monthly income of family, history of chronic illness (the household head has a chronic disease), family history of chronic illness (presence of chronic disease in any member of a family), Source of knowing about SHI. Respondents with the disease for one or more years were included as having a chronic illness. If the household's head correctly answered 5 or more 10 SHI questions, they were classified as "High" aware; otherwise, "Low" aware.

In our data, there was complete separation for the "From where come to know about SHI" and quasi-separation for the "Marital status". So, instead of using standard binary logistic regression, Firth's penalized binary logistic regression was used to examine the relationship between a binary dependent variable and one or more independent variables, which can be either categorical or continuous. The model for Firth's penalized binary logistic regression is:

$$\ln\left(\frac{Y=1}{Y=0}\right) = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_k X_k + \epsilon$$

where,

Y = Awareness towards SHI

$\beta_i$  = unknown parameters

$X_i$  = Explanatory variables

$\epsilon$  = Random error or noise

**Model's performance diagnosis**

After fitting the model, model accuracy and fit were assessed using penalized likelihood ratio tests (PLR tests) and the Wald test, as the Hosmer–Lemeshow test is not fully appropriate under penalized regression. Pseudo

R<sup>2</sup> statistics and the Cox & Snell and Nagelkerke R<sup>2</sup> were calculated to quantify the proportion of variations explained by the predictors. In addition, the model's predictive performance was assessed using the Brier score, which captures the mean squared difference between observed outcomes and predicted probabilities.

**Statistical Software**

All analyses were performed using R Statistical Software (version 4.4.3; R Core Team, 2025).

**Results and Discussion**

Table 2 presents the frequency and percentage distribution of surveyed households across various categories of demographic and socio-economic variables. The largest proportion (40.82%) of respondents was from ward no. 9, followed by ward no. 4(32.14%) and ward no. 8 (27.04%), which is consistent with the study sampling design. Among the sampled respondents, the majority were male (66.07%), while 33.93% were female. There was only a marginal difference between the percentage of respondents up to 45 years (51.79%) and above 45 years (48.21%). Government/Foreign job-employed respondents were significantly lower in percentage (17.35%) compared to other occupations (82.65%). Brahmin/Chhetri (61.99%) was the leading ethnicity among the others. The majority of the respondents (86.50%) were Hindus.

In the context of education status, most respondents (90.82%) were literate, while only 9.18% were illiterate. Approximately 65% respondents had reported a monthly income of up to Rs. 20,000 (median income value), and the remaining 35% earned more than Rs. 20,000, which shows that the majority of respondents are part of the low-income group. About 95% of the respondents were married, while only 5% were unmarried. Regarding family-type structure, 61.70% were reported living in a joint family, and 38.30% were living in a nuclear family. The majority of respondents (74.50%) lived in small families with five or fewer members, while only 25.6% belonged to larger families.

Most household heads (81.40%) reported that they had no chronic disease, and 78.30% indicated that no chronic disease was present among family members.

More than half of respondents (59.40%) became to know about SHI through health personnel, followed by media (20.20%), and relatives/friends (10.71%), while about 10% respondents had not heard about SHI. A substantial majority (71.70%) of respondents were highly aware of SHI, whereas 28.30% lacked awareness.

Table 2

Frequency distribution of respondents across different demographic and socio-economic profiles

Variables	categories	Frequency	Percentage
Ward No.	4	126	32.14
	8	106	27.04
	9	160	40.82
Gender	Male	259	66.07
	Female	133	33.93
Age	Up to 45 years	203	51.79
	Above 45 years	189	48.21
Occupation	Government/Foreign Employment	68	17.35
	Others	324	82.65
Ethnicity	Brahmin/Chhetri	243	61.99
	Others	149	38.01
Religion	Hinduism	339	86.48
	Others	53	13.52
Education	Illiterate	36	9.18
	Literate	356	90.82

*Factors Associated with Households' Awareness of Social*

Variables	categories	Frequency	Percentage
Income	Low	254	64.80
	High	138	35.20
Marital status	Unmarried	22	5.61
	Married	370	94.39
Family Type	Joint	242	61.70
	Nuclear	150	38.30
Family Size	Small	292	74.50
	Large	100	25.50
History of chronic disease of the household head	No	319	81.38
	Yes	73	18.62
Family history of chronic disease of the household head	No	307	78.32
	Yes	85	21.68
	Not heard	38	9.69
From where come to know about SHI	Health Personnel	233	59.44
	Media	79	20.15
	Friends/Relatives	42	10.71
Awareness	High	281	71.68
	Low	111	28.32

Table 3 summarizes respondents' awareness of ten statements related to SHI. The findings indicate that general awareness was high, with 90% of respondents reporting that they had heard about health insurance, and 81% reporting awareness of the government's health insurance scheme.

Around two-thirds of respondents reported being financially eligible for SHI (67%), aware of the benefit package of SHI (71%), and about how to use the scheme (67%). Similarly, 69% respondents knew the financial protection against illness offered by SHI. Awareness of the practical aspects, such as knowing where to seek SHI services, was relatively high (82%).

In contrast, the technical details of the scheme were not well understood. Only 54% of respondents were aware of the policy coverage, and less than half (49%) of respondents knew the maximum number of claims allowed per year. Awareness of claim procedures was also moderate (66%).

Table 3

Distribution of respondents' awareness towards ten statements related to SHI

Awareness Items	Yes (1)	No (2)	Proportion (Yes)
Awar_1: Have you ever heard about health insurance?	351	41	0.90
Awar_2: Have you ever heard about the health insurance scheme of the Nepal Government?	318	74	0.81
Awar_3: Are you eligible financially for the health insurance of the Nepal Government?	263	129	0.67
Awar_4: Do you know your benefit package of the Nepal Government health insurance?	277	115	0.71
Awar_5: Do you know how to use your health insurance from the Nepal Government?	263	129	0.67
Awar_6: Do you know about financial protection against illness through health insurance?	272	120	0.69
Awar_7: Do you know the coverage of the policy?	212	180	0.54

Awareness Items	Yes (1)	No (2)	Proportion (Yes)
Awar_8: Do you know where to contact for the health insurance of the Nepalese Government?	321	71	0.82
Awar_9: Do you know how to get a claim on the health insurance of the Nepalese Government?	257	135	0.66
Awar_10: Do you know the maximum number of claims in a year on the insurance of the Nepal Government?	193	199	0.49
Overall Proportion			0.70

Overall, the mean proportion of “Yes” responses across all ten items was 0.70. This indicates that, on average, seven out of ten respondents were aware of different aspects of SHI. Figure 1, a grouped bar chart, further illustrates the percentage and distribution of respondents' responses to each awareness item of SHI.

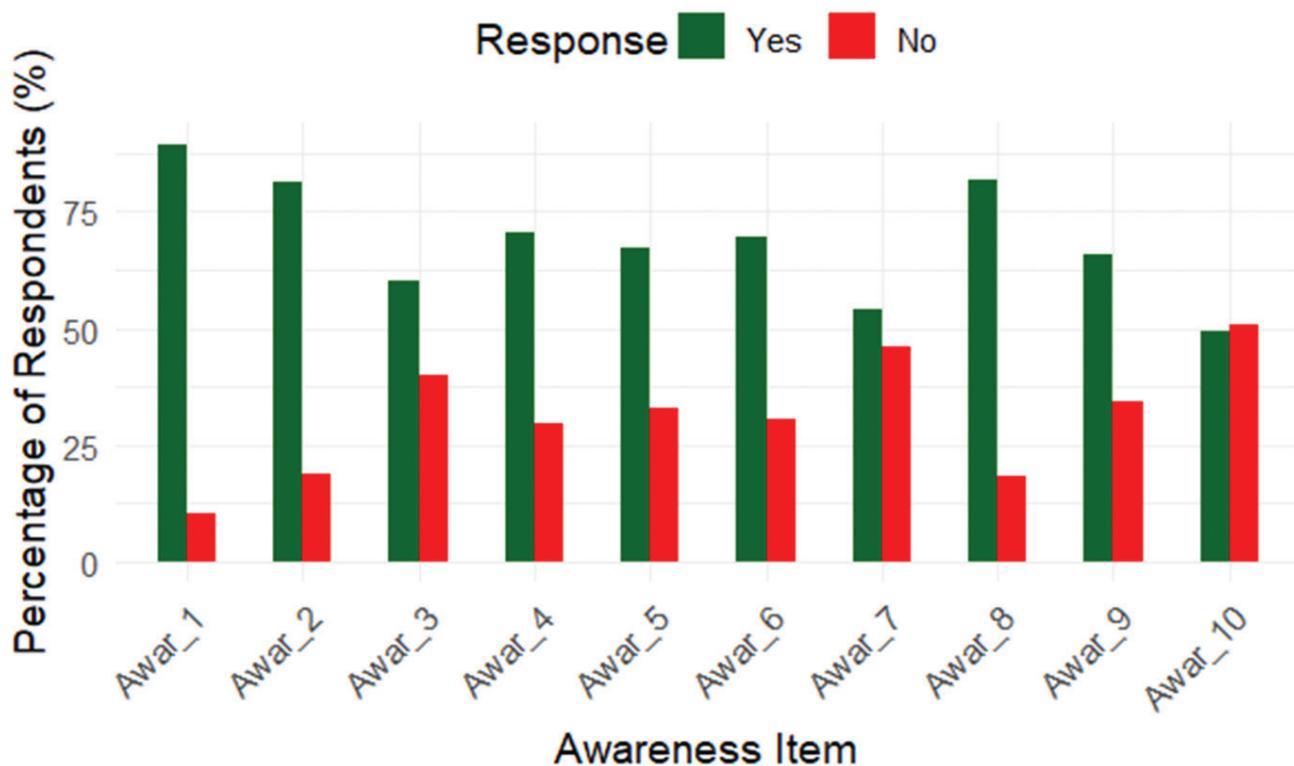


Fig 1: Percentage of responses across awareness items.

In Table 4, to evaluate the internal consistency of the awareness measurement scale, Cronbach’s alpha was computed based on the ten awareness items. The analysis presented Cronbach’s alpha as 0.93 [95% CI: 0.92-0.94], which is above the commonly accepted minimum of 0.70 (Nunnally & Bernstein, 1994). This result indicates that the items in the scale are consistent in measuring the same underlying construct-awareness towards SHI.

Table 4

Item analysis and internal consistency of the awareness scale toward SHI

Awareness Items	1	2	3	4	5	6	7	8	9	10
Corrected item - Total correlation (r. drop)	0.62	0.65	0.66	0.79	0.83	0.82	0.72	0.75	0.84	0.62

*Factors Associated with Households' Awareness of Social*

Awareness Items	1	2	3	4	5	6	7	8	9	10
Alpha if Item Dropped (std. alpha)	0.93	0.93	0.93	0.92	0.92	0.92	0.92	0.92	0.92	0.93
Average Inter-Item Correlation	0.59	0.58	0.59	0.56	0.56	0.56	0.58	0.57	0.56	0.60
Signal-to-Noise Ratio (S/N)	13	13	13	12	11	11	12	12	11	13
Item Mean	1.1	1.2	1.4	1.3	1.3	1.3	1.5	1.2	1.3	1.5
Item SD	0.31	0.39	0.49	0.46	0.47	0.46	0.50	0.39	0.48	0.50
Overall Cronbach's alpha = 0.93 [95% CI: 0.92-0.94]										

The value of "alpha if item deleted" suggested that the reliability coefficient remained unchanged (std. alpha = 0.92 - 0.93) when any single item was removed. This result indicates that all ten items substantially contribute to the construct, with no item performing poorly.

The corrected item-total correlations ranged from 0.62 to 0.87, which exceeds the commonly accepted threshold of 0.50 (Field, 2018). This indicates that each item demonstrated strong discriminatory ability and had a high correlation with the overall scale.

The value of average inter-item correlations fluctuated from 0.56 to 0.60. These results are slightly above the recommended range of 0.15 to 0.50 by Clark and Watson (1995). This indicates that the items are moderately related without redundancy.

The high value (11 to 13) of the signal-to-noise ratio (S/N) across all items demonstrates that most of the variance in item responses reflects true score variance rather than noise. These values support the robustness of the measurement scale.

Descriptive statistics of item-level data reveal that item means fluctuated from 1.1 to 1.5 and standard deviations fluctuated between 0.31 and 0.50. This indicates that most respondents answered "Yes" to the awareness items, which suggests a high level of awareness among the participants.

These statistical results indicate that these items represent a reliable scale for measuring respondents' awareness of the social health insurance program.

Table 5

Bivariate analysis of various demographic and socio-economic variables with awareness

Variables	Awareness			Chi-Square	P- value
	Low (111)	High (281)	Total		
Ward No.				37.53	<0.000
8	53 (50%)	53 (50%)	106		
4	33 (26%)	93 (74%)	126		
9	25 (16%)	135 (84%)	160		
Gender				5.428	0.020
Female	48 (36%)	85 (64%)	133		
Male	63 (24%)	196 (76%)	259		
Age Group				4.093	0.043
Up to 45 years	67 (33%)	136 (67%)	203		
Above 45 years	44 (23%)	145 (77%)	189		
Marital Status				5.307	0.021
Unmarried	1 (5%)	21 (95%)	22		
Married	110 (30%)	260 (70%)	370		
Family Type				12.011	<0.000
Nuclear Family	58 (39%)	92 (61%)	150		
Joint Family	53 (22%)	189 (78%)	242		

Variables	Awareness			Chi-Square	P- value
	Low (111)	High (281)	Total		
Occupation				0.442	0.506
Others	89 (27%)	235 (73%)	324		
Government/ Foreign employment	22 (32%)	46 (68%)	68		
Ethnicity				15.98	<0.000
Others	60 (40%)	89 (60%)	149		
Brahmin/Chhetri	51 (21%)	192 (79%)	243		
Religion				6.034	0.014
Others	23 (43%)	30 (57%)	53		
Hinduism	88 (26%)	251 (74%)	339		
Education				1.647	0.199
Illiterate	14 (39%)	22 (61%)	36		
Literate	97 (27%)	259 (73%)	356		
History of chronic disease in the household				6.975	0.008
No	100 (31%)	219 (69%)	319		
Yes	11 (15%)	62 (85%)	73		
Family history of chronic disease in the household				15.708	<0.000
No	102 (33%)	205 (67%)	307		
Yes	9 (11%)	76 (89%)	85		
Family Monthly Income				3.163	0.075
Low	80 (31%)	174 (69%)	254		
High	31 (22%)	107 (78%)	138		
Family Size				0	1
Small	83 (28%)	209 (72%)	292		
Large	28 (28%)	72 (72%)	100		
From where come to know about SHI					<0.000*
Not heard	38 (100%)	0 (0%)	38		
Health Personnel	42 (18%)	191 (82%)	233		
Media	12 (15%)	67 (85%)	79		
Relatives/Friends	19 (45%)	23 (55%)	42		

\*Fisher's exact test

The chi-square test was used to assess the association between awareness status and various variables, as shown in Table 5. Awareness varies significantly according to wards. Respondents of ward no. 9 are more aware (84%) compared to other wards in the study area. Similarly, male respondents (76%) are significantly more aware than female respondents (64%), which aligns with previous findings on health insurance awareness (Dhungana et al., 2021). This indicates that there is a gender gap in awareness towards SHI.

Older respondents, aged above 45 years, show higher awareness (77%) compared to younger respondents, indicating that age is positively associated with awareness. This finding is supported by the previous studies (Dhungana et al., 2021; Thapa et al., 2021). Marital status, found not to be a significant factor for awareness in previous studies (Dhungana et al., 2021; Thapa et al., 2021), was found to be significant in our research. Unmarried respondents (95%) have higher awareness compared to married (70%) ( $p = 0.021$ ); however, the number of unmarried is small ( $n = 22$ ). Additionally, Joint families (78%) are more aware than nuclear families (61%). Respondents belonging to the Brahmin/Chhetri ethnicity were found to have significantly higher awareness (79%)

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as compared to others (60%), similar to the findings of the previous study (Dhungana et al., 2021). Moreover, Hindu respondents are more aware compared to other religions. This indicates that religion is associated with awareness, as the chi-square test indicates a significant association ( $p = 0.014$ ). Households with a chronic disease history or family history have higher awareness than those without, which indicates that direct health experience increases awareness. Awareness is highly dependent on the information source. Health personnel (82.0%) and media (85%) are effective channels for information sources about SHI. However, previous studies (Dhungana et al., 2021; Thapa et al., 2021) found that education and occupation were significant factors; our research did not include these two variables, including family size and monthly income as significant.

### Final model

Firth's penalized binary logistic regression was applied to identify the association between awareness and significant factors identified from the bivariate analysis.

Table 6

Odds ratio for the Firth's binary logistic regression model

Coefficients	Beta (□)	SE (□)	OR Exp (□)	95% CI		P-Value	
				Lower	Upper		
Constant	-5.866	1.478	0.003	0.000	0.030	<0.000	
Ward No.	4	0.938	0.539	2.555	0.873	7.921	0.087
	9	1.267	0.511	3.550	1.263	9.893	0.017
Gender	8®	-	-	-	-	-	-
	Male	0.361	0.298	1.434	0.787	2.597	0.237
	Female®	-	-	-	-	-	-
Age Group	Above 45 Years	0.430	0.304	1.538	0.840	2.859	0.164
	Up to 45 Years®	-	-	-	-	-	-
Marital Status	Unmarried	0.988	0.866	2.685	0.617	25.291	0.211
	Married®	-	-	-	-	-	-
Family Type	Nuclear	0.180	0.422	1.197	0.503	2.806	0.680
	Joint®	-	-	-	-	-	-
Ethnicity	Brahmin/Chhetri	1.023	0.328	2.781	1.447	5.389	0.002
	Others®	-	-	-	-	-	-
Religion	Hinduism	-0.321	0.478	0.726	0.270	1.859	0.509
	Others®	-	-	-	-	-	-
Family history of chronic illness in the household	Yes	1.869	0.629	6.479	1.935	26.544	0.002
	No®	-	-	-	-	-	-
History of chronic disease in the household	Yes	-0.161	0.579	0.851	0.270	2.905	0.789
	No®	-	-	-	-	-	-
Source of Knowing	Personnel	5.406	1.402	223	27	29211	0.000
	Media	5.347	1.444	210	22	28597	0.000
	Relatives/Friends	4.357	1.409	78	9	10292	0.000
	Not heard®	-	-	-	-	-	-

Table 6 shows that respondents from Ward no. 9 had more than three times higher odds of awareness (OR = 3.550, 95% CI: 1.26 - 9.89,  $p = 0.017$ ) compared to those from Ward no. 8. Brahmin/Chhetri respondents were approximately three times more aware compared to respondents from other ethnicities. Also, participants with a family history of chronic illness were more aware (OR = 6.48, 95% CI: 1.94 - 26.54,  $p = 0.002$ ). Furthermore, the source of information about SHI showed a strong influence on awareness. Participants who obtained information from health personnel were 223 times (95% CI: 27 - 29,211,  $p = 0.000$ ), followed by media 210 times (95% CI:

22 - 28,597,  $p = 0.001$ ), and by relatives or friends were 78 times (95% CI: 9 -10,292,  $p = 0.001$ ) more aware compared to those who had not heard about the scheme. Other sociodemographic variables, including gender, age group, marital status, family type, religion, and household history of chronic disease, were not statistically significant predictors at 5% level of significance.

### **Diagnostics of the fitted model**

The penalized likelihood ratio test was  $\chi^2 = 157.89$  on 13 degrees of freedom ( $p = 0.000$ ), and the Wald test was 110.95 on 13 degrees of freedom ( $p = 0.000$ ). These values confirm that the model was a good fit.

Multicollinearity among predictors was assessed using Variance Inflation Factors (VIFs) from a standard logistic regression model. The highest adjusted VIF was 1.63 for Ward number. Since all adjusted VIFs were below 2, multicollinearity among the predictors was not a concern.

The Cox & Snell  $R^2$  was 0.332, and the Nagelkerke  $R^2$  was 0.474, indicating that the model shows a moderate to strong fit. The Brier score was 0.122, which reflects a reasonable predictive accuracy of the model.

Ward of residence, family health history, and source of information were identified as the key determinants of awareness from this analysis.

### **Limitations**

The study was limited to three wards of Sundarharaicha Municipality in Morang district, which may not be representative of the entire district or Nepal. Thus, the generalization of the findings is limited. Awareness was measured using structured dichotomous (Yes/No) items; although Cronbach's alpha indicated good internal consistency, the scale may not fully capture the full depth of respondents' attitudes and knowledge. The final Firth's logistic regression model explained only about 7 - 10% of the variance in awareness. This indicates that other important factors may not have been captured in the study.

### **Conclusion**

This study assesses respondents' awareness of social health insurance (SHI). The majority (71.68 %) of the respondents disclosed high awareness. Bivariate analysis identified that ward of residence, age, gender, marital status, family type, ethnicity, religion, history of chronic disease in household, and source of knowing were found as significantly associated with awareness of the respondents towards SHI. Ward of residence, ethnicity, family health history, and source of information were found as the key determinants of awareness using Firth's logistic regression analysis.

### **Conflict of Interest**

The authors declare that they have no conflict of interest.

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# Financial Literacy and Investment Decision of Nepalese Investors in Share Market

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## Abstract

*Purpose: This study examines the impact of financial literacy on the investment decisions of investors in Nepal's share market. It emphasizes the ability of individual investors to make informed financial choices, manage savings, assess risk tolerance, and select suitable investment opportunities.*

*Methodology: A descriptive and causal-comparative research design was employed for this study. Data were collected via investment-related questionnaires distributed among individual investors in the Kathmandu Valley. Statistical analysis was conducted using regression and correlation analysis to explore the relationships between financial knowledge, personal savings, risk tolerance, investment options, and investment decisions, using SPSS software for data interpretation.*

*Results: The findings indicate a positive correlation between financial literacy and investment decisions. Enhanced financial education alongside increased risk tolerance leads to more informed and strategic investment choices. Additionally, the study found that higher individual savings and a broader range of investment options contribute positively to financial outcomes.*

*Discussion: The study highlights the critical role of financial literacy in empowering investors to manage their finances effectively and meet their investment goals. It suggests the development of policy frameworks aimed at instituting financial education schemes to foster a robust investment culture, enhance market participation, and spur economic growth in Nepal.*

*Conclusion: The research underscores the necessity for increasing financial literacy among investors in Nepal, pointing to its significant impact on investment strategies and overall financial health. Implementing educational programs can facilitate better financial decision-making and contribute to a thriving economy.*

*Novelty: This study uniquely explores the impact of financial literacy on investment decisions within the under-researched context of Nepal's share market. It employs strong methodological techniques to analyze the interrelationships between financial knowledge, risk tolerance, and savings management.*

**Keywords:** Financial literacy, investment, Risk tolerance, Personal savings, Nepali share market.

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**JEL Classification:** G3, G24, G40

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## **Introduction**

The financial prospect in Nepal has advanced over the past few decades with the enormous lift in the number and diversity of financial intermediaries and the growth of various investment opportunities in financial sector. With this, it has also brought the individuals with the requirement of having knowledge regarding financing and its terms. The advancement also requires the individuals to know about the investment hurdles and risk associated with financing thus it also remains crucial for individuals to eliminate the difficulties of the financial markets by encompassing the knowledge of financial concepts and the ability to make informed financial decisions. Thus, this study emphasizes on the bit part of financial capability in shaping decision regarding investment among those investing in the Nepal's share market, exploring how knowledge in areas such as personal savings, risk tolerance, and investment options influences their financial behavior (Subedi, 2023).

Financial literacy in today's world is a major necessity as finance has been ruling the individual as well as a corporate body which has enhanced its focus on the necessity of society to understand and embrace the concept of financial capability to uplift the national economy and achieve sound along with sustainable development. The baseline survey by Nepal Rastra Bank shows that the financial literacy in Nepal has reached 57.9 percent which is a great height as compared to previous records. While strengthening the economy of the country, financial literacy has a special role to play as it has various benefits mentioned in the definition as above. It also sparks to increase the knowledge of people about economies and economic activities taking place in the society. This has been taken all around as a fundamental appliance for identifying and tackling the issues relating to budgeting, saving, mobilizing the fund, investing and risk administration which remains crucial for the households and businesses for their development and growth. This study also investigates the impact of financial literacy on investment decisions with the major objective of assessing the level of financial literacy and examining the relationship and impact of personal savings, risk tolerance, options of investment and financial knowledge on investment decisions along with identifying key areas where financial education can improve investor outcomes and contribute to better financial decision-making in Nepal.

However, the growth of the Nepalese financial sector also showcases a significant gap in financial literacy among Nepalese investors, which adversely affects their ability to make informed investment decisions. Many investors lack the necessary knowledge and skills to manage their finances effectively, leading to suboptimal investment outcomes and financial insecurity thus, this study seeks to identify the extent to which financial literacy effects the investment decisions in Nepalese share market and to identify the key areas where financial education can enhance investment returns. By assessing the level of financial literacy, examining the relationship between financial literacy components (personal savings, risk tolerance, investment options, and financial knowledge) and investment decisions, and analyzing the impact of these components on investment behavior, the study provide valuable insights into the financial behavior of investors. These insights guide the development of targeted financial education programs that address the specific needs of Nepalese investors, ultimately enhancing their investment decisions and financial outcomes.

## **Literature Review**

Financial literacy is considered an important adroitness that would be utilized in eliminating complex financial situations or affairs and make rational financial decisions, because financially capable investors would be able to understand the better investing options and make their choices accordingly leading them to avoid some obvious mistakes. This would also let them make optimal financial decisions (Subedi, 2023). Numerous studies have examined the idea of financial literacy; in one such study, it was shown that financial literacy influences an individual's behavior. Müller and Weber's (2010) research show that investing choices in low-cost funds are favorably impacted by financial literacy. Research on financial literacy and investing choices in Pakistan was carried out by Awais et al. (2016). The research came to the conclusion that investing choices are favorably impacted by financial literacy. In a similar vein, it demonstrated the noteworthy benefits of financial literacy for investment choices made in Kenya's real estate market.

Subedi and Bhandari (2024), in their study analyzes the influence of the psychological factors on the decision

regarding investment on Nepalese stock market with financial literacy acting as an intervening factor. The researchers through their study make it clear that financial literacy improves the investment decision by facilitating adequately informed process of decision making, eliminating biases, enhancing risk management and prioritizing long term financial planning that attempts to examine the influence of psychological factors on decision making while investing in Nepalese stock market.

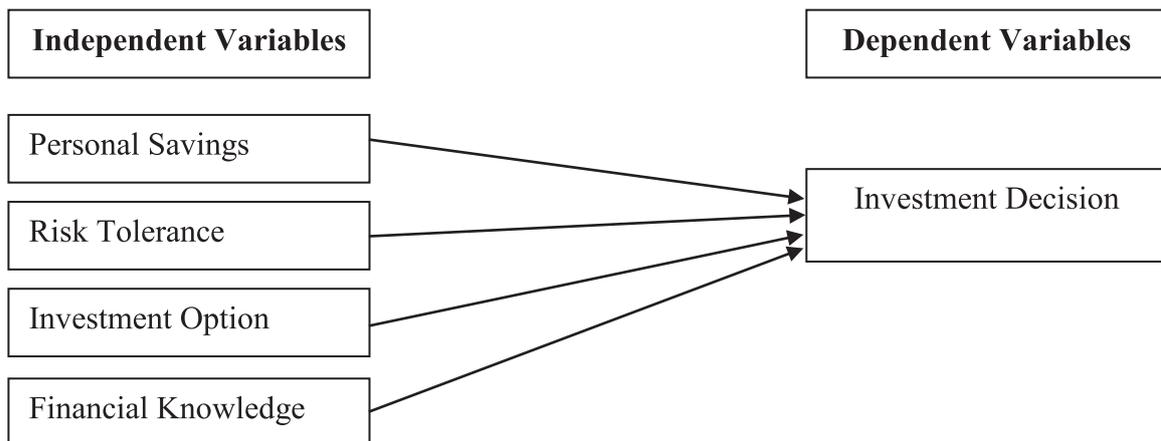
The capacity to use the financial services knowledge that is suggested by financial literacy is known as financial skills. Research indicates that a person's financial situation is significantly impacted by their level of financial literacy. Additionally, it was mentioned by Atkinson and Messy (2011) that financially savvy individuals gain wealth via accumulation. Nonetheless, other studies (Mahdzan and Tabiani, 2013, for example) contend that everyone with solid financial understanding can make wise investment choices. In order to optimize the advantages of financial choices, Chen. and Volpe (1998) in their research highlights that everyone must be capable enough to assess the new and sophisticated financial instruments. Saha (2016) goes on to say that if a person is competent and can show that they have used what they have learnt to make investment choices, they are deemed financially literate. Furthermore, one cannot be regarded as financially educated if they are unable to evaluate the alternatives that are open to them (Roy & Jane, 2018). As a result, having sound financial knowledge helps people manage their money wisely and reduces the likelihood that they have been duped. In light of this, an individual has to be knowledgeable and skilled in order to make wiser financial choices throughout their life (Singh & Kumar, 2017). Consequently, increasing one's financial literacy may be crucial for making wise financial and investing choices. More so, as Roy and Jane (2018) pointed out, individuals get more knowledgeable about money and are expected to become more financially competent as they gain experience in these areas. Nonetheless, in the current environment, youth possess financial literacy but lack the basic financial necessities required to create and manage a financial planning, comprehend credit, comprehend investment vehicles, or utilize the banking system (Lusardi, 2019; Rai, 2019; Sadiq 2019 and Saha, 2016)

Kim (2001) states in Sabri (2011) that financial literacy is the fundamental information required for survival in contemporary society. The intricate concepts of investing, saving, and spending must be understood in order to possess this foundational knowledge. Meanwhile, financial literacy is defined by Lusardi & Mitchell (2007) as an individual's understanding of financial instruments, such as their understanding of investments, insurance, savings, and other financial products. In order to achieve wealth, financial literacy may be defined as having understanding of finances. Based on the above understanding, it can be said that financial literacy refers to a person's overall grasp of money, which encompasses debt, insurance, investments, savings, and other financial tools.

The study research framework as well as showing the hypotheses relationships between the constructs. The researcher has used the investment decision as the response variable and different dimensions of financial literacy as predictor variables. Financial literacy in the study is referred to the associated form of understanding, skill and attitude required to develop informed and sage decision relating to the use of fund and on the hit achieving financial growth. The methodology of the study involves assessing the form of financial literacy and exploring the relationship with investment decisions through empirical analysis. The findings suggest that enhancing financial literacy can lead to better financial decision-making, improved investment outcomes, and overall economic growth in Nepal (Subedi, 2023).

### **Conceptual Framework**

Subedi (2023) provided a comprehensive analysis of how financial literacy influences investment decisions among investors in Nepal. It highlights the significant gap in financial knowledge among the population, emphasizing the need for improved financial education. By examining key factors such as personal savings, risk tolerance, and understanding of investment options, the study underscores the critical impact these elements have on investment behavior.



H1: Personal Savings have a significant impact on Investment Decision.

Martin and Gonzalez (2023) in their study reveals that higher financial literacy is positively associated with higher saving rates, contributing to more stable financial behavior. Every financial decision either it be stock investment, real-estate investment or establishing a company, funds through savings allow investors engagement in the venture (Arianti, 2022). These studies confirm that enhanced financial literacy promotes better savings and investment strategies, which are key components of financial decision-making. Thus, the hypothesis H1 is formulated on the basis of same evidence.

H2: Risk Tolerance has a significant impact on Investment Decision.

According to Huang and Xu (2023), financial literacy is often associated with investors' risk tolerance capacity in investment decisions, which refers that investors literate about financial knowledge are more willing in taking risks associated with investment with the motive that higher risk leads to earning of higher return. With the growth in financial literacy, investors tend to be more confident in knowing the level of risks and adjusting their investment portfolios accordingly. With this, it can be hypothesized that higher risk tolerance leads to significant impacts on investment decisions, allowing investors to pursue higher-yielding investment option.

H3: Investment Option has a significant impact on Investment Decision.

Studies such as those by Garcia and Lopez (2023) and Lamichhane (2022) have demonstrated that greater financial literacy enables individuals to choose more strategic and diversified investment options. Findings from several studies suggest that investors with adequate financial knowledge of various products of investment including shares, debentures, bonds, and mutual funds make more informed and effective choices for investment leading higher earning. In context of emerging markets like Nepal, understanding the several investment options is particularly important for increasing returns and eliminating risks (Srinivasan & Lakshmanan, 2023). Therefore, individuals who are knowledgeable about a range of investment options are likely to make better investment decisions.

H4: Financial Knowledge has a significant impact on Investment Decision.

Garcia and Lopez (2023), Brown and Johnson (2023), and Chen and Wang (2021), in their study confirm that financial literacy enhances individuals' ability to make informed investment decisions. The study of Smith & Johnson, 2022 and Martinez & Sanchez, 2023 explains that financial literacy leads to improved financial behaviors i.e. budgeting, saving, mobilizing and investing which fosters investment decision of the investors. Increasing financial knowledge has remained critical in the emerging markets where financial knowledge is still in the phase

of development, for improving financial outcomes, as evidenced by the findings of Lee, Kim, and Yoon (2023) and Patel and Singh (2023). Thus, it is justified to hypothesize that financial knowledge has a major influence on decision regarding investment, equipping investors with the tools necessary to make sound financial choices. The extensive research on Financial Literacy and its impact on Investment Decisions of investors does not remain free from significant gaps, particularly in context of Nepal. It can be seen that, while previous studies have explored the general influence of financial literacy, few have specifically investigated the relationship between individual components such as Personal Saving, Risk Tolerance, Investment Option, and Financial Knowledge on Investment Decisions. Most studies, like those conducted by Lamichhane and Kulshrestha (2022), have not disaggregated these factors to fully understand their distinct effects on investors' behavior. This oversight underscores the necessity for more nuanced research that examines how each variable influences investment choices individually. This study also fulfills the gap seen in previous studies by breaking down the financial literacy into four components- personal savings, risk tolerance, investment options and financial knowledge and examining their separate impacts on investment decisions.

## **Methodology**

Descriptive research design and causal comparative research design has been adopted in the study while it deals with the various types of independent variable and their relationship with the dependent variable. Primary data has been used for the study as the data has been generated through investors perspective. For this, structured questionnaire has been prepared and distributed to the respondents through online platform and have been then collected from the respondents, mostly through a personal network. The data generated through the response of questionnaire has been analyzed using mathematical tools and the result was presented in tables for in-depth understanding. The conclusions have been drawn based on the findings from the analysis of research and appropriate recommendations has been made accordingly. Both primary well as secondary sources have been used while doing this study. The questionnaire contained close-ended questions in order to eliminate burden regarding lengthy and time-consuming response. Five points Likert-scales has been used for most of the close-ended questions so that the responses are easy and unbiased. The scores for measurement in Likert scales vary from a low of 1 indicating Strongly Disagree to a high of 5 indicating Strongly Agree. The questionnaire method is used in the current study keeping in mind the method is quicker, less time consuming and cheaper than other methods and is also easy to use in case of a large sample. Hence, making questionnaire tools is thought to be more preferable in this type of research. Hair et al. (2011) explains that, for a social sciences research the size of 100-200 samples is considered to be sufficient and accordingly, the sample size 121 is taken for the purpose of study. The outcome generated from the sample is then analyzed through SPSS. Personal savings, risk tolerance, investment option and financial knowledge are taken as independent variable whereas investment decision is taken as dependent variable for the research for which, Linear and multiple regressions have been used in this study to determine their influence on one another. As, regression analysis provides detailed insights into the slope of relationship, same has been utilized to explain the characteristics of the relationship and establish a certain prediction. The regression equation for this study is;

$$ID = \alpha + \beta_1PS + \beta_2RT + \beta_3IO + \beta_4FK + e_j$$

Where, ID = Investment Decision

$\alpha$  = Constant Term

$\beta$  = Coefficient of Independent Variables

PS = Personal Savings

RT = Risk Tolerance

IO = Investment Option

FK = Financial Knowledge

$e_j$  = Error Terms

## Results and Discussion

### Respondent’s Profile Analysis

The respondent's profile analysis shows a brief about the demographic characteristics of the sample investors studying about the key variables including; gender, marital status, age, education level and earning income, determining the composition of sample. The demographic information generated through profile analysis helps in establishing a foundation to know about the nature and responses of the participants within the context of the study. Total of 121 sample taken for study presents a diverse population across various demographic categories and is shown in Table.1. The Table presents the demographic data of 121 respondents among which 66 are male representing 54.5% of total population while 55 are female representing 45.5% of total population. The marital status reveals 68.6% unmarried to 31.4% of married population. The large group of population falls in between 21-30 age group (52.1%) followed by age group of 31 to 40(35.5%). It was further observed that majority of population hold bachelor degree (54.4%) while 39.7% has master’s degree or higher. In terms of monthly income, the population is distributed as 43%earning in between 50,001 to 100000 and 28.9% earning in between 20,000 to 50000.

Table 1

Respondent’s profile Analysis

Category	Subcategory	Frequency	Percentage
Gender	Male	66	54.5
	Female	55	45.5
Marital Status	Married	38	31.4
	Unmarried	83	68.6
Age	Below 20 years	5	4.1
	21-30 years	63	52.1
	31-40 years	43	35.5
	40 years above	10	8.3
Level of Education	Intermediate or below	7	5.8
	Bachelor	66	54.5
	Masters and above	48	39.7
Monthly Income	Below 20,000	23	19
	Rs. 20,001-50000	35	28.9
	50001 – 100000	52	43
	Above 100000	11	9.1
Total		121	100

Source: questionnaire response

### Reliability Statistics

The term reliability refers to the consistency of a measurement tool in yielding similar outcome under consistent condition. Cronbach’s Alpha is generally used as a common measure of reliability, that assesses the evenness of a set of items within a survey or form of question. The value of 0.70 for a Cronbach’s Alpha is normally thought to be acceptable which shows that the items within the scale reliably measure the underlying construct. (Field, 2013).

Table 2

Reliability Test

Cronbach’s Alpha	No. of Items
.854	5

Source: SPSS Software

The reliability test conducted through SPSS yielded a Cronbach’s Alpha value of 0.854 for 5 items, suggesting

that the scale used to measure these constructs is highly reliable. This value exceeds the recommended threshold, indicating strong unity internally among the items and affirming the robustness of the instrument in capturing the variables of interest. The reliability of this scale ensures that the conclusions drawn from the data are based on stable and consistent measurements.

**Descriptive Statistics**

Conducting this descriptive analysis is essential for identifying trends and patterns in financial behaviors, which can inform more targeted and effective investment strategies. By summarizing the central tendencies and variability of key variables, this analysis gives valuable perception into the slant and practices of stock investors in NEPSE, aiding in the development of strategies that cater to their specific needs and preferences. The Table.3 provides relevance into the descriptive statistics of the variables based on 121 respondents providing insights into financial behavior and decision making. Personal saving exhibited the average score to 3.798, and a standard deviation to 0.5450. The higher mean score with a lower standard deviation resembles high and consistent saving habits among the surveyed population.

Further, it was observed that the finance knowledge had average score of 3.5312, and a standard deviation 0.6099 that suggests a moderate level of financial understanding. Average risk tolerance of the population was summarized as varying levels of willingness to take financial risks as the mean of risk tolerance was 3.494 with a Standard deviation of 0.7367. The population has a moderate preference for different investment choices, as the average risk score and standard deviation of the investment score were 3.514 and 0.6826, respectively. Lastly, the mean of investment decision-making was 3.615, and the standard deviation of the same is shown 0.7029, resembling a fairly positive approach toward making investment decisions. The sample was consistent across all variables, highlighting the reliability of the collected data.

Table 3

Descriptive Statistics

	N	Minimum	Maximum	Mean	Standard Deviation
Personal Saving	121	2	4.8	3.798	0.545
Financial Knowledge	121	1.4	4.6	3.512	0.6099
Risk Tolerance	121	1	5	3.494	0.7367
Investment Option	121	1	5	3.514	0.6826
Investment Decision	121	1	5	3.615	0.7029
Valid N (listwise)	121				

Source: SPSS Software

**Correlation Analysis**

Table.4 presents the correlation analysis between various factors influencing investment decisions: Personal savings (PS), Risk Tolerance (RT), Investment Options (IO), Financial Knowledge (FK) and Investment Decision (ID). The Table shows the strength and significance of relationships between these factors, which are crucial for understanding investor behavior in Nepalese Share market.

Table 4

Correlation Analysis

		Personal Saving	Financial Knowledge	Risk Tolerance	Investment Option	Investment Decision
Personal Saving	Pearson Correlation	1	.543**	.258**	.422**	.480**
	Sig.(2-tailed)		0	0.004	0	0
	N	121	121	121	121	121

		Personal Saving	Financial Knowledge	Risk Tolerance	Investment Option	Investment Decision
Financial Knowledge	Pearson Correlation	.543**	1	.507**	.721**	.715**
	Sig.(2-tailed)	0		0	0	0
	N	121	121	121	121	121
Risk Tolerance	Pearson Correlation]	.258**	.507**	1	.499**	.555**
	Sig.(2-tailed)	0.004	0		0	0
	N	121	121	121	121	121
Investment Option	Pearson Correlation	.422**	.721**	.499**	1	.722**
	Sig.(2-tailed)	0	0	0		0
	N	121	121	121	121	121
Investment Decision	Pearson Correlation	.480**	.715**	.555**	.722**	1
	Sig.(2-tailed)	0	0	0	0	
	N	121	121	121	121	121

Note: Correlation is significant at the 0.01 level (2-tailed).

Source: SPSS analysis

The test of Correlation in the study reveals that various factors show the influences on Nepalese share market investors' investment decision. Financial literacy is most strongly positively correlated with investment decisions (0.715), which confirms the role of financial education in the process of decision-making. Investment options follow with a correlation of 0.722, which indicates that knowledge and application of multiple investment options enhance decision making. Risk tolerance correlates positively moderately (0.555), which suggests that risk taking investors are more determined. Habitual savings assist in improving the investment decisions.

Overall, the finding emphasizes on the importance of financial literacy, risk tolerance, and investment diversification in improving the investment decision

### Model Summary

The model summary shows a framework of how dependent variables are explained by an independent variable in regression analysis. The study result can be shown in Table.5 where the R value of 0.798 amplifies the overall strength and path of linear relationship in between the variables showing a strong positive correlation. The R-square value of 0.637 as seen in the Table, shows a bit portion of variance in respondent variable to same as clarified by the predictor variables. The adjusted R-Square provides a more refined assessments of the true population R-square by accounting for the number of independent variables which also calibrates R-square for the various predictors in the model. The standard deviation of the residuals or errors in prediction is represented by the Standard error of estimate (0.4309). The Table also show about R-square change indicating by what level R-square rises when new predictors are added to the model. The study does not show any change R-square with R-square (i.e. 0.637), as all predictors were entered simultaneously. The F-Change value (50.819) tests whether the increase of the independent variables significantly enhance the model compared to having no predictors. The sig. F change (.000) indicates that the model is statistically significant, providing an information that independent variables as a whole have a significant impact on investment decision.

Table 5

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R-Square Change	F Change	DF1	DF2	Sig. F Change
1	.798 <sup>a</sup>	0.637	0.624	0.4309	0.637	50.819	4	116	0

a. Predictors: (Constant), Investment Option, Personal Saving, Risk Tolerance, Financial Knowledge

Source: SPSS analysis

**Analysis of Variance (ANOVA)**

ANOVA, known as Analysis of Variance is used to check the overall fit of regression model. It examines whether or not the independent variables as a whole have any statistically significant relationship with the dependent variables.

Table 6

Analysis of Variance

Model	Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	37.751	4	9.438	50.819
	Residual	21.543	116	0.186	
	Total	59.293	120		

a. Dependent variable: Investment Decision

b. Independent Variables: Investment Option, Personal Saving, Risk Tolerance, Financial Knowledge, (Constant)

Source: SPSS Analysis

The Table 6 shows the analysis of variance. The sum of squares shows regression of 37.751 which represents the variation in regressand explained by predictors and residual (21.543) shows the variation that is not clarified by the independent variables or the error. Df in the figure shows degrees of freedom where, Regression (4) indicates the number of independent variables or predictors and Residual (116) indicates the total number of observations subtracting the total of variables along with the intercept. Mean square seen in the table is simply calculations done by splitting the sum of squares by its corresponding df. The F-statistic (50.819) examines the significance of the regression model, which high indicates that the data is well fitted in regression model. Finally, sig. in the table stands for significance level, p-value (.000) shows chance of getting the observed results if the null hypothesis remains true. Here, the model is statistically significant at 1% significant level is understood when the p-value obtained is less than 0.05, confirming that the independent variables as a whole impact significantly on investment decisions of Nepalese stock investors.

**Regression Coefficients**

Regression coefficient provides detailed information about the effect of individual independent variable on the dependent variable in a regression model. The Table displays both unstandardized and standardized coefficients and statistical tests that assess the significance of each independent variables.

Table 7

Regression coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	-0.113	0.306		-0.37	0.712
Personal Saving	0.154	0.086	0.119	1.788	0.076
Financial Knowledge	0.329	0.104	0.285	3.173	0.002
Risk Tolerance	0.187	0.064	0.196	2.943	0.004
Investment Option	0.379	0.085	0.368	4.44	0

Dependent Variable: Investment decision

Source: SPSS analysis

B in unstandardized coefficient shows the amount of change in respondent variable for each unit change in independent variable, keeping other variables constant. (-0.113) constant resembles the intercept, which shows the forecasted value for the dependent variable when all independent values are not statistically significant or at zero. Personal saving (0.154) shows it is not statistically significant ( $p=0.076$ ); financial knowledge (0.329) and risk tolerance (0.187) indicates a significant positive effect and Investment option (0.379) has a p-value 0.000 which makes it the most influential variable. The Table also shows about standardized coefficients which indicate the adequate importance of every independent variable in the model, standardized to have a mean and a standard deviation equal to 0 and 1 respectively. The largest Beta (0.368) corresponds to investment option, showing that it has the strongest effect on investment decisions. The t-value seen in the Table tests whether the regression coefficient is significantly different than zero. Higher t-value indicates stronger relationships. The sig. in the Table refers to significance level which shows the P-value for each independent variable. P-value if found smaller than or equal to 0.05 signifies that the variable affects the dependent variable.

In overall, the analysis of regression coefficient shows that Investment option positively influence investment decision the most, followed by financial knowledge and Risk Tolerance, both of which are statistically significant. Personal saving positively but insignificantly affects it. The model further focuses on the importance of financial knowledge and broader investment options in making more informed investment decisions by Nepalese stock market investors.

## Discussion

The study focuses on the significance of Financial Literacy in outlining Investing Decisions for Nepalese stock market investors. Through the use of correlation and regression analysis it determines that all the independent variables; Financial Literacy, Risk Tolerance, and Investment Choices have a significant impact on investment decisions in Nepalese stock market. Of these studied variables, investment choice was found to be the most determined predictor, indicating that most aware the investors are about different investment relevant trend to make better financial decisions and strategies. This study also suggests investors to chase risks in their investment decisions in order to earn higher profit. Greater experiences of investment and financial education leads to greater ability of risk tolerance and investors are said to choose risky investment securities to rival with their level of risk tolerance experienced investors to have a portfolio combined of good and bad experience, similar to the decision as shown by the study of Awais et.al, (2016).

The involvement of financial literacy has also been observed, wherein more knowledgeable investors can assess risk, diversify and gain maximum returns. Risk tolerance has also been seen as influencing, wherein investors with a risk-tolerance capacity for making calculated risks are more likely to make better financial investments. Among all these variables, personal savings positively but statistically insignificantly impacted, which interprets that although saving culture is important, it might not directly influence investment decisions without being supported by financial literacy. Similar to the study (Subedi,2023), the study reveals based on the analysis that financial literacy and its components used in the present study, i.e. Financial Knowledge, Personal Saving, risk taking

tendency, and investment choices, exerts a significant and strong positive impact on the investment decision of individual investors in Nepalese Share Market.

The study findings highlight the importance of financial literacy in promoting quality investment behavior. The findings of the study show that without knowing about how the users of financial reports consider risk, it is quite difficult for individuals who manage and regulate to understand either risks related information behaving on the way predicted or they perform in unforeseen manner (Gomes et.al, 2007). The positive connection between financial literacy and investment choice shows the requirement for a specialized financial literacy program that assist individuals in comprehending better financial markets, risk management and investment options. Furthermore, encouraging a diversified culture of investment can allow the Nepalese stock investors to make better choices and gain better financial outcomes. In consistent with the previous study, (Dahal, 2022) this study has shown its' significance to a better understanding of what factors contribute to provide a foundation to the investment behavior of individual investors.

The study also highlights several common pitfalls such as emotional biases, lack of data analysis and herd mentality that can lead to inappropriate investment decisions. Kahneman and Tversky (1979), show that emotional decision-making often results in poor outcomes because emotions can cloud judgement and lead to impulsive actions. To avoid this, investors, should critically evaluate their investment choices rather than applying the heard behavior. More than 50% of the respondents responded to seeking professional advice or relying on the appropriate sources while making investment, which is also supported by the study of Dahal, N.P. (2024) as he mentions, investors should evaluate their portfolios while taking decisions from reliable sources based on present and future potential rather than herd mentality.

## **Conclusion**

The study reveals that the level of Financial Literacy among the investors in Nepalese share market is notably robust as the investors are found to have a satisfied level of understanding on financial concepts and fundamentals of finance such as budgeting, saving, investment principles and risk management. It is also found that the investors understand personal finance planning and making good investment decisions. This wide financial knowledge is evident through their capacity to navigate financial markets successfully, understanding various investment rides and adopting appropriate financial measures in a bid to achieve investment goals. Financial literacy of this nature means investors will be more strategic and informed in their investments, which means enhanced financial performance. The study also shows strong correlation between investment decisions, risk tolerance, financial knowledge, investment options, and personal savings. Thus, the study brings into highlight the fact that Financial Literacy acts a crucial factor in influencing the Financial decisions of investors more over in an emerging economy as of Nepal.

The article underscores the essential role of financial literacy programs to enable investors to obtain the knowledge of the financial market and take decisions in their interest motive. The research findings agree with previous studies in validating that high financial literacy enables investors to deal in the investment sector more wisely, earn greater returns, and effectively deal with the risk and return strategies. Along with this, the positive correlation between investment decisions and risk tolerance validates the principle that investors who are able to handle calculates risk are more likely to seek out successful investment ventures which suggests that encouraging risk management skills also helps to boost investors' confidence in strategic investment decisions.

In conclusion, the study calls for the integration of financial literacy in national policy and education systems in order to bridge the financial literacy gap among Nepalese investors where regulatory bodies and financial institutions are required to collaborate and develop comprehensive literacy programs covering the particular needs of different investor groups. This can further build a financial educated society with the capacity to make wise investment decisions.

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# Integrating Economic Theory into Hydropower Project Evaluation: A Conceptual Review

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## Abstract

*This study examines the ethical implications of Cost-Benefit Analysis (CBA) in evaluating large-scale hydropower projects, with a particular focus on the challenges posed by traditional utilitarian frameworks. While CBA is widely used for policy decision-making, it often fails to account for distributional equity, particularly among marginalized communities and future generations. This research highlights key shortcomings, including the tendency of CBA to favor wealthier groups due to income-based willingness-to-pay metrics, as well as its failure to incorporate non-market environmental values such as cultural, aesthetic, and ecological considerations. The study also explores the limitations of standard discounting practices that undervalue long-term environmental and social benefits, leading to intergenerational inequity. By proposing a pluralistic approach that integrates utilitarianism, egalitarianism, and environmental ethics, the study calls for a more comprehensive and inclusive evaluation framework for development projects. This approach would not only enhance the fairness and inclusivity of decision-making but also promote sustainability by recognizing the intrinsic value of environmental and cultural resources. The findings suggest that CBA should be viewed as a decision-support tool, rather than a definitive guide, and should be complemented with qualitative assessments, stakeholder engagement, and value-based judgments for better policy outcomes.*

**Keywords:** *Cost-Benefit Analysis (CBA), ethical implications, intergenerational equity, environmental ethics, hydropower projects.*

## Introduction

Cost-Benefit Analysis (CBA) is deeply rooted in welfare economics, which prioritizes societal welfare by evaluating whether the benefits of a project outweigh its associated costs (Boardman et al., 2018). The core concepts underpinning CBA include Pareto efficiency, opportunity cost, marginal analysis, and externalities, all of which guide efficient resource allocation in

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investment decisions. One of the foundational principles of CBA is the concept of opportunity cost the value of the next best alternative forgone when a decision is made (Mishan & Quah, 2020). This ensures that scarce resources are allocated where they can generate the most net benefit. Similarly, discounting plays a critical role in translating future costs and benefits into present values, acknowledging the time value of money and societal preferences for immediate benefits over delayed ones (ADB, 2017).

Marginal analysis, another essential element, involves comparing incremental costs and benefits of a project to determine whether additional investments yield positive net returns (Boardman et al., 2018). Related to this are the concepts of consumer and producer surplus, which help assess welfare impacts by measuring the difference between what individuals are willing to pay and the minimum they are willing to accept. CBA also accounts for externalities unintended spillover effects, both positive and negative, that affect individuals not directly involved in the transaction (Hakansson, 2007). By monetizing these impacts, CBA attempts to incorporate all societal consequences of a project, promoting a more comprehensive understanding of its value.

The ontological basis of economics scarcity and choice justifies the need for economic analysis in project planning. Economic analysis helps assess whether a proposed investment is rational, viable, and aligns with national development goals, particularly in contexts where public resources are limited (ADB, 2017). From a macroeconomic perspective, economic analysis evaluates the potential of government investments to enhance national welfare and promote growth. Unlike private financial analysis, which focuses solely on profitability, economic analysis evaluates non-market outcomes, including environmental sustainability and social equity (Hakansson, 2007).

CBA was first systematically applied in the transport sector in the UK during the 1960s and has since expanded to include diverse sectors such as water resource management, energy, forestry, and urban development (Paul, 2000). It serves as a critical decision-support tool by quantifying and comparing project benefits and costs to assess overall welfare impacts. Metrics such as the Economic Net Present Value (ENPV) and Economic Rate of Return (ERR) help determine the feasibility and desirability of investment alternatives.

Although CBA has been criticized for overlooking distributional effects and focusing primarily on efficiency, its use of standardized monetary metrics ensures transparency and comparability across investment options. As Hakansson (2007) notes, integrating both tangible and intangible impacts such as environmental degradation or community displacement can lead to more inclusive and sustainable decision-making. CBA is particularly valuable in public-sector investments, where benefits may not be directly monetized. Welfare economics provides a framework for capturing non-market values and addressing market failures, ensuring that public spending decisions align with broader social goals (Auzannet, 1997). The Asian Development Bank (2017) emphasizes that integrating CBA into all stages of the project cycle from design to post-implementation monitoring enhances accountability and helps prioritize initiatives that yield the highest societal returns. Ultimately, the application of CBA in infrastructure projects facilitates evidence-based policymaking and ensures that scarce resources are deployed to maximize net social benefits.

Despite its long-standing application across various sectors, Cost-Benefit Analysis (CBA) often faces criticism for inconsistencies in methodology, underrepresentation of social and environmental factors, and inadequate theoretical grounding in project evaluation frameworks. In developing countries, including Nepal, infrastructure investments such as large-scale hydropower projects are frequently appraised using financial indicators alone, with limited integration of broader economic and social welfare principles. The lack of a comprehensive understanding and application of foundational economic theories such as welfare economics, opportunity cost, and externalities can lead to suboptimal resource allocation and limited societal benefits. Furthermore, variations in the application of discounting methods, marginal analysis, and valuation of non-market impacts reveal a gap between theoretical constructs and practical implementation. This disconnect necessitates a deeper investigation into the theoretical underpinnings, principles, and operational practices of CBA to improve its relevance, reliability, and policy alignment in public investment decision-making.

The primary objective of this study is to critically examine the theoretical foundations, guiding principles, methodological approaches, and real-world practices of Cost-Benefit Analysis (CBA), with a focus on their application in infrastructure project evaluations, particularly in the context of developing economies. Specifically,

the research aims to: (1) explore the theoretical constructs from welfare economics and public finance that underpin CBA; (2) assess how key principles such as opportunity cost, discounting, and marginal analysis are incorporated in practice; (3) identify the methodological approaches used to value tangible and intangible project impacts; and (4) evaluate the extent to which CBA practices align with theoretical ideals in recent infrastructure projects. By addressing these objectives, the study seeks to bridge the gap between CBA theory and application, contributing to more effective and inclusive decision-making frameworks in public investment planning.

## **Methodology**

This study adopts a qualitative research design based on a systematic literature survey to examine the theoretical foundations, evaluation principles, methodological approaches, and practical applications of Cost-Benefit Analysis (CBA). This approach is effective in synthesizing existing knowledge to gain insights into the conceptual and applied dimensions of CBA, particularly in the context of large-scale infrastructure evaluations. A structured search was conducted across databases using keywords such as “cost-benefit analysis,” “welfare economics,” “economic evaluation,” “infrastructure appraisal,” “discounting,” and “public investment.” The search focused on materials published between 2000 and 2024, ensuring a balance between foundational theories and recent developments. Sources included peer-reviewed articles, institutional reports and key economic literature. Inclusion criteria emphasized literature addressing theoretical underpinnings of CBA, opportunity cost); core evaluation principles, methodological advancements and practical applications, particularly within developing countries such as Nepal. The selected literature was thematically analyzed and categorized into four domains: theoretical constructs, evaluation principles, methodological frameworks, and applied practices. This process enabled the identification of key trends and gaps, offering a nuanced understanding of CBA's role in economic evaluation and investment decision-making. The literature-based method supports critical reflection on the relevance, strengths, and limitations of CBA in real-world contexts.

## **Application, history and principles of CBA**

*Cost-Benefit Analysis (CBA)* has emerged as a critical tool for evaluating public investments and policy decisions, particularly in determining whether proposed projects yield net societal benefits. The formal use of CBA began in the 1930s and gained prominence after World War II, largely driven by the necessity to ensure the efficient allocation of public funds in large-scale infrastructure and development initiatives. The methodology was first systematically applied in the United Kingdom's transport sector during the 1960s, subsequently becoming a standard framework for evaluating public projects and policy interventions (Economic & Labor Market Review, 2008).

Over time, the principles and practices of CBA have evolved to address increasing complexities in public sector decision-making. The Asian Development Bank (ADB) outlines eight core principles of CBA, which include the use of standardized units of measurement, market-based evaluation of benefits, analysis of consumer behavior, valuation of human life, comparative scenario analysis, delineation of specific study areas, and the avoidance of double counting. Recent methodological updates introduced by ADB include refinements to the minimum economic rate of return, valuation of the social cost of carbon, and consideration of regional cooperation impacts. These enhancements are intended to align CBA practices with contemporary development priorities and ensure its relevance across various funding mechanisms and operational contexts (ADB, 2017).

Watkins et al. (2014) emphasized that CBA estimates the monetary value of benefits and costs to a community, guiding decision-making. Boardman et al. (2006) further detailed a nine-step CBA process, which includes identifying project alternatives, measuring impacts, assigning monetary values, and conducting sensitivity analyses. CBA's role in optimizing resource allocation and ensuring fiscal responsibility has solidified its position as a critical tool in evaluating public projects, guiding investments that maximize social welfare and economic benefits. The main principles and features of CBA are as follows:

Cost-Benefit Analysis (CBA) is widely recognized as a critical tool for assessing the economic feasibility of public projects and policies. According to Watkins et al. (2014), CBA provides a framework for estimating the

monetary value of the benefits and costs to society, thereby informing and guiding decision-making. Boardman et al. (2006) outlined a comprehensive nine-step process for conducting CBA, which includes identifying project alternatives, quantifying impacts, assigning monetary values, and conducting sensitivity analysis to evaluate uncertainty. CBA's ability to promote resource optimization and fiscal accountability has reinforced its status as a key method for ensuring that investments contribute positively to social welfare.

CBA is grounded in several core principles and features. First, it adopts a “with and without” comparison approach, contrasting outcomes in the presence or absence of a proposed intervention rather than simply comparing conditions before and after. The analysis also prioritizes selecting the best alternative from multiple options, rather than merely assessing the viability of a single project. A defining characteristic of CBA is its societal perspective, which requires that the benefits to society outweigh the associated costs for a project to be considered worthwhile. In evaluating impacts, CBA distinguishes between revealed preferences, typically derived from market prices, and expressed preferences, often obtained through surveys when market data is unavailable. It also emphasizes clearly defined geographical boundaries, ensuring that only the costs and benefits within the specified region or community are included in the analysis.

Boardman et al. (1999) identified three main types of CBA: *ex-ante* (conducted prior to project implementation), *in medias res* (performed during the life of the project), and *ex-post* (conducted after project completion). A fourth type compares the results of an *ex-ante* analysis with those of an *ex-post* or *in medias res* assessment. While *ex-ante* CBA helps determine the viability of a proposed investment, its reliability is limited due to early-stage uncertainties. In contrast, *ex-post* analyses are generally more accurate, though they serve a retrospective function. Studies conducted *in medias res* offer an opportunity to adjust project implementation when outcomes diverge from initial projections.

Prog and Prog (2014) proposed a structured sequence for conducting CBA. The process begins with identifying alternative projects and determining the scope of benefits and costs to be considered. Analysts then catalogue project impacts, select appropriate measurement indicators, and predict outcomes over the project's lifespan. These impacts are monetized an often-challenging step involving valuation of time, life, and environmental factors. The next step is to discount future costs and benefits to present value, enabling computation of the Net Present Value (NPV) of each alternative. Sensitivity analysis is conducted to examine how results vary with changes in key assumptions, helping to address uncertainty. Ultimately, the project with the highest NPV is typically recommended, although analysts are advised to consider the robustness of the recommendation under different scenarios.

CBA has been extensively applied by governments, international agencies, and donors for evaluating public welfare programs, infrastructure projects, and climate adaptation strategies (Pearce & Nash, 1981). Its systematic approach to quantifying trade-offs makes it indispensable in promoting evidence-based decision-making in both developed and developing contexts.

Watkins et al. (2011) introduced the fundamentals of Cost-Benefit Analysis (CBA), emphasizing that it estimates the monetary value of a project's benefits and costs to determine whether it is socially worthwhile. They outlined eight basic principles to guide CBA application. First, all costs and benefits must be expressed in a common monetary unit to facilitate comparison, representing positive (benefits) and negative (costs) impacts. Second, valuations should reflect actual behavior, such as time savings from improved transportation, using real-life trade-offs people make between time and money. Third, benefits should be measured through market choices, where consumers reveal preferences by purchasing goods up to the point where marginal benefit equals marginal cost. A fourth principle involves the valuation of human life. Though placing a monetary value on life is often controversial, economists argue that such estimates are necessary to inform rational investment decisions. This can be approached by examining how individuals accept increased risk in exchange for higher pay, allowing estimation of the personal cost of life-saving measures. Fifth, CBA must rely on a "with versus without" approach, comparing the expected situation with the project to what would occur without it. This comparison isolates the net impact of the intervention.

Sixth, double counting must be avoided. For instance, a highway improvement may reduce travel time and accident risk, which in turn increases property values. If the enhanced property value is added alongside direct

time and safety benefits, the benefits may be overstated. Seventh, decision criteria should be based on net present value (NPV); if the NPV exceeds the present value of costs, the project is considered viable. However, if multiple projects have positive NPVs but funding is limited, a higher discount rate should be applied to better reflect the true opportunity cost of capital. These principles together provide a structured and rational basis for evaluating public investments through CBA.

### **Approaches to Cost-Benefit Analysis (CBA)**

Cost-Benefit Analysis (CBA) is guided by a range of analytical approaches that inform its structure and application in economic evaluation. These include the microeconomic approach, incremental approach, opportunity cost approach, and the long-term perspective approach.

#### **Microeconomic Approach**

The microeconomic foundation of CBA is centered on evaluating how a project impacts society using economic performance indicators, particularly focusing on changes in individual and collective well-being. This approach excludes indirect effects on secondary markets and broader macroeconomic outcomes such as changes in fiscal flows or regional development on the grounds that these are often derivative of direct impacts and may lead to double counting if assessed independently. Additionally, the lack of reliable measurement methods for such broader impacts further supports their exclusion. However, these broader implications may be described qualitatively or tested through sensitivity analysis when supported by robust studies (Sartori et al., 2014).

#### **Incremental Approach**

The incremental approach in CBA involves comparing the projected outcomes of a project against a counterfactual baseline typically a scenario without the project. Two main components of this approach are: (1) defining the counterfactual scenario and (2) forecasting cash flows. For new projects, this entails estimating all future cash flows that the project would generate. For upgrades to existing infrastructure, it includes the minimum necessary investments to maintain service or implement minor changes. Historical financial data, especially for existing facilities, are valuable in estimating baseline conditions. The difference between the cash flows in the "with" and "without" project scenarios provides the foundation for calculating economic and financial indicators. Careful selection of the counterfactual is critical, as it significantly influences the validity of the analysis.

#### **Opportunity Cost Approach**

The opportunity cost approach evaluates the cost of a project by considering the benefits of the next best alternative that is forgone. This method recognizes that market prices alone may not always yield socially optimal outcomes, especially in the presence of market failures such as public goods, externalities, or asymmetric information. Therefore, this approach extends the analysis to include both tangible and intangible project inputs and outputs to more accurately assess the true social value of an investment.

#### **Long-Term Perspective Approach**

Many infrastructure and social investment projects have long-term horizons, often spanning decades. Accordingly, the CBA framework must adopt a long-term perspective that incorporates appropriate timeframes, applies relevant discount rates to future costs and benefits, and incorporates risk and uncertainty. Traditionally used in the ex-ante phase (pre-investment appraisal), CBA is increasingly applied during implementation (in medias res) and post-completion (ex post) to evaluate ongoing relevance and performance.

### **Identification of Project Benefits and Costs**

Accurate identification and categorization of project benefits and costs are essential for robust economic evaluation.

#### **Identification of Benefits**

According to the Asian Development Bank (ADB, 2016), benefits are broadly classified into incremental and non-incremental types. Incremental benefits are typically based on additional sales revenues or consumer surplus generated when a project reduces market prices or improves service access. In contrast, non-incremental benefits involve the valuation of non-marketed impacts, using methods such as revealed and stated preferences, benefit transfer, or empirical linkages between project outputs and outcomes.

### **Identification of Costs**

Costs must also be differentiated between incremental and non-incremental components. For incremental inputs, their value is determined by marginal cost reflecting the capital required to meet increased demand. For non-incremental inputs, the opportunity cost is represented by the value of the input if allocated elsewhere. Beyond this classification, costs must be disaggregated into specific categories including capital costs, contingencies, working capital, depreciation, interest during construction, transfer payments, externalities, sunk costs, and system-related costs.

### **Economic Valuation of Benefits and Costs**

Economic analysis aims to measure the social opportunity cost of a project by comparing its economic benefits and costs, while adjusting for market distortions and societal impacts (Ocneanu & Cristian, 2014). Unlike financial analysis, economic evaluation includes externalities, public goods, and broader social effects. It begins with financial cash flows and makes necessary adjustments such as removing taxes and subsidies or adding shadow prices to reflect true economic value. These adjustments ensure that input and output valuations are based on what society is willing to pay or forego, rather than purely on market prices which may be distorted by monopolies, tariffs, or regulation.

### **Stages of Economic Analysis**

The ADB (2016) outlines four primary stages in economic analysis: identifying gross benefits and costs, expressing them initially in financial terms, adjusting these values for economic relevance, and comparing the adjusted totals. The European Commission (2014) further elaborates this process through the following components:

**Transformation of Market Prices into Accounting Prices:** Market prices often do not reflect the social value of resources. Shadow pricing such as shadow wages is used to correct for labor market imperfections. Fiscal adjustments, including the treatment of taxes and subsidies, are also necessary to avoid misrepresenting costs and benefits.

**Monetization of Non-Market Impacts:** Environmental and social impacts such as landscape aesthetics or noise can be monetized using willingness-to-pay techniques. These factors are critical in evaluating the true societal effects of a project.

**Updating Estimated Costs and Benefits:** Time-sensitive adjustments using social discount rates are required to calculate the present value of long-term costs and benefits. This reflects the societal time preference for resources and returns.

**Calculation of Economic Performance Indicators:** Key indicators in economic analysis include the Economic Net Present Value (ENPV), Economic Internal Rate of Return (EIRR), and the benefit-cost ratio. These metrics, adjusted for distortions, serve as benchmarks for determining project viability. Projects with negative ENPVs or EIRRs below the social discount rate are generally not recommended unless they yield significant non-monetary social benefits (European Commission, 2014).

### **Key Concepts in Cost-Benefit Analysis**

Harve and Jowsey (2004) identified core concepts fundamental to CBA including present value, discounting, opportunity cost, shadow pricing, net present value (NPV), and internal rates of return. These principles underpin the economic rationale for project evaluation and ensure comparability across time and alternative uses of resources.

## **Government Decision-Making and Resource Allocation**

Public sector investment decisions are complicated by the fact that goods and services are often provided at zero or subsidized prices. Consequently, governments must consider both short-term fiscal impacts and long-term sustainability. Objective decision criteria, such as those provided by CBA, are essential for rational resource allocation. As public sector involvement in economic activities expands, the need for decentralized and transparent decision-making becomes more pronounced (Harve & Jowsey, 2004).

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## **Application and Steps of Cost-Benefit Analysis (CBA)**

Cost-benefit analysis (CBA) serves as a critical tool for evaluating the efficiency of resource allocation in both private and public sectors. In the **private sector**, financial CBA is commonly applied to justify investments in technology and equipment, estimate life cycle costs, ensure cost-effective regulatory compliance, and assess hidden costs and intangible benefits. It also demonstrates how leasing and outsourcing can reduce expenditures and how quality improvements influence returns. In contrast, **public CBA** is used to determine the societal value of programs and policies. Applications of CBA vary across countries and sectors, primarily in the types of impacts considered as costs and benefits, the accuracy of financial projections, and differences in discount rates (Kirama, 2010). While private CBA typically focuses on profitability, public CBA emphasizes social welfare, and its principal use is expected in the public sector (Harve & Jowsey, 2004).

## **Basic Steps of CBA**

Watkins et al. (2019) outline the following nine fundamental steps in conducting a cost-benefit analysis:

### **Step 1: Specify the Set of Alternative Projects**

Identify feasible alternatives, including the current situation (the counterfactual). Compare the net social benefits of the proposed project with those of the best alternative.

### **Step 2: Decide Whose Benefits and Costs Count**

Define the scope of analysis local, national, or global based on the stakeholders involved. Decisions on standing are context-dependent and particularly complex for transboundary impacts.

### **Step 3: Catalog the Impacts and Select Measurement Indicators**

List physical effects as benefits or costs and identify suitable units of measurement. Only include impacts that affect individual human value, ensuring a causal link between the project and outcomes.

### **Step 4: Predict the Impacts Over the Project's Life**

Estimate the magnitude and duration of each impact. This step is more challenging for long-term projects with complex inter-variable relationships.

### **Step 5: Monetize All Impacts**

Quantify impacts in monetary terms using individuals' willingness to pay. Non-market values, such as life or biodiversity, pose challenges for monetization.

### **Step 6: Discount Future Benefits and Costs**

Apply a discount rate to reflect the time value of money. The discount rate is typically determined by a central agency and varies by country.

### **Step 7: Compute Net Present Value (NPV)**

Calculate the net present value (NPV) by subtracting the present value of costs from the present value of benefits. Choose the project with the highest NPV, while recognizing that not all alternatives may have been considered.

### **Step 8: Perform Sensitivity Analyses**

Test the robustness of results to variations in key assumptions and inputs. Focus on variables with the greatest uncertainty or impact.

### **Step 9: Make a Recommendation**

Recommend the alternative with the highest NPV while incorporating insights from the sensitivity analysis.

## **Economic Valuation Techniques in CBA**

A range of valuation methods is available to capture both tangible and intangible impacts within a CBA framework. These techniques vary in complexity and applicability.

## **Other Cost-Based Approaches**

These methods estimate values based on costs incurred to avoid, mitigate, or substitute environmental damages.

### **Replacement Cost Method**

Estimates the costs of repairing or replacing damaged environmental assets. Effective for physical assets but limited for unique or non-replacable entities like cultural heritage sites.

### **Relocation Cost**

Uses costs associated with relocating assets due to environmental damage as a proxy for value.

### **Opportunity Cost**

Measures the value of benefits forgone when choosing an environmentally beneficial alternative, such as designating a wetland instead of developing the land (IDB Policy Directive B.9).

## **Valuing Environmental Amenities**

Environmental goods like biodiversity or recreation are often unpriced. Several indirect methods can assign monetary value to such benefits:

### **Hedonic Pricing (Property Value and Wage Differential Approaches)**

Analyzes how environmental quality affects market prices, such as housing or wage premiums for risky jobs.

### **Travel Cost Method**

Uses visitor expenditures to derive a demand curve and estimate the consumer surplus associated with recreational sites. This "revealed preference" method is widely used across developed and developing countries (Hanley & Spash, 1993).

### **Contingent Valuation Method (CVM)**

Uses surveys to elicit individuals' willingness to pay for hypothetical environmental changes. CVM is especially useful for estimating non-use values like existence or bequest values (Carson, 2000).

### **Benefit Transfer**

Applies valuation estimates from one context to another when time or resources are limited. Although practical,

this method can introduce significant uncertainty (Johnston et al., 2015).

### **Cost-Effectiveness vs. Cost-Benefit Analysis**

While CBA is ideal for valuing both costs and benefits in monetary terms, it may not always be feasible or desirable. In such cases, **cost-effectiveness analysis (CEA)** can be used as an alternative. CEA identifies the least costly way to achieve a specific outcome but does not assess whether the benefits outweigh the costs.

### **Cost-Benefit Analysis and Ethical Concerns**

Ethics concerns itself with what is morally right or good, spanning both Western and Eastern philosophical traditions. Western thinkers like Descartes, Locke, Berkeley, Hume, and Kant laid foundational ethical principles, while utilitarianism, advanced by Bentham and Mill, serves as a key underpinning of neoclassical economics and CBA. Utilitarianism advocates for maximizing collective benefit, but its neoclassical form focuses on individual utility maximization, which may result in overall societal welfare under certain conditions. In contrast, egalitarianism, as proposed by Rawls (1971), prioritizes the well-being of the least advantaged members of society. This view opposes elitism, which Nietzsche (1886) aligned with the success of the most privileged.

Environmental ethics distinguishes between instrumental values those useful to humans and non-instrumental or intrinsic values, which ascribe worth to nature independent of human use. When the environment is recognized as possessing intrinsic value, it demands moral consideration, extending ethical concern to ecosystems, animals, and even geological features (Booth, 1994).

### **Ethical Failures of Cost-Benefit Analysis**

From a utilitarian perspective, CBA encounters ethical limitations regarding intra-generational and intergenerational equity. It also struggles to address interspecies justice due to its emphasis on instrumental over non-instrumental values.

### **Intra-generational Inequality and Wealth Bias**

CBA tends to favor the wealthy due to its reliance on willingness-to-pay (WTP) as a proxy for utility. Since WTP is income-sensitive, individuals with greater wealth exert more influence on outcomes, regardless of actual welfare impacts. For example, in a society with shared natural resources, such as a forest valued differently by wealthy and poor communities, CBA may disproportionately prioritize affluent preferences (Hausman & McPherson, 2008).

### **Intergenerational Equity**

To address intergenerational concerns, the Krutilla-Fisher model proposes incorporating increasing environmental good prices and adjusting production benefits through a “double discount” mechanism (Krutilla et al., 1975; Hanley et al., 1991). Intergenerational CBA explicitly integrates future generations (Kula, 1988), accounting for present-biased preferences through techniques like the multigenerational net present value model (Padilla, 2001, as cited in Saez et al., 2007). Tools such as intergenerational discount factors further extend CBA's reach into long-term equity planning (Sumaila et al., 2005; Saez et al., 2000).

### **Ethical CBA and Pluralism**

A pluralistic approach considers diverse ethical perspectives, critical in addressing complex societal issues and sustainability challenges (Castle, 1993). Zerbe (2007) recommended ten ethical guidelines for CBA, emphasizing expert judgment, the incorporation of religious and cultural values, and the direct integration of ethical considerations into CBA rather than through indirect discount adjustments.

In Nepal, storage-type hydropower projects present ethical and practical complexities. Using Hanley and Spash's (1993) framework, CBA entails defining project scope, identifying significant impacts (both market and non-market), monetizing outcomes, applying discounting, and conducting sensitivity analyses. Non-market effects, such as environmental changes, are often evaluated using shadow pricing or revealed preference methods.

## **Pros and Cons of CBA**

Despite its utility in quantifying societal preferences, CBA faces criticisms for inadequately compensating affected groups and failing to reflect diverse value systems. For instance, in hydropower development, CBA may downplay aesthetic and ecological concerns. Mitigation measures rarely yield proportional welfare gains, and public willingness to pay for such efforts is limited. These shortcomings necessitate integrating CBA within broader decision-making frameworks that better capture externalities and site-specific complexities (Mattmann et al., 2016).

## **Discussion**

This study highlights the multifaceted ethical considerations that must be addressed when applying Cost-Benefit Analysis (CBA) to large-scale infrastructure projects such as hydropower development in Nepal. Traditional CBA, rooted in utilitarian philosophy, prioritizes aggregate welfare maximization. However, this approach has significant ethical limitations, particularly concerning intra-generational equity, intergenerational justice, and environmental sustainability.

The reliance on willingness-to-pay as a measure of value introduces systemic bias, favoring wealthier populations whose preferences are more heavily weighted due to their greater purchasing power. This can result in decisions that disproportionately marginalize low-income communities, particularly those who rely on common resources such as forests and rivers for their livelihoods. Consequently, CBA may perpetuate or exacerbate existing socioeconomic inequalities rather than mitigate them.

Intergenerational concerns are also insufficiently addressed in standard CBA frameworks. By heavily discounting future benefits and costs, traditional models risk undervaluing the long-term environmental impacts of hydropower projects. Alternative models, such as the Krutilla-Fisher approach and intergenerational discounting mechanisms, have been proposed to correct these imbalances by giving more weight to environmental goods and the welfare of future generations. These tools offer more ethical approaches to evaluating sustainability trade-offs, especially in projects with long-term ecological implications.

Environmental ethics introduces further complexity by distinguishing between instrumental and intrinsic values of nature. While CBA can account for instrumental values through shadow pricing and revealed preferences, it struggles to capture non-market and non-instrumental values such as cultural significance, biodiversity, and landscape aesthetics that often influence local opposition to hydropower development.

A pluralistic approach that integrates diverse ethical perspectives can enhance the comprehensiveness and legitimacy of CBA. Scholars have emphasized the importance of embedding ethical judgment within the analytical framework, rather than treating it as an afterthought or adjusting solely through discount rates. Ethical pluralism is particularly crucial when decisions involve competing interests, deep uncertainties, and irreversible environmental changes.

In hydropower planning, these ethical limitations become especially salient. While CBA provides a structured, monetized view of trade-offs, it must be used as one component within a broader decision-making framework. Incorporating stakeholder values, addressing site-specific externalities, and integrating long-term ecological and social concerns are essential steps toward more just and sustainable infrastructure development.

## **Conclusion**

The analysis reveals several ethical limitations of traditional Cost-Benefit Analysis (CBA), particularly in the context of large-scale infrastructure projects such as hydropower development. Traditional CBA, rooted in utilitarian principles, emphasizes the maximization of overall welfare. However, this approach often neglects distributive justice, systematically underrepresenting the preferences of marginalized or economically disadvantaged groups due to income-based valuation methods like willingness-to-pay (Hausman & McPherson, 2008). As a result, intra-generational inequality is perpetuated, with policies frequently skewed in favor of the affluent, who possess a greater capacity to influence valuation outcomes.

Furthermore, CBA faces significant challenges in addressing intergenerational equity. Conventional discounting

practices tend to devalue long-term environmental impacts, thus marginalizing the interests of future generations. Revised models such as the Krutilla-Fisher algorithm attempt to address this by acknowledging the increasing scarcity and rising value of natural resources over time (Hanley et al., 1991; Krutilla et al., 1975). Despite these efforts, the inclusion of future generations in economic evaluations remains insufficiently addressed in mainstream CBA applications.

Another critical shortcoming lies in CBA's inability to account for non-instrumental environmental values. The framework traditionally prioritizes human-centered, market-driven outcomes, overlooking the intrinsic worth of ecosystems, biodiversity, and natural landscapes. This exclusion limits CBA's ability to evaluate ecological and cultural dimensions essential to ethical environmental assessment (Booth, 1994). In this context, ethical pluralism emerges as a necessary approach, incorporating diverse moral perspectives such as egalitarianism, environmental ethics, and intergenerational justice. This broader ethical lens fosters a more comprehensive and inclusive evaluation of development impacts (Castle, 1993; Zerbe, 2007).

The study also highlights limited public willingness to pay for conservation, which further constrains the utility of monetary compensation mechanisms in mitigating environmental degradation. In hydropower projects, while positive externalities such as reduced greenhouse gas emissions are evident, public valuation of environmental losses often remains insufficient to justify comprehensive protective measures (Mattmann et al., 2016). This underscores the need for broader societal engagement and the integration of non-market values into project evaluations.

Overall, CBA should be regarded not as a definitive decision-making tool but as a supporting mechanism within a larger decision framework. Given its methodological and ethical constraints, it must be complemented by stakeholder engagement, qualitative judgments, and ethical considerations to ensure socially and environmentally responsible project outcomes.

### **Implications**

The findings of this study underscore the need to rethink and reformulate the application of Cost-Benefit Analysis (CBA) in evaluating large-scale development projects, particularly in environmentally sensitive and socioeconomically diverse contexts like hydropower development in Nepal. The utilitarian bias inherent in traditional CBA frameworks fails to account for equity across income groups and generations, thereby risking policy decisions that may reinforce social disparities and environmental degradation. This study suggests that incorporating ethical pluralism drawing from utilitarian, egalitarian, and environmental ethics into the evaluation process can lead to more inclusive and just decision-making. Additionally, the limitations in capturing non-market and non-instrumental values call for expanded methodologies that integrate qualitative assessments and participatory approaches. Policymakers, planners, and development agencies must therefore treat CBA as one component of a broader, ethically grounded decision-making framework rather than the sole determinant of project viability. Doing so can enhance the legitimacy, fairness, and sustainability of infrastructure investments, particularly in resource-dependent and ecologically vulnerable regions.

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# Investment Behavior: The Effects of Overconfidence Bias and Herding Behavior

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## Abstract

*This study analyzes the factors that influence individual investment behavior in Budhanilkantha Municipality, focusing on the psychological aspects that affect decision-making. The research specifically looks at how overconfidence bias and herding behavior impact investment choices, using gender as a moderating variable. The research utilized a cross-sectional design. A structured questionnaire was employed to gather data from 107 participants with diverse occupational backgrounds. The findings indicate a significant positive relationship between overconfidence bias, herding behavior, and investment decisions. Investors who exhibit higher confidence in their knowledge tend to make more frequent investment decisions, and many are also influenced by the opinions and behaviors of their peers. Overconfidence bias was identified as the most influential factor in investment behavior. The study concludes that understanding these psychological influences is vital for individual investors and financial professionals when making informed decisions. This knowledge contributes to market stability and efficiency. The insights gained from this study offer valuable implications for developing investment strategies and enhancing financial literacy initiatives.*

**Keywords:** Investment Behavior; Overconfidence Bias; Herding Behavior; Investment Decisions; Behavioral Finance; Psychological Factors.

**JEL Classification:** C31; G10; E22; F65; G40

## Introduction

Personal investing is not just about financial research and data crunching; human psychology also plays a significant role (Lakshmi et al., 2024). The personality of each investor varies due to differing ethos but typically, they base their investment decisions on objectives, profitability, and associated risks (Gakhar, 2019). Investors consider economic factors such as expected earnings, the condition of financial statements of firms/companies, recent price movements, risk, returns, etc., before investing; however, their emotional bias also influences their evaluations, and they may not be entirely objective (Riaz et al., 2012). Chira et al., (2008) address that consideration of psychological and emotional factors will help investors make better decisions, avoiding future errors by consciously choosing the best investment option. Psychological factors strongly influence decision-making by shaping our

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preferences (Sarwar & Afaf, 2016). Behavioral finance (BF) is an emerging discipline that encompasses various approaches to redefining the traditional view of economic rationality in finance. Specifically, BF utilizes research from psychology and cognitive science to explore the reasons behind individuals frequently making decisions that deviate from rational choices in consistent patterns (Chira et al., 2008).

Behavioral finance combines behavioral biases with an intellectual psychological component, as well as economics and finance, to create a solid supporting rationale for people's irrational behavior while making financial decisions (Javeed et al., 2017). It believes that the investors are influenced by their own biases rather than being rational (Olsen, 1998). In Nepal, NEPSE provides a platform for trading shares and stocks, with digitalization allowing online order placements, trading, and transaction settlements, enhancing transparency and convenience. The COVID-19 pandemic has led to increased stock market investments, making it a popular source of passive income post-pandemic. Financial literacy has improved, supported by educational institutions and social media. Access to news from platforms like *Share Sansar* and *Nepali Paisa* has boosted investor confidence (Rijal, 2022). Aregbeyen and Mbadiugha (2011) concluded a positive relationship between such factors with investment decisions in Nigeria, a developing nation. The result is consistent with the study of Riyazahmed and Saravananaraj (2015) in India, a developing nation. Likewise, the positive impact of such factors on investor decisions is visible from the study (Singh & Yadav, 2016). The study implies that females are more affected by such factors in comparison with males. Since every consistent research conclusion was drawn from the study area of developing nations, this study explores the impact of psychological factors in the Nepalese context. Thus, the study attempts to study the impact of psychological factors on investment decisions among individuals above 18 years old residing in Budhanilkantha Municipality. Likewise, the study focuses on determining the significant difference in the perception of the independent and dependent variables across genders.

## **Theoretical Review**

### **Theory of Behavioral Finance (TBF)**

The concept of behavioral finance can be traced back to 1912 when George Seldon published "Psychology of the Stock Market." However, the theory gained popularity and momentum in 1979 when Daniel Kahneman and Amos Tversky suggested that most investors tend to make decisions based on subjective reference points rather than objectively choosing the best option. Behavioral finance is an economic theory that suggests that investors often make financial decisions based on emotions rather than rationality and uses financial psychology to interpret investors' actions. According to the theory, investors are not always rational; instead, they have cognitive biases and limited self-control that led to errors in judgment. Some of the cognitive biases that affect our financial decisions include overconfidence bias, herd mentality, loss aversion, and confirmation bias. Similarly, key components of the theory include heuristics, mental accounting, and anchoring. The theory helps in identifying and overcoming financial biases and understanding how individual choices affect the market. Overall, behavioral finance helps in understanding how human emotions, biases, and cognitive limitations influence financial decisions regarding investments, payments, risk, and debt.

### **Theory of Planned Behavior (TPB)**

The theory of planned behavior, developed by Icek Ajzen in 1985 and 1991, aims to predict and explain a wide range of behaviors. It is an extended version of the theory of reasoned action (TRA) and examines the relationships between beliefs, attitudes, behavioral intentions, and actual behavior in human domains. The theory suggests that individuals have intentional control over their behavior. The more effort individuals put into performing a behavior, the more likely they are to succeed. This theory helps in understanding and predicting various financial decisions and behaviors, such as investment choices, debt management, mortgage use, cash saving, and credit management. According to the theory, achieving behavioral goals depends on both motivation (intention) and ability (behavioral control). It assumes that the more positive the attitude and subjective norm, and the greater the perceived control, the stronger a person will intend to perform a particular behavior.

### **Modern Portfolio Theory**

Markowitz (1952), an American economist developed a theory of "portfolio selection," which allows investors to analyze risk relative to their expected profit. For his pioneering work, Markowitz, a professor at Baruch College at the City University of New York, shared the 1990 Nobel Memorial Prize in Economic Sciences with William Sharpe and Merton Miller. Markowitz's theory, now recognized as Modern Portfolio Theory (MPT), is an investment framework aimed at maximizing expected returns for a specified level of risk or, inversely, minimizing risk for a target return by strategically selecting asset proportions. Unlike traditional security analysis, portfolio theory focuses on the statistical relationships between the securities within the entire portfolio rather than just the traits of individual investments (Edwin & Martin, 1997). Modern portfolio theory posits that the risk and return of a specific investment should not be assessed in isolation. Instead, they should be considered in terms of their impact on the portfolio's overall risk and return. In other words, investors can build a collection of various assets that achieve higher returns without increasing the level of risk.

### **Empirical Review**

Aregbeyen and Mbadiugha (2011) concluded that investors' decisions are significantly influenced by social, economic, cultural, and psychological factors, with social influences having the strongest impact. Economic factors, such as financial security and company performance, play a critical role, while psychological and cultural factors exert moderate to low influence. The findings support the behavioral finance theory, emphasizing that investment decisions are not purely rational but are influenced by cognitive biases and social pressures. Wamae (2013) found that the behavioral factors influencing investment decisions in Kenya's stock market, focusing on risk aversion, prospecting, anchoring, and herding have positive association with investment decisions, with herding having the greatest impact, followed by anchoring and prospecting, while risk aversion had the least contribution. Lodhi (2014) found that higher financial literacy boosts risk-taking in investment decisions, as literate investors can better identify strong companies. Interestingly, older investors often prefer lower-risk options, and improved accounting information reduces information asymmetry, leading to safer investments. Ultimately, age affects investment preferences, reducing risk appetite and favoring dividends over capital gains.

Riyazahmed and Saravanaraj (2015) divided the behavioral factors into four categories: heuristics, prospect, market, and herding. The study found that all heuristic variables moderately impact investment decisions, with the prospect dimension having a high impact. Fear of loss leads to lower stock market investments, while market information, price changes, and trends significantly influence decisions. Updated knowledge and share price fluctuations heavily affect investors, who often seek advice from peers before entering the market. Singh and Yadav (2016) concluded that economic factors, financial factors, social factors, cultural factors, and psychological factors have positive effect of all factors on investment decisions concerning gender. Sarwar and Afaf (2016) concluded a positive and significant relationship between psychological factors and economic factors on investment decisions; however, psychological factors have a greater impact on investment decisions compared to economic factors. Mweu and Omwenga (2017) reveal that firms' financial statements positively impact investor decisions. Key factors include net worth and liquidity, which attract investors, as well as the correlation between disposable income and investment choices, emphasizing a need for a stronger economy. Additionally, access to market information like dividends and ROI via ICT is crucial. Investors with strong financial management knowledge are more active, highlighting the importance of awareness for market growth. Gill et al., (2018) found a positive relationship between economic expectations and investment decisions, indicating that economic growth encourages higher investments. However, when information search was considered as a mediating variable, this relationship became insignificant and negative. Additionally, a significant positive relationship was identified between overconfidence bias and investment decisions, suggesting that overconfident investors are drawn to investments for potential maximum profits. Information search partially mediates this relationship, as it influences investors' attention to market realism.

Riaz et al., (2020) found that herding dimensions significantly influence investor decisions, with the prospect dimension leading to increased risk aversion during COVID-19. It noted that past stock performance was a key

factor, and all heuristic dimensions had a strong impact. Investors often rely on their skills and intuition about the economy, believing these would yield profitable outcomes. Safdar et al., (2020) focused on the examination of psychological and sociological factors affecting the investment decisions of individuals which concluded all the independent variables have a positive and significant relationship with investment decisions. Hartini et al., (2022) concluded that while risk profile negatively impacts investment decisions, diversification behavior positively affects decision-making through risk spreading. Financial literacy does not moderate the effects of risk profile and diversification but strengthens the impact of retirement preparedness, regulation, and technology on investment choices. Jamil et al., (2023) concluded that there is a partial positive effect of financial literacy and a significant positive effect of financial efficacy on investment decisions. It disclosed that the investors' knowledge of financial resources management and capabilities to manage it have a heavy influence on their investment decisions. Shahzad et al., (2024) concluded that behavioral biases, specifically ORAAH: overconfidence, representativeness, availability, anchoring, and herding biases significantly influence individual investment decisions in the stock market. The results highlight the importance of effectively managing ORAAH practices for different stakeholders, as this can result in notable returns on their investments. Investors should consider these common behavioral biases to reach their long-term strategic investment objectives.

**Research Framework**

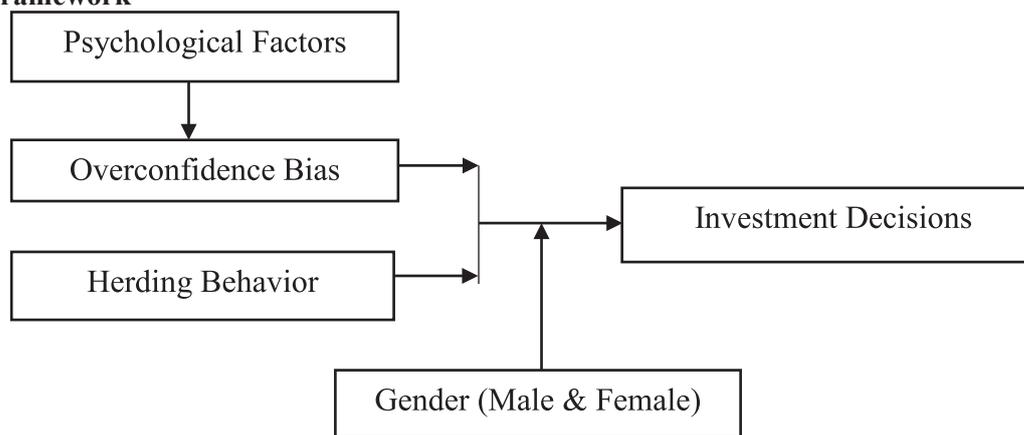


Figure 1: Conceptual Framework of the Study

The psychological factors included herding behavior and overconfidence bias as its dimension. Herding behavior is simply the tendency to follow the footwork of others. Overconfidence bias is the tendency to overestimate own skills and knowledge that presents a negative impact on decision-making. The moderating variable in the study is gender (male and female).

**Operational Definitions:**

***Overconfidence Bias***

Overconfidence means when someone has more confidence in his/her abilities in some situation (Sarwar & Afaf, 2016). Overconfidence bias makes an investor think that the investment decisions of other persons are caused by their emotions, perceptions, feelings, and moods while their own decisions are a result of purposeful and sensible ideas that make them think all their decisions are logical while opinions of others as illogical and insensible (Gill et al., 2018). This study highlights the overconfidence bias, which refers to investors' tendency to believe that they possess complete knowledge about investment decisions that lead them to invest in stocks based on their own experience, belief that the Stock Exchange is an attractive investment channel, and rely on market statistics without spending enough time analyzing them.

### **Herding Behavior**

Herding behavior refers to the tendency of an individual to follow the actions or directions of others; with the advent of online trading, investors can react more quickly to new information. Investors impressed by the effects of herding trend move in similar flows with other investors when stock prices change (Caparrelli et al., 2004). Some investors have the impact of others on their decision-making instead of following their strategies (Bikhchandani & Sharma, 2000). This study has emphasized the concept of herding behavior, which refers to the tendency of individuals to rely on the recommendations of their friends and colleagues when making investment decisions. They may be motivated to invest when they see others doing the same and tend to follow the reaction of others in the stock market, which can easily influence their decision-making process.

### **Investment Decisions**

Investment decisions are made to seek better returns in the future by sacrificing immediate advantages (Kishori & Kumar, 2016). Investment decisions of individuals are more heavily influenced by psychological factors than by economic factors (Sarwar & Afaf, 2016). Laopodis (2020) defines investment as today's sacrifice of resources (time, money, & energy) to get better or more resources in the future. Musfidah et al., (2022) states making an investment decision means choosing the best way to achieve the goal of obtaining future returns with limited financial resources. This study highlights the importance of considering various factors before investment decisions, having confidence in one's ability to outperform the market, and selecting safe investment instruments for a high degree of investor satisfaction level.

Table 1

Sources of Construct

Variables	Sources
Overconfidence bias	Riyazahmed and Saravanaraj (2015); Sarwar and Afaf (2016); Gill et al., (2018); Shahzad et al., (2024)
Herding behavior	Riyazahmed and Saravanaraj (2015); Riaz et al., (2020); Wamae (2013); Sarwar and Afaf (2016); Singh and Yadav (2016); Shahzad et al., (2024)
Investment decisions	Riyazahmed and Saravanaraj (2015); Riaz et al., (2020); Aregbeyen and Mbadiugha (2011); Lodhi (2014); Safdar et al., (2020); Singh and Yadav (2016); Wamae (2013); Mweu and Omwenga (2017); Hartini et al., (2022); Jamil et al., (2023); Gill et al., (2018); Sarwar and Afaf (2016); Shahzad et al., (2024)

### **Hypotheses**

- $H_{01}$ : There is no significant relationship between herding behavior and investment decisions.
- $H_{02}$ : There is no significant relationship between overconfidence bias and investment decisions.
- $H_{03}$ : There is no significant impact of herding behavior on investment decisions.
- $H_{04}$ : There is no significant impact of overconfidence bias on investment decisions.
- $H_{05}$ : There is no significant difference in perception of overconfidence bias across males and females.
- $H_{06}$ : There is no significant difference in perception of herding behavior across males and females.
- $H_{07}$ : There is no significant difference in perception of investment decisions across males and females.

### **Research Methods**

The study employed a quantitative research approach to quantify and analyze the collected data through mean, median, standard deviation, correlational, and regression analysis. Likewise, the study has used a deductive approach from the reasoning perspective using the theory of behavioral finance, and the theory of planned behavior (Aregbeyen & Mbadiugha, 2011) and (Wamae, 2013). In addition, a cross-sectional research design is adopted since the data was collected only once from potential investors. The population of the study were individuals aged above 18 years old irrespective of their occupational status from the Budhanilkantha Municipality. The selection of the study area was based on the convenience factor for the researcher to collect data. The study included only

individuals above 18 years old who were eligible to operate their demat account and make rational decisions. Since the population size was larger and unknown, the sample was drawn based on the convenient sampling technique to determine a sample size of 97 which means 97 or more surveys are needed at a confidence level of 95% within ±10% margin error (Yamane, 1967). A total of 115 questionnaires were distributed to those who were willing to participate and were distributed via online and offline methods from May 12, 2024. The questionnaires were distributed through social media channels like Facebook and Instagram. A total of 50 questionnaires were distributed in printed form to the respondents. The responses were analyzed to examine the validity of the questionnaire which resulted in 8 responses being invalid. Consequently, the study was based on 107 valid questionnaires. The study is based on primary data collected via a structured questionnaire designed to determine the impact of psychological factors on the decision-making of potential investors. The participants were given instructions for each question, including yes/no questions, ranking questions, multiple choice questions, and a Likert scale ranging from strongly disagree to strongly agree. The Likert scale questions were formulated based on a review of literature and past literature from the potential investors. The data was first entered into MS Excel and then evaluated and analyzed using SPSS software.

**Model Specification**

$$Y = a + b_1X_1 + e$$

$$Y = a + b_2X_2 + e$$

Where,  $Y =$  Investment decision

$a =$  Intercept

$X_1 =$  Overconfidence bias

$X_2 =$  Herding behavior

$b_1 =$  Coefficient of overconfidence bias

$b_2 =$  Coefficient of herding behavior

$e =$  error term

**Results**

**Demographic Analysis**

Table 2

Demographic Results

Gender	Frequency	Percent	Cumulative Percent
Male	43	40.2	40.2
Female	64	59.8	100
Total	107	100	
<b>Age</b>			
18-24	80	74.8	74.8
24-30	13	12.1	86.9
above 30	14	13.1	100
Total	107	100	
<b>Educational Level</b>			
Plus 2	11	10.3	10.3
Bachelors	81	75.7	86
Masters	15	14	100
Total	107	100	
<b>Occupation</b>			
Student	70	65.4	65.4

Business	7	6.5	72
Nurse/ Health Professionals	5	4.7	76.6
Others	25	23.4	100
Total	107	100	
<b>Investment Experience</b>			
Yes	73	68.2	68.2
No	34	31.8	100
Total	107	100	

Table 2 shows that out of 107 respondents, 43 are male and 64 females, indicating a higher female proportion. The age distribution shows that 80 respondents (74.8%) are in the 18-24 age group, followed by 13 (12.1%) in the 24-30 age group and 14 (13.1%) above 30. Most (75.7%) hold a Bachelor's degree, while 14% have a Master's and 10.3% are at the Plus 2 level. Additionally, 65.4% (70 individuals) are students, 6.5% (7 individuals) are in business, and 4.7% (5 individuals) work in nursing and health. Also, 73 participants are involved in investment decisions, with 68.2% having investment experience. It indicated the participation of investors having investment experience.

**Opinion Survey Analysis**

Table 3

Results on Opinion Survey

Responses	Opinion on following footwork of other		Cumulative							
	Frequency	Percent	Percent							
Yes	89	83.2	83.2							
No	18	16.8	100							
Total	107	100								
Opinions on spending time analyzing the market										
Yes	93	86.9	86.9							
No	14	13.1	100							
Total	107	100								
Opinions on the recommendation to others to invest										
Yes	92	86	86							
No	15	14	100							
Total	107	100								
Influencing factors of investment decisions										
Statement	Responses		Percent of Cases							
	N	Percent								
Financial knowledge about the share market	75	31.90%	70.10%							
Recommendations from friends and colleagues	44	18.70%	41.10%							
High return and future financial security	74	31.50%	69.20%							
Experience with investment instruments	42	17.90%	39.30%							
Total	235	100.00%	219.60%							
Prioritizing the motivating factors in investment decisions among respondents										
Statements	Rank 1		Rank 2		Rank 3		Rank 4		Median	Rank
	N	%	N	%	N	%	N	%		
Financial security	59	56.20%	25	23.80%	16	15.20%	5	4.80%	1	1
Friends' recommendation	4	3.80%	18	17.10%	16	15.20%	67	63.80%	4	4
Experience in the share market	17	16.20%	29	27.60%	47	44.80%	12	11.40%	3	3
Financial literacy	25	23.80%	33	31.40%	26	24.80%	21	20.00%	2	2

Table 3 shown that 83.2% of participants follow the investment choices of friends, colleagues, brokers, and relatives, while 16.8% do not. Out of 107 respondents, 89 follow others' decisions, and 14 (86.9%) do not spend enough time analyzing the stock market, with 93 investing sufficient time. Additionally, 92 respondents (86%) recommend investing in the stock market, whereas 15 do not. Based on Table 2, 86% of participants suggest that their friends and relatives participate in the stock market. The primary factor influencing investment decisions is financial knowledge about the stock market, supported by 31.90% of respondents (75 responses). Additionally, 74 respondents indicated that future financial security and high returns affect their choices. Approximately 31.50% believe that future earnings and financial security significantly impact their decisions. Recommendations from friends and relatives influenced 18.70% (44 responses), while experience with investment instruments had the least influence at 17.90% (42 responses). Overall, financial knowledge was the most significant factor, while experience ranked the lowest. The majority of respondents, 56.20%, ranked financial security as the top motivator for investors, followed by financial literacy at 31.40%. Experience in the stock market was the third most important factor, supported by 44.80%. Friends' recommendations were deemed the least significant, with 63.80% of participants considering them unimportant.

**Survey on Overconfidence Bias**

Table 4

Survey on Overconfidence Bias

Statements	Ratings					Total responses	Weighted value	Weighted mean
	SDA	DA	N	A	SA			
I have complete knowledge of the stock exchange.	11	37	44	12	3	107	280	2.62
I invest in the stocks which I think to be the best according to my own experience.	10	11	34	43	9	107	351	3.28
I believe that the Stock Exchange is an attractive investment channel.	0	12	24	49	22	107	402	3.76
I take the least time possible to analyze and rely on available market statistics.	12	28	34	27	6	107	308	2.88
Grand weighted mean								3.13

Table 4 shows that investors view the stock market as the most attractive investment channel, with a weighted mean of 3.76. Experience with stocks and financial instruments influenced their decisions, averaging 3.28. Most respondents were neutral about the time spent analyzing market statistics, with a mean of 2.88. The respondents also showed neutral agreement on having complete knowledge of the stock exchange, averaging 2.62. Overall, the weighted mean for overconfidence bias was 3.13, indicating it is the most influential factor in investment decisions.

**Survey on Herding Behavior**

Table 5

Survey on Herding Behavior

Statements	Ratings					Total responses	Weighted value	Weighted mean
	SDA	DA	N	A	SA			
I consider information from friends/colleagues to be more reliable.	7	26	36	31	7	107	326	3.05

Statements	Ratings					Total responses	Weighted value	Weighted mean
	SDA	DA	N	A	SA			
My investment is motivated when others are making a new investment.	7	19	30	44	7	107	346	3.23
I usually react quickly to the changes in other investors' decisions and follow their reactions to the stock market.	6	28	42	27	4	107	316	2.95
Grand weighted mean								3.08

Table 5 shows that most respondents reported being motivated by others' investment decisions, with a weighted mean of 3.23. The respondents found information from fellow investors, friends, and relatives reliable, yielding a mean of 3.05. However, participants were neutral about quickly reacting to others' stock market decisions, with a mean of 2.95. The overall weighted mean for this variable is 3.08.

**Survey on Investment Decisions**

Table 6

Survey on Investment Decisions

Statements	Ratings					Weighted value	Weighted mean	
	SDA	DA	N	A	SA			
In general, I am satisfied with how I make investment decisions.	6	19	37	41	4	339	3.17	
I consider all possible factors while making investment decisions.	4	17	27	37	22	377	3.52	
I believe that my skills and knowledge of the market help me to outperform the market.	4	20	42	33	8	342	3.20	
I make sure that my investment in stocks has a high degree of safety investment decision-making.	6	14	27	51	9	364	3.40	
Grand weighted mean								3.37

Table 6 highlights that most investors thoroughly evaluate various factors before making investment decisions, evidenced by a weighted mean of 3.52. Additionally, with a weighted mean of 3.40, investors prioritize maintaining high security in their investment instruments. They also tend to agree that their market skills contribute to outperforming, reflected in a weighted mean of 3.20. Overall, investors express satisfaction with their decisions and practices, considering risk and other influences, resulting in a satisfaction mean of 3.17.

### Gender and Time Spent to Analyze the Share Market

Table 7

Cross-Tabulation between Gender and Time Spent to Analyze the Share Market before Making Investment Decisions

Gender		Time spent to analyze the share market before making investment decisions		Total
		Yes	No	
Male	Count	39	4	43
	% within Gender	90.70%	9.30%	100.00%
Female	Count	54	10	64
	% within Gender	84.40%	15.60%	100.00%
Total	Count	93	14	107
	% within Gender	86.90%	13.10%	100.00%

Table 7 illustrates the relationship between gender and the tendency to analyze the stock market for informed investment decisions. The data reveals that 90.7% of male participants (39 individuals) and 84.4% of female participants (54 individuals) are inclined to invest significant time in market analysis. Conversely, 9.3% of males and 15.6% of females feel they haven't dedicated enough time to this practice. Overall, 86.9% of participants demonstrate a strong interest in stock market analysis, with males showing a slightly higher inclination.

### Descriptive Analysis

Table 8

Descriptive Analysis Results

Variables	Mean	Median	Std. Deviation	Variance	Skewness	Kurtosis
Overconfidence bias	3.133	3.250	0.599	0.359	-0.471	0.608
Herding Behavior	3.078	3.333	0.772	0.597	-0.387	-0.650
Investment Decision	3.322	3.500	0.728	0.531	-0.696	0.695

In Table 8, overconfidence bias has the highest mean value at 3.133, followed closely by herding behavior at 3.078. The mean for investment decisions stands at 3.322. The highest median is for herding behavior at 3.333, followed by overconfidence bias at 3.250, while investment decisions have a median of 3.5. Regarding variability, herding behavior shows the highest standard deviation (0.772) and variance (0.597), with investment decisions next at 0.728 and 0.531, respectively. Overconfidence bias has the lowest standard deviation (0.599) and variance (0.359). In terms of skewness, both overconfidence bias (-0.471) and herding behavior (-0.387) exhibit slight negative skewness, while investment decisions show a more pronounced negative skewness (-0.696). The kurtosis indicates that overconfidence bias (0.608) and investment decisions (0.695) have moderate kurtosis, reflecting heavier tails and concentration around the mean. In contrast, herding behavior exhibits a platykurtic distribution, indicating a flatter shape with lighter tails and more evenly spread data points.

**Independent Sample t-test**

Table 9

Independent Sample t-test for the Equality of Mean Across Gender

Variables	Equal Variance	Levene's Test for Equality of Variances		t-test for Equality of Means				Hypothesis Result
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	
		Overconfidence bias	Equal variances assumed	0.165	0.685	0.912	105.00	
	Equal variances not assumed			0.911	89.90	0.365	0.108	
Herding Behavior	Equal variances assumed	0.609	0.437	-0.173	105.00	0.863	-0.027	Ho is accepted
	Equal variances not assumed			-0.173	89.58	0.863	-0.027	
Investment Decision	Equal variances assumed	0.258	0.612	0.984	105.00	0.327	0.141	Ho is accepted
	Equal variances not assumed			0.981	89.47	0.329	0.141	

Table 9 presents results assuming equal variance for overconfidence bias, herding behavior, and investment decisions. For overconfidence bias, the mean difference between male and female respondents is 0.108 with a P-value of 0.685, indicating an insignificant difference. Similarly, herding behavior shows a mean difference of -0.027 with a P-value of 0.437, also deemed insignificant. In terms of investment decisions, the mean difference is 0.141, with a P-value of 0.612, again leading to an acceptance of the null hypothesis. Overall, all tests result in accepting the null hypothesis, suggesting no significant differences across genders in these areas.

**Association Analysis**

Table 10

Integrated Correlation Matrix

Variables	OB	HB	ID
OB	1		
HB	.298** 0.002	1	
ID	.533** 0.001	.403** 0.001	1

Table 10 presents a significant positive correlation between overconfidence bias and investment decisions, evidenced by a correlation coefficient of 0.533 at a 99% confidence level ( $p < 0.01$ ). This indicates that higher overconfidence enhances investment decision-making. Additionally, herding behavior also shows a positive relationship with investment decisions, with a correlation coefficient of 0.403 at the same significance level. Thus, increased herding behavior corresponds with more active investment decisions.

### Impact of Overconfidence Bias on Investment Decisions

Table 11

#### Integrated Impact Analysis of Overconfidence Bias on Investment Decisions

Coefficients a	Unstandardized Coefficients		t	Sig.	F	Sig.	Model result	Adjusted R Square
	B	Std. Error						
(Constant)	1.292	0.32	4.033	0.001	41.666	.001b	Model is fit	0.277
OB	0.648	0.1	6.455	0.001				

*Hypotheses result: Null hypothesis rejected at 0.01 level*

*Dependent Variable: Investment Decision*

In Table 11, overconfidence bias significantly impacts investment decisions, with a regression coefficient of 0.648, leading to the rejection of the null hypothesis at the 0.01 significance level. This suggests a 1% increase in overconfidence bias corresponds to a 0.648% increase in investments. Additionally, the model's accuracy at the same significance level, showing overconfidence bias accounts for 27.7% of the variation in investment decisions, making it the most influential factor compared to herding behavior.

### Impact of Herding Behavior on Investment Decisions

Table 12

#### Integrated Impact Analysis of Herding Behavior on Investment Decisions

Coefficients a	Unstandardized Coefficients		T	Sig.	F	Sig.	Model result	Adjusted R Square
	B	Std. Error						
(Constant)	2.151	0.267	8.052	0.001	20.414	.001b	Model is fit	0.155
HB	0.381	0.084	4.518	0.001				

*Hypotheses Result: Null hypothesis is rejected at 0.01 level*

*Dependent Variable: Investment Decision*

Table 12 demonstrates that herding behavior positively influences individual investment decisions, with a regression coefficient of 0.381. This indicates that the null hypothesis is rejected at the 0.01 significance level, suggesting a 1% increase in herding leads to a 0.381% rise in investment decisions. The model also fits well at the same significance level, confirming the accuracy of the predictions. Additionally, the herding behavior accounts for 15.5% of the variance in investment decisions.

### Discussions

The analysis revealed a significant link between overconfidence bias and investment decisions among individuals aged 18 and above. Increased overconfidence often leads to a greater interest in investing, potentially resulting in less scrutiny of market data. The findings align with the research conducted by Sarwar and Afaf (2016), which identified a strong correlation between overconfidence and investment choices. Similarly, Gill et al., (2018) observed that overconfident investors tend to be more proactive in seeking returns, driven by their perceived abilities. Furthermore, the results are consistent with those of Shahzad et al., (2024), who highlighted a significant positive impact of overconfidence bias on investment decisions. However, this differs from Riyazahmed and Saravanaraj (2015), who suggested that the impact of overconfidence is moderate compared to herding behavior. Overall, these results highlight the complexity of overconfidence bias in investment behavior and the need for further research in this area. A comprehensive analysis revealed a significant correlation between herding behavior and the investment choices of individuals aged 18 and older. Investors often rely on the opinions of friends and colleagues, mirroring their reactions to market changes. This aligns with Wamae (2013), which shows that investors are influenced by their environment and group dynamics when making share purchases. Similarly, Sarwar and Afaf (2016) and Shahzad et al., (2024), found a significant positive relationship and impact

between herding behavior and investment decisions respectively, highlighting investors' tendency to seek advice from others before investing. Riaz et al., (2020) reinforced these findings, noting that investors' lack of market understanding amplifies herding due to fear of losses. Singh and Yadav (2016) also indicated that investors prefer guidance from friends and relatives. While herding behavior has a lesser influence compared to overconfidence bias, Riyazahmed and Saravanaraj (2015) assert it has the highest impact on investment decisions. The research indicates no significant differences in investment decision perceptions among individuals over 18 based on gender. This is consistent with Sarwar and Afaf (2016), which also found no strong correlation between gender and investment choices. However, male investors are generally more active in the investment process, while female investors often seek advice from friends and family and are influenced by the success stories of others. In contrast, male investors tend to rely less on external advice and are motivated by different factors.

## **Conclusion**

The research is focused on examining the impact of psychological factors on the investment decisions of individuals above 18 years old living in Budhanilkantha municipality. The study aimed to investigate the most influential factors in investment decisions concerning two dimensions of psychological factors: overconfidence bias and herding behavior. Additionally, the study seeks to analyze the gender-based differences in the perception of overconfidence bias, herding behavior, and investment decisions. The research was conducted using a structured questionnaire administered to 107 individuals. Data analysis was carried out using a variety of statistical tools including frequency, mean, median, standard deviation, independent t-test, correlation, and regression analysis. The study has concluded that overconfidence bias significantly impacts investment decision-making. The research indicates that individuals who exhibit a high degree of confidence in their grasp of market analytics and have a strong belief in their own experience are more inclined to engage in investment activities. Essentially, the study proposes that the greater the self-assurance and faith that investors have in their abilities, the higher the probability of them participating in various investment instruments. Moreover, the research emphasizes that investors' decision-making is considerably influenced by their levels of confidence and their positive outlook toward the market. Likewise, the study suggests that investors perceive the opinions of their friends, relatives, and brokers as more reliable, and they are easily influenced by the decisions and actions of others in the market. This herding behavior significantly impacts the financial markets. As such, it is advisable for an investor to carefully consider the actions of reliable and successful investors who are likely to bring profitability. This research study highlights the crucial influence of psychological factors on investment decisions and the subsequent impact on investment instruments. It emphasizes that a comprehensive understanding of psychological factors can contribute to the creation of a high-index market. This underscores the importance of integrating psychological insights into investment analysis and decision-making processes to achieve more stable and predictable investment outcomes.

## **Implications**

The research findings carry significant implications for individuals seeking to engage in investment decisions. The study recognizes that delving into the psychological aspects of investment behavior is key to gaining a deeper comprehension of market dynamics, ultimately resulting in more well-informed and effective investment choices. Furthermore, the insights drawn from the study not just benefit individuals but also extend to the companies issuing shares, enabling them to better understand their investors and optimize the trading of their financial instruments in the market. By acknowledging the profound impact of psychological factors on investment behavior, financial professionals are empowered to make informed decisions that contribute to a more efficient and strong market performance. This underscores the importance of acquiring a comprehensive understanding of these psychological factors, which in turn can significantly contribute to the development of a successful market index. Overall, the study reinforces the value of considering psychological aspects in investment decision-making and market dynamics, providing a solid foundation for more successful and effective investment strategies.

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# Performance Factors Contributing Enterprise Development: Finding from Survey in Kavre District

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## Abstract

*Regarding the acknowledged importance of micro and small enterprises to both the developed and developing world, this research focuses on the factors contributing successful performance of micro-enterprises at Kavrepalancowk district promoted under the Micro-Enterprise Development (MED) model of the Ministry of Industry. Theories and researches on entrepreneurship development have indicated certain performance factors responsible for enterprise success or failures. Therefore, the general objective of this study is to analyze the effect of performance factors contributing to micro-enterprise development. Kavrepalanchok district is selected on the basis of purposive sampling due to its richness in information holdings, experience, and closer to field visit. Micro-entrepreneurs are selected based on simple random sampling. Descriptive research designed is applied in this research and the collected data is analyzed using both descriptive and inferential statistical tools. The article's rationality is backed by its usefulness to the Government of Nepal in taking policy and program level decisions, beneficiary micro-entrepreneurs for using the benefits of this model, and other training providers to replicate the whole or useful components of this model. This research finding reveals that entrepreneurial knowledge, skills and technological access, credit facility, and access to the market have positive relationship with micro-enterprise performance significantly*

**Keywords:** MSEs, Enterprise Performance, Development, Micro-Enterprise.

## Background Information

Micro and Small Enterprises (MSEs) have gained universal recognitions in economic development and sustainability due to their capabilities to income and employment generation through absorbing local level skills, resources, and technology. Compared to medium and large enterprises, they are easy to establish and operate. Governments of various countries have also provisioned various incentives to promote them with respect to their economic importance. Karki (2020) has also stated that due to characterized by huge investment, large market, sophisticated technology for operation, big enterprises are less likely established in Nepal. Therefore, he also sees the importance of micro

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and small enterprises for the economic development of Nepal due to their capacities in utilizing local level skills, technologies and resources. Despite the importance of MSEs, Kharel and Dahal (2020) have identified various challenges that significantly affect their performance. They have portrayed that performance factors like poor access to credit, lack of information and coordination regarding input supply and marketing linkage, lower productivity etc. are some common challenges facing by Nepalese MSEs.

Chitrakar and Kang (2023) have also identified that MSEs play a significant role in job creation and contributing to GDP. According to Gibbens (2020; cited by Chitrakar and Kang, 2023) two-third of the global jobs and half of world's GDP is generated by micro, small, and medium size enterprises (MSMEs). In Nepal, MSMEs composed of 99% of total industries generating 95% industrial employment. With respect to such important contribution of MSEs, they have revealed that MSEs need strong handholding regarding establishing, growing, and sustaining the enterprise business and suggested to apply suitable business development service models to help overcome the challenges MSEs are facing for their successful performance. They have also identified that Nepal faces dearth to the design and application of such effective enterprise development models. Therefore, one of the main objectives of this article is to analyze the effectiveness of the enterprise development tool called the Micro Enterprise Development (MED) model.

The MED model is composed of six components of micro enterprise performance support to assist them grow and develop. The MED model is implemented by the Ministry of Industry for poverty alleviation in the country by helping overcome challenges of micro-enterprises for their performance improvement.

Different criteria have been applied by nations while defining MSEs. The used criteria to define MSEs are quantitative, qualitative, or mix of both. In Nepal, the term micro-enterprise was not addressed as separate category of industry prior to the Industrial Policy 2010. Currently, the legal definition of micro-enterprise as a separate category of industry is available with the commencement of the Industrial Act 2016. Industrial Act (2016) has defined micro-enterprises on the basis of employed number of employees (not more than 9 employees including owner), invested capital (maximum five hundred thousand except the cost of land and building), annual sales turnover (not exceeding five million), and consumption of energy (maximum 20 Kilo Watt). All such criteria are quantitative in nature. Since Nepal has also recognized the importance of MSEs for the development of the national economy, it has provisioned various incentives to promote them.

The recognized importance of MSEs has been revealed by various research for their contribution in generating employment, creating wealth and promoting innovation. But Abebaw, Mulate, and Nigussie (2018) have stated that their growth and sustainability is doubted by particular weaknesses performance like innovation; lack of financial access and management; marketing linkage; entrepreneurial knowledge, skill human resources etc. Such lacking are causing them performing out of full potential and subjected for fail to grow (p. 71). Therefore, MSEs should be facilitated for overcoming their performance growth constraints like lack of access to credit; entrepreneurial know-how for opportunity identification, motivation, and commitment; information; working premises; skills and management expertise, access to appropriate technology etc. by handholding them with suitable enterprise support tools and techniques.

Micro-Enterprise Development (MED) model is a package of six enterprise creation and development supports including group formation and saving mobilization, entrepreneurship development and skill training, technology grant support, support linkage to financial institution, and marketing and market linkage (Neupane, 2024). Based on these backgrounds showing importance of micro-enterprises for the economy, their challenges to achieve growth performance, and their requirement for the hand holdings with suitable tools and techniques, this study is very significant to assess the effectiveness of the supporting tools for improving the performance factors of developing micro-enterprises. There is dearth of such studies in Nepal. Therefore, the finding of this study will be helpful to adopt and promote suitable tools by the government to develop MSEs in the country. Similarly, such findings could be also applied by other skills and entrepreneurship development training providers from private sectors.

## **Literature Review**

### **Theoretical Review:**

#### ***Micro and Small Enterprises***

Regarding the definition of small firms, Bolton (1971) report has indicated that it is not easier. Their report has highlighted that mere quantitative criterion like the number of employments generated or the amount of invested assets cannot properly define small firms. They have insisted that the definition of small firms should be emphasized on their characteristics which is not similar to larger firms or significantly different. Importance of micro and small enterprises has been evidently documented for their contribution in the contemporary world economy (Barton, 1997). Bolton's paper has summarized that supports designed to micro and small firms should be market driven which helps them sustain longer. Their report has indicated that properly identifying challenges of SMEs is a very tough task due to their varied nature. The report has recommended handholding them by suitable business development tools for their performance growth.

Ghimire (2011) has stated that criterion used to define MSEs differs worldwide. Criterion used to define micro and small enterprises are influenced by their size of economies, policy of government, and external environment to some extent. He has further stated that MSEs are also recognized as backbone of national economy in Asia with respect to their importance in generating income and employment by utilizing locally available resources. He has identified that MSEs faces various challenges for their growth and opined on their need to be supported by conducive policies and institutional mechanisms.

The official introduction and definition of micro enterprises is provisioned for the first time in Nepal by the Industrial Policy (2010). Industrial Enterprise Act (IEA) 2016 has defined micro enterprises on the basis of energy consumption, employment generation, annual sales turnover, and investment (except the value of land and building). All such criteria are quantitative. Nepal government has also recognized the importance MSEs for its economic development thereby provisioned various funds and incentives for micro, cottage, and small enterprises. Government of Nepal has given high importance to prepare conducive policies and institutional environment to promote them.

Department of Cottage and Small Industry (DCSI) was constituted with the aim of promoting and fostering various kinds of cottage and small industries to enhance industrial productivity in Nepal as similarly emphasized by the Sixth Plan (1980-1985). This sector was kept in priority also by eighth and ninth plans. United Nations Development Program (UNDP) had started to fund Micro-Enterprise Development Program (MEDEP) for implementation of the Micro-Enterprise Development (MED) model in 1998 in the flagship of Ministry of Industry (MoI).

Garments and carpets, Pashmina and silk, Dhaka and Allo, metal craft, Thanka, ceramics, crafts from stone, metal, and bamboo are products of Nepal popular in Europe, United States, and Asia having possibility of large export market. Poverty alleviation is the main aim of all the periodic plans of Nepal. Majority of periodic plans of Nepal have given importance to reduce poverty through the promotion of micro and cottage industries. By promoting MSEs, periodic development plans of Nepal have targeted to reduce income inequality (Ghimire, 2011). Currently DCSI offices are supporting MSE sector from all districts of Nepal. Similarly, MEDEP now has successfully graduated to Micro-Enterprise Development Program for Poverty Alleviation (MED-PA) and fully undertaken by the MoI. The MED program is going to be expanded in all 753 local Governance to support micro-enterprises under the Ministry (Neupane, 2024).

### **Conceptual Review on Challenges of Micro and Small Enterprises (MSEs)**

Kharel and Dahal (2020) have identified number challenging constraints that hindering fostering of MSEs in Nepal. According to their report, the majority of the constraints are related to production, international linkage and finance. They have portrayed two types of Nepali firms i.e. exporting and non-exporting. According to them, the constraints faced by MSEs are lower product quality, lack of recognition in the national and international market, and suffering from small market size of Nepal. Lack of technology, dependency on foreign inputs, direct access to importers, and lack of financial access are other major challenges of Nepalese MSEs hindering their performance

improvement.

The MSEs should also be ready to timely and quickly adapt to the ever-changing business environment so that they can face their growth challenges properly. Lemma and Kebede (2018) have identified that the cost per job created by MSEs sector is lower than those of big businesses. MSEs found played vital role in promoting technology and other innovative activities. Despite the high importance of MSEs for accelerating economic growth of the countries, lack of sources or access to finance, lacking assistance in identifying market and business opportunities, and lack of skill and technology are major constraints MSEs are facing. Arage (2025) has identified limited access to capital and technology, insufficient training opportunities, and inadequate working space as major challenges facing MSEs causing negative impact in their performance growth.

### **Performance Success Factors of MSEs**

Lemma and Kebede (2018) have identified internal and external factors to determine successful performances of MSEs as well as causing obstacles to performance improvement. Efficient utilization of available resources like skills, appropriate technology, and raw materials are internal factors lead to successful performance. Similarly, access to input supply and financial market, level of competitive rivalry, and local business environment are external factors that determine successful performance of MSEs. They have identified that inadequate borrowing assistance, shortage of raw materials, lack of skills; machinery; technology, inadequate marketing skills and linkage, lack of planning and implementation skills, lack of access to information, poor infrastructure, poor research skills for identifying market opportunities are obstacles of MSEs for their successful performance. Therefore, they have stated that if MSEs are supported regarding the challenges they face in these factors, their performance will certainly improve.

Arage (2025) has revealed Seven key performance factors significantly impact profitability of MSEs. Based on the identified challenges of MSEs, he has recommended to improve access to technology, market, credit, and adequate training including favorable policies for performance of MSEs. Based on the reviewed literature, a conceptual framework has been developed to lead this study.

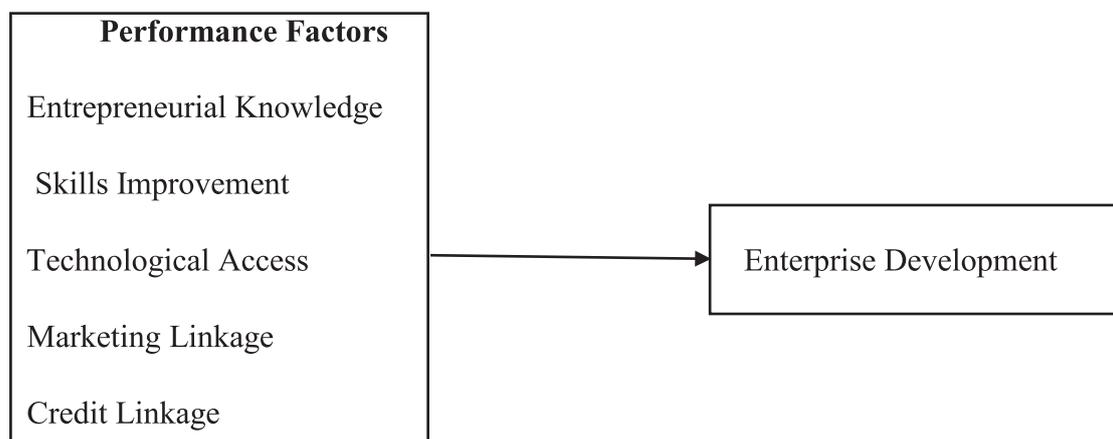


Figure 1: Conceptual Framework

*Note: Researcher's Construct, 2025*

## **Research Methodology**

### **Research Design**

This study applies a descriptive research design to analyze perceived opinion of micro-entrepreneurs on their performance factors as well as their enterprise development. This research has employs correlational research design to assess the relationship among performance factors and enterprise development. A Mixer of both quantitative and qualitative approaches is used in this study. A quantitative approach is used for measurement of quantitative data using statistical analysis whereas a qualitative approach is used with respect to deep insights in

the field observation and interviews.

### Study Area and Justification for Selection of Kavrepalanchok District

Kavrepalanchok district is situated in mid-hilly area covering 1396 square Kilo Meter of the land area at an elevation range of 280 – 3018 meters. According to census report 2021, Kavrepalanchok district has population of 364039. Among them, number of female populations is 185130 (50.9%) and 178909 (49.1%) is the number of male population (cbc.gov.np).

The study areas for this research are representing all 6 municipalities and 7 Village Palikas of the Kavrepalanchok district. They are divided into two proportionate strata for the sampling purpose. Kavre is very information oriented regarding implementation of the MED model. The service provider of the MED model has also continuously working since 2007 in the district covering all VDCs and Municipalities of Kavre during those years. So, the service provider is in touch with all the created micro-entrepreneurs making the researcher convenient to contact the sampled micro-entrepreneurs at field. Many municipalities and VDCs of the district are accessible to road and transport. The district is quite convenient for the researcher for field visits. These are the reasons behind selecting the Kavre as a sample district based on purposive sampling method.

### Micro-Entrepreneurs' Population and Sample

The MED model had developed total 2904 micro-entrepreneurs from 2007 to 2018 as shown in Table 1.

Table 1

Target Population of Micro-Entrepreneurs at Kavrepalanchok District

	Name of Local Level	No. of Created MEs
Municipalities	Dhulikhel	180
	Banepa	430
	Panauti	241
	Panchkhal	222
	Namobudhha	46
	Madan Deupur	267
	Total	1386
Village Palikas	Khanikhola	213
	Chaunri Deurali	456
	Temal	NA
	Bethanchok	372
	Bhumlu	223
	Mahabharat	86
	Roshi	168
Total	1518	
	Grand Total	2904

Yamane (1967:886 as cited by Israel; 1992, p. 4) has provided a simplified formula to calculate sample size assuming 95% confidence interval and  $P = 0.5$  which has also used by Adjei (2014) in a similar nature of population as follows.

$$\frac{N}{1+N(e^2)} = \frac{2904}{1+2904(.05^2)} = \frac{2904}{8.26} = 352$$

Where;

n = sample size

N = population size

e = level of precision or margin of error in sampling

## Performance Factors Contributing Enterprise

Israel (1992) has found that, sample size is often increased by '10%-30% to compensate for persons the researcher possibly be unable to contact' (p. 5). Due to this reason, he has further concluded that the number of mailed surveys or planned interviews can be substantially larger than the number required for the intended level of confidence and precision. Since the time horizon of the unit of analysis (micro-entrepreneurs) covered by this study was more than 12 years, only 75% response rate was expected due to possibilities like abroad employment, migration, and death of entrepreneurs. So, to meet the above calculated sample size, 469 micro-entrepreneurs i.e.  $(352/0.75)$  were sampled. Finally, it was possible to interview 435 micro-entrepreneurs at the field.

### Sampling and Data Collection Techniques

Pant (2012) has stated that simple random sampling is the purest form of probability sampling in which samples can be drawn by using a random number table or lottery method. While selecting micro-entrepreneurs, a simple random sampling technique was applied. The list of MEs created in Kavre was obtained. Then samples were selected using random numbers. The total population was divided into two strata and sample sizes were determined proportionately from each stratum as in Table 3.5.

Table 3

Population Strata and Sample Size

Strata	Population	Weightage	Sample Size
Municipality Areas	1386	0.48	225
Village Palikas	1518	0.52	244
Total	2904	1.00	469

Note: Researcher's construct, 2021

Among those who could not be interviewed, 14 persons could not be contacted, 13 were migrated and 7 were dead. For the collection of data, questionnaires were structured in Five Point Likert Scale. Collected data were analyzed using statistical software SPSS.

### Ethical Considerations

All the participants were well informed on the study purpose, assured for the confidentiality of their business information, and not participated forcefully in the study at any sense.

## Result and Discussion

Table 4

Descriptive Summary of Performance and Enterprise Development n=435

Variables	M	SD	Cronbach's $\alpha$
Entrepreneurial Knowledge (EK)	3.43	1.02	0.944
Skill Improvement (SI)	3.74	0.90	0.901
Technological Access (TA)	4.12	0.79	0.943
Credit Access (CA)	2.86	0.81	0.901
Market Linkage (ML)	3.02	1.05	0.866
Enterprise Development (ED)	3.26	1.37	0.953

Technological access performance has the highest mean value of 4.12. During the field visits micro-entrepreneurs (MEs) were provided woven machines, work-shop facilities, agricultural tools, tractors, Thanka painting brushes etc. Similarly, Interest of technical skills was already assessed during the selection and group formation. Therefore, MEs were found to have delivered skills of their own interest as well as need. Regarding marketing linkages, MEs were provided opportunities to participate in trade fairs, exhibitions, and link with local retail and wholesale trades. Similarly, many of them have been assisted in forming product associations.

Regarding Entrepreneurial knowledge, MEs expressed that they have gained knowledge on opportunity identification of profitable business with increased commitment to do business. They also knew techniques of business selection and customer identification. Regarding access to credit, many MEs were arranged the needed fund from their relatives, savings, and group savings. So, only few MEs with the need of large capital have linked with local co-operatives.

Regarding the enterprise development, the mean value 3.26 indicates that MEs opined that the performance supports from the MED model has helped them to a large extent. Therefore, to a large extent, they expressed that their sales is continuously increasing, they are re-investing part of their profit in business, they are also able to employ more employee in some extent and are able to diversify portfolios or add varieties of products.

### **Correlational Relationship Among Performance Variables and Enterprise Development**

Correlation analysis result is presented in Table 5 below showing the associations among performance variables as independent variables and enterprise development as dependent variable.

Table 5

Correlation among Performance Variables and Enterprise Development

	EK	SI	TA	ML	AC	ED
EK	1					
SI	.893	1				
TA	.799	.816	1			
ML	.728	.681	.593	1		
AC	.825	.798	.778	.573	1	
ED	.906	.871	.720	.742	.801	1

The correlation analysis result shows that there are significant positive relationships among all the performance variables and enterprise development. It means, all the performance variables influence the enterprise development significantly. Therefore, the components of the MED model help performance improvement in various categories for assisting enterprise development.

These findings are also matched with the results of Arage (2025). He has also identified that performance factors like training, access to finance, access to technology, entrepreneurial education, and market linkages have played a vital role for enterprise development of MSEs.

### **Discussions**

The supports under the MED model are designed according to the need of micro-entrepreneurs. The effects of such supports have helped MEs to improve their performance regarding entrepreneurial opportunity identification and commitment towards doing business. Similarly, it has helped them improve skills of their area of knowledge, ability, and interest. MEs are helped to obtain technological grants needed to operate their business. Their products are supported to have access to market through various means. Overall, such supports have helped them to develop their enterprise.

### **Conclusion**

Micro-enterprises are productive by utilizing local skills, raw-materials, and appropriate technology. They help in generating employment and self-employment. They also help in reducing imports and make the economy more sustainable. Such utilities of MEs have attracted government of various countries to facilitate and incentivize them for their promotion. With the similar reason, Government of Nepal also launched the MED program since 1998 to promote micro-enterprises for poverty alleviation. The program continuously extended in all 75 districts of Nepal till the year 2018. Now the MoI is extensively extending this model to all the 753 local levels. Therefore, it should be conscious on maintaining the effectiveness of this model. Massive extension of this model to all local levels

is a very ambitious job. Therefore, there is a chance of deterioration of the past success of this model. The ever changing socio-cultural, demographic, and political environmental adaptation is also a challenge to maintain the success of this model.

### **Implications and Scope for Future Research**

Based on the finding of the significant impact of the MED model on the performance improvement of MEs, government can replicate this model in its other employment and income generation programs. Because, the importance of promoting MSEs is widely accepted and practiced around the developed and developing nations due to their role in economic development. The other NGOs and private sector's skill and entrepreneurship development programs should also focus on utilizing the effectiveness of this model by replicating the procedures and design in their curricula.

The finding of this research is based on the survey of one district only. Therefore, the similar study can be undertaken in other districts also since there is still dearth of study in this topic in Nepal. Other research can focus on service providers, policy interventions, and other institutional structures too rather than focusing on the beneficiaries. Some researchers can focus on the appearing changes in socio-cultural and political sectors and advise on the possible changes in the process and design of the MED model itself.

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# Social Media and Customers Purchasing Decision

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## Abstract

*Business advertisement in social media has risen these days. The main objective of this research is to analyze the effect of social media in purchasing decision making of customer. The survey was conducted to study the social media impact among different age group around the Kathmandu valley. This survey focused on various factors that are considered by the customer while making purchase from any social media. The findings of this research are the impact of social media marketing in different age group of male and female. Although it is usually perceived that the price, return policy, cash on delivery, cash back warranty, business reputation and trust are the influencing factor for making purchase from social media which also varies among different age groups. Another is the online purchasing has significant relation with the genders of customer. It has been found that there is a significant difference in male and female for the use of social media platform but that was insignificant for taking attention on the advertisement on social media.*

**Keywords:** Social Media, Purchase, Decision, Influence, Marketing.

**JEL Classification:** M31, M37, D12, L31, O33

## Introduction

In today's interconnected world, social media has become an integral part of our daily lives, transforming the way we communicate, interact, and consume information (Kaplan & Haenlein, 2010). With millions of active users across various platforms, social media has emerged as a dynamic and influential medium that has revolutionized the business landscape. In this context, understanding the impact of social media on customers' purchasing decisions has become paramount for businesses seeking to thrive in the digital era.

Over the past decade, social media has transcended its initial purpose of connecting people and has evolved into a powerful marketing tool. It has revolutionized the way consumers discover, evaluate, and decide on their purchases (Mangold & Faulds, 2009). The pervasive nature of social media platforms enables individuals to seek and exchange opinions, experiences, and recommendations, which profoundly impact their purchasing decisions. From product reviews and influencers' endorsements to personalized advertisements and social proof, social media channels offer a wealth of information that consumers actively seek and consider during their decision-making process.

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Understanding the impact of social media on customers' purchasing decisions has become paramount for businesses seeking to thrive in the digital era.

This research paper aims to excavate into the intricate relationship between social media and customers' purchasing decisions, exploring the mechanisms through which social media platforms influence consumers' behavior and shape their buying choices. By unraveling the underlying psychological, sociological, and marketing dynamics at play, we seek to provide valuable insights into how businesses can leverage social media to enhance their marketing strategies, engage customers effectively, and drive sales growth.

To achieve the purpose of this study, several objectives will be pursued. This research aims to present a comprehensive analysis of the mechanisms through which social media influences consumer behavior, highlighting both the positive and negative aspects of this digital influence. To achieve the purpose of this study, several objectives will be pursued. The objective of the project can be summarized as:

- To present the mechanisms through which social media influences consumer behavior, highlighting both the positive and negative aspects of this digital influence.
- To explore the different types of social media content which impact on customers' purchasing decisions.
- To investigate the customers inclination towards particular types of goods.

To comprehensively analyze the influence of social media on customers' purchasing decisions, this research paper will adopt a multidimensional approach. We will examine relevant theories and frameworks from fields to provide a comprehensive understanding of the factors at play. We will present a robust analysis of the mechanisms through which social media influences consumer behavior, highlighting both the positive and negative aspects of this digital influence.

The research encompasses following limitations:

- Only primary data are used in this study
- Opinions of respondents have been taken for research as a sense of truth which may not be correct.
- The research is based on the sample size of 130 and a smaller number of sample and population size may not result in accuracy.
- This study is solely based on population of Kathmandu valley. The perspective regarding customer purchase decision may differ from place to place.

### **Literature Review**

The Digital Marketing includes social media. Felix et al., (2017) defined the social media marketing as the use of social media platforms and websites to promote a product or service.

Rungta, (2016) explained it as a part of internet marketing. It is a platform that can be used by anyone who has as internet connection. Social media marketing can be easily characterized as a term used to portray the act of increasing website traffic or brand awareness, using social media networking sites.

Rungta, (2016) the students of Christ University in India had wrote in International Journal of Novel Research in marketing management and economics. They mentioned that the internet marketing is a subset of digital marketing. The internet marketing involves all of the followings: Social Media Marketing, E-mail Marketing, Website Marketing, Search Engine Optimization, Pay Per Click, Web Banners, Digital Online Advertising, Online Marketing platform, Mobile Marketing, Content Marketing.

Similarly, Shaikh, (2012) has made a study on "A Critical Analysis of Consumer buying behavior of two wheelers, keeping major objective to provide an insight of the two- wheeler consumer preference. He has concluded that Hero Motor Corp. and Honda Motorcycles and Scooters India Pvt. Ltd. are the most preferred manufacturers. The sales are strongly correlated with age group and gender of consumers whereas income level has nothing to do with purchase decision of customers.

Aaker & Keller, (1990) have conducted a study on consumer evaluations of brand extensions. The study believes that loyalty is closely associated with various factors, one of the main ones being the experience of use. Customers may be loyal owing to high switching barriers related to technical, economical or psychological factors, which

make it costly or difficult for the customer to change. In another point of view, customers may also be loyal because they are satisfied with the brand, and thus want to continue the relationship.

Schiffman & Kanuk, (2009) described consumer behavior as “the behavior that consumers display in searching for, purchasing, using, evaluating, and disposing of products and services that they expect will satisfy their needs.” Solomon et al., (2002) said “the Consumer behavior is the study of the process involved when individuals or groups select, purchase, use or dispose of products, services, ideas or experiences to satisfy needs and desires.” The official definition of consumer behavior stated by (Kuester, 2012) is the study of individuals, groups, or organizations and the processes they use to select, secure, use, and dispose of products, services, experiences, or ideas to satisfy their needs and wants.

Sareerat, (2003) mentioned about Consumer Behavior’s Model is the reason which crates buyer’s Purchase Decision follows the Black Box Model or usually known as S\_R Theory. The beginning of this model starting from stimulus effects the needs and wants then the respond happens.

### Research Methodology

Research design is the planned specification of methods and procedures for acquiring the information needed to structure to solve the problem. To address research objectives descriptive research design is selected. Data collection contains primary data which is collected through self-administered questionnaire. Collected data are presented in a bar diagram, charts and tables and analyzed using quantitative data analysis. Descriptive statistic is used. The methodological framework has been presented in Figure 1.

People who use social media on daily basis were considered as the study population. Sample was grouped under various categories as per their respective age. The research was conducted through primary research which includes obtaining primary data by conducting field research. The data were collected directly via questionnaire that was administered online throughout June 2024. A convenience sampling technique was applied as a sampling technique that implies non-probability sampling.

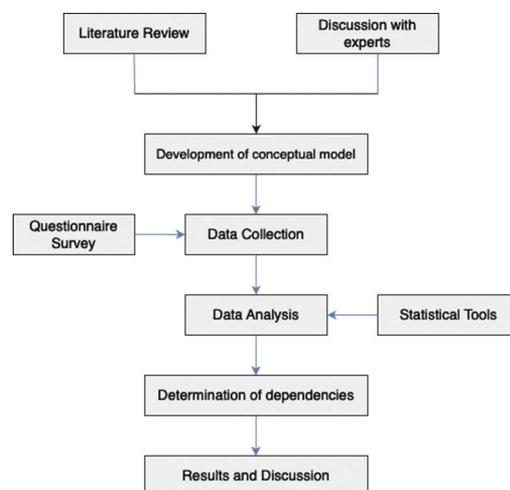


Figure 1 Methodological Framework

### Nature and Sources of Data

Primary source of data is used to conduct the research study. Under primary source, self-administered questionnaire is distributed to the women respondents. Basically, primary data is used to collect the relevant information for analyzing the brand preference of women consumers.

### Sampling Method

A sample is collection of information from the population. For this study convenience sampling method was used.

The data collected were filtered and organized. The organized data were subjected to various statistical tools to generate information. A descriptive analysis was performed to obtain information on how gender, age, time spent on social media per day, the social media used affected consumers purchasing decision on various categories of products.

### **Data Collection Procedure**

This research is based on primary data which was collected with the help of structured questionnaire. It contains the rigid set of questions and respondents were asked to answer the question. Data were collected using a survey questionnaire containing: Respondents' personal information, Simple category scale, and Multiple choices. The research was conducted through survey that included fifteen questions related to social media and the customer purchase decision. Since the sampling frame cannot be drawn, non-probability sampling was used.

### **Data Presentation Technique**

This includes the tools used for analysis of the data collected. After the data are properly collected and presented, data analysis is conducted. Simple statistical tool is used. They are: Pie- chart, Bar- diagram, Tables

### **Analytical Tools**

Data are analyzed by using quantitative research measures. Descriptive statistic is used for addressing first research objectives. Similarly, collected data are presented in tabular form. To make report simple and easily understandable, charts and diagram is used. Chi-square test was conducted to test difference in opinion for the gender and age group. The appropriate data is converted into tabular and graphical form with the help of MS Excel and SPSSv26.

### **Result and Discussion**

In this research, questionnaire was developed and distributed to collect the information. All the respondents were inquired in advance about their interest in participation in the survey at the time of data collection. The response received from the participant have been arranged, tabulated, and analyzed in order to facilitate the descriptive analysis of the study. Sample was selected from the young generation which are supposed to be actively engaging in online purchasing. Around 84.6 percent (110 out of 130) are young participant of age 20 to 30 year.

Table 1

Gender of Participants in Survey

Gender	No. of Participants	Percentage
Male	77	59.2
Female	53	40.8
Prefer not to say	0	0

Among the 130 participants in this research the gender ratio was female: male = 1:1.453, i.e., total of 53 female and 77 males Figure 2 have filled the survey form completely.

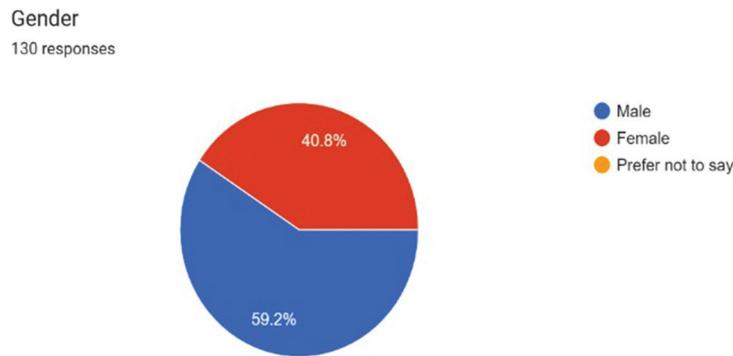


Figure 2 Gender Distribution of Participants

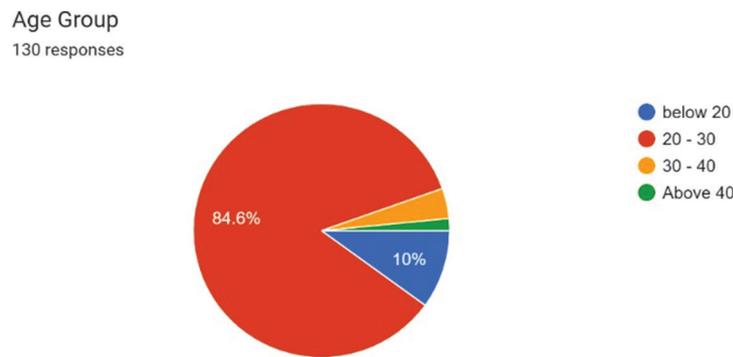


Figure 3 Age Group Distribution of Participants

Five participant of age group 30–40-year, two participant of older age group i.e., above 40 and 13 participants of too younger group i.e., below 20 are recorded in this study as in Figure 3. The purchasing behavior with respect to gender was presented in Figure 2.

88.68% of female out of female participants are purchasing product from the influence of social media whereas only 68.83 percent of male participant are purchasing with the influence of social media.

Table 2

Purchasing with respect to gender

Gender	Total	Purchasing Numbers		Purchasing %	
		Yes	No	Yes	No
Female	53	47	6	88.68%	11.32%
Male	77	53	24	68.83%	31.17%

Participant behavior toward the use to social media was first collected and analyzed. The young generation are highly active in social media from the Covid-19 was shown in Figure 4. More than 66 percent participant uses the social media more than two hours and are highly conscious toward the online shopping.

How many hour a day, on average, do you spend on social media?  
130 responses

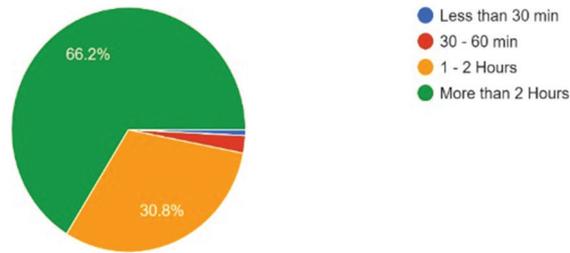


Figure 4 Social Media Engagement of Participants

More uses of social media increase the purchasing possibilities. It is expected to influence participants purchase decision as long as they use social media.

Out of 130, 86 participants use social media more than two hours whereas 40 participants i.e., more than 30.8 percent are spending 1-2 hours of time in social media per day.

When people are highly engaging in the social media, ads that catch the attention of customer will increase the possibilities of purchasing.

Table 3

Social Media Attention by participants

Attention to Ads on social media	No. of Participants	Percentage
Yes	80	61.5%
No	50	38.5%

The quality of the product purchased and delivered seems varying may cause such problem. 80 people out of 130 are giving attention (Table 3) to the ads in social media which are most influential customer to any business.

While in scaling of social medial effect on customers purchasing decision 30 participant are with low affect and higher respondent 76 are with medium. Some participants are highly affected by such social media ads which is in Table 4.

Table 4

How Much Social Media affect buying decision

How much Social Media affect buying Decision	No. of Participants	Percentage
Low	30	23.1 %
Medium	76	58.5%
High	17	13.1 %
Very High	7	5.4 %

Have you ever made an online purchase as a result of an advertisement that appeared on your Social media ?  
130 responses

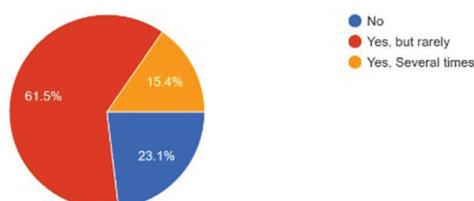


Figure 5 Participants Online Purchase Status

Almost 100 participants out of 130 are making some purchase from the social media platform. People are aware of reading product reviews, comments and product analysis before buying that product. 92 participants read such comments, reviews of the product before buying. Only 2.3% of studied sample is found to ignore such reviews and comment. This is very effective way to reduce fraud of duplicate items to be delivered by knowing the product review from the user of the same products.

To find out the number of customers buying items from social media, data analysis was carried out. There are many factors other than discussed above which directly affect the purchasing decision of the buyer.

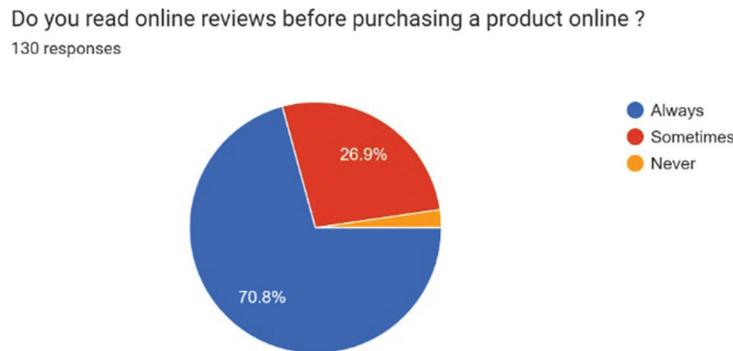


Figure 6 Participant Behavior to Read Online Reviews

All such possible factors are listed in Figure 7 and the reaction of participants regarding those factors. Price of the products has affected 96 participants out of 130 and satisfaction, trust toward the company or products, return policy and cash on delivery are following factors. 35 and 25 participants aligned with cash on delivery and cash back warranty factors as an important factor for online purchasing decision making.

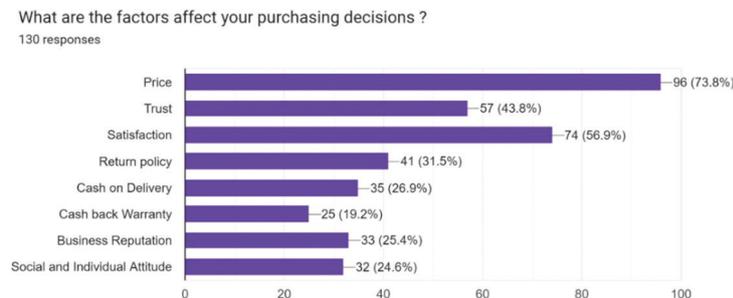


Figure 7 Highly Influencing Factors for Purchase Decision

### Chi-Square Test

The frequency was measured with respect to the gender and age-group for all the above-mentioned scenarios. The test aim to identify the relation of such factors with the gender of customer with 5% level of significance.

The calculated value was compared with the values obtained from the table for given level of significance and degree of freedom. The null hypothesis was accepted if the calculated value < tabulated value and rejected if the calculated value > tabulated value.

Table 5

Chi-Square Test for Time Spending in Social Media to Gender and Age Group for Online Shopping

Chi-Square Test for Time Spending in Social Media to Gender and Age Group for Online Shopping								
Time Spending in Social Media	Gender			Age Group				
	Male	Female	Total	Below 20	20-30	30-40	Above 40	Total
Less than 30 minute	1	0	1	0	1	0	0	1
30 - 60 minute	0	1	1	0	1	0	0	1
1 - 2 hours	16	19	35	3	29	2	0	34
More than 2 hours	36	28	64	9	53	2	1	65
Total	53	48	101	12	84	4	1	101
Calculation of Expected Values:								
Time Spending in Social Media	Gender			Age Group				
	Male	Female	Total	Below 20	20-30	30-40	Above 40	Total
Less than 30 minute	0.5248	0.4752	1.0000	0.1188	0.8317	0.0396	0.0099	1.0000
30 - 60 minute	0.5248	0.4752	1.0000	0.1188	0.8317	0.0396	0.0099	1.0000
1 - 2 hours	18.366	16.633	35.0000	4.0396	28.2772	1.3465	0.3366	34.0000
More than 2 hours	33.584	30.415	64.0000	7.7228	54.0594	2.5743	0.6436	65.0000
Total	53.00	48.000	101.0000	12.0000	84.0000	4.0000	1.0000	101.0000
Calculation of Chi-Square:								
Time Spending in Social Media	Gender			Age Group				
	Male	Female	Total	Below 20	20-30	30-40	Above 40	Total
Less than 30 minute	0.4304	0.4752	0.9057	0.1188	0.0341	0.0396	0.0099	0.2024
30 - 60 minute	0.5248	0.5794	1.1042	0.1188	0.0341	0.0396	0.0099	0.2024
1 - 2 hours	0.3049	0.3366	0.6415	0.2675	0.0185	0.3171	0.3366	0.9398
More than 2 hours	0.1738	0.1919	0.3657	0.2112	0.0208	0.1281	0.1974	0.5575
Total	1.4338	1.5832	3.0170	0.7164	0.1074	0.5244	0.5538	1.9020
Chi-Square Value (Calculated) =	3.0170			Chi-Square Value (Calculated) =				1.9020
Level of Significance =	0.05			Level of Significance =				0.05
Degree of Freedom =	3			Degree of Freedom =				9
Chi-Square Value (Table) =	7.815			Chi-Square Value (Table) =				16.919
Interpretation: Since $\chi^2$ (calculated) = 3.0170 < $\chi^2$ (tabulated) = 7.815. Hence, we conclude that there is no significant relation between gender and time spending in social media				Interpretation: Since $\chi^2$ (calculated) = 1.9020 < $\chi^2$ (tabulated) = 16.919. Hence, we conclude that there is no significant relation between age group and time spending in social media				

Test concluded that the there is no any significant relation between time spending on social media for Male, Female or with the various age group peoples as in Table 5. The result will be in support to the profit maximizing business firm to target all the age group people of any gender from social media marketing.

Table 6

Chi-Square Test for Attention to Advertisement on social media to Gender and Age Group for Online Shopping C

Chi-Square Test for Attention to Advertisement on social media to Gender and Age Group for Online Shopping								
Attention on Social Media Ads	Gender			Age Group				
	Male	Female	Total	Below 20	20-30	30-40	Above 40	Total
Yes	36	32	68	8	55	4	1	68
No	17	15	32	3	29	0	0	32
Total	53	47	100	11	84	4	1	100
Calculation of Expected Values:								
Attention on Social Media Ads	Gender			Age Group				
	Male	Female	Total	Below 20	20-30	30-40	Above 40	Total
Yes	36.0400	31.9600	68	7.4800	57.1200	2.7200	0.6800	68
No	16.9600	15.0400	32	3.5200	26.8800	1.2800	0.3200	32
Total	53	47	100	11	84	4	1	100
Calculation of Chi-Square:								
Attention on Social Media Ads	Gender			Age Group				
	Male	Female	Total	Below 20	20-30	30-40	Above 40	
Yes	0.0000	0.0001	0.000					
1	0.0361	0.0787	0.6024	0.1506	0.8678			
No	0.0001	0.0001	0.000					
2	0.0768	0.1672	1.2800	0.3200	1.8440			
Total	0.000138	0.00015	0.000	0.11296	0.24588	1.88235	0.47058	2.711794
Chi-Square Value (Calculated) =	0.0002951			Chi-Square Value (Calculated) =			2.71179494	
Level of Significance =	0.05			Level of Significance =			0.05	
Degree of Freedom =	1			Degree of Freedom =			3	
Chi-Square Value (Table) =	3.841			Chi-Square Value (Table) =			7.815	
Interpretation: Since $\chi^2$ (calculated) = 0.00029518 < $\chi^2$ (tabulated) = 3.841 Hence, we conclude that there is no significant relation between gender and attention on social media ads.				Interpretation: Since $\chi^2$ (calculated) = 2.71178 < $\chi^2$ (tabulated) = 7.815, Hence, we conclude that there is no significant relation between age group and attention on social media ads.				

Test concluded that the there is no any significant relation between gender, age group and attention on social media ads as in Table 6.

Table 7

Chi-Square Test for Social Media Platform used for Online Purchase to Gender and Age Group for Online Shopping

Chi-Square Test for Social Media Platform used for Online Purchase to Gender and Age Group for Online Shopping

Social Media Platform used for Online Purchase	Gender			Age Group				
	Male	Female	Total	Below 20	20-30	30-40	Above 40	Total
Facebook	44	18	62	11	49	3	0	63
Instagram	39	34	73	8	61	2	1	72
Tiktok	16	25	41	5	32	4	0	41
Total	99	77	176	24	142	9	1	176

Calculation of Expected Values:

Social Media Platform used for Online Purchase	Gender			Age Group				
	Male	Female	Total	Below 20	20-30	30-40	Above 40	Total
Facebook	34.8750	27.1250	62	8.5909	50.8295	3.2216	0.3580	63
Instagram	41.0625	31.9375	73	9.8182	58.0909	3.6818	0.4091	72
Tiktok	23.0625	17.9375	41	5.5909	33.0795	2.0966	0.2330	41
Total	99	77	176	24	142	9	1	176

Calculation of Chi- Square:

Social Media Platform used for Online Purchase	Gender			Age Group				
	Male	Female	Total	Below 20	20-30	30-40	Above 40	Total
Facebook	2.3875	3.0697	5.457	0.6756	0.0659	0.0152	0.3580	1.114613
Instagram	0.1036	0.1332	0.236	0.3367	0.1457	0.7682	0.8535	2.104155
Tiktok	2.1628	2.7807	4.943	0.0625	0.0352	1.7280	0.2330	2.058666
Total	4.653911	5.983	10.63	1.07471	0.2467651	2.5115068	1.4444444	5.277435

Chi-Square Value 10.637512 Chi-Square Value (Calculated) 5.277435

(Calculated) = 45 = 768

Level of Significance = 0.05 Level of Significance = 0.05

Degree of Freedom = 2 Degree of Freedom = 6

Chi-Square Value (Table) = 5.991 Chi-Square Value (Table) = 12.592

Interpretation: Since  $\chi^2$  (calculated)

= 10.63 >  $\chi^2$  (tabulated) = 5.991

Hence, we conclude that there is significant relation between gender and social media platform used for online purchase.

Interpretation: Since  $\chi^2$  (calculated) =

5.27 <  $\chi^2$  (tabulated) = 12.592, Hence,

we conclude that there is no significant relation between age-group and social media platform used for online purchase.

Different social media platform like Facebook, Instagram, Tiktok are highly influencing in the purchasing decision of customer. The finding shows that the significant difference between male and female for the use of social media platform. The inclination of females towards Instagram is found higher than that of male. But there is no significant relation between the age groups for the use of social media. Also found that the significant relation between gender for the purchase online as in Table 7 and Table 8.

Table 8

Chi-Square Test for Purchase to Gender and Age Group for Online Shopping

Chi-Square Test for Purchase to Gender and Age Group for Online Shopping									
Purchase	Gender			Age Group					
	Male	Female	Total	Below 20	20-30	30-40	Above 40	Total	
No	24	6	30	2	26	1	1	30	
Yes, but Rarely	46	34	80	10	68	1	1	80	
Yes, Several Times	7	13	20	1	16	3	0	20	
Total	77	53	130	13	110	5	2	130	
Calculation of Expected Values:									
Purchase	Gender			Age Group					
	Male	Female	Total	Below 20	20-30	30-40	Above 40	Total	
No	17.7692	12.2308	30	3.0000	25.384	1.1538	0.4615	30	
Yes, but Rarely	47.3846	32.6154	80	8.0000	67.692	3.0769	1.2308	80	
Yes, Several Times	11.8462	8.1538	20	2.0000	16.923	0.7692	0.3077	20	
Total	77	53	130	13	110	5	2	130	
Calculation of Chi-Square:									
Purchase	Gender			Age Group					
	Male	Female	Total	Below 20	20-30	30-40	Above 40	Total	
No	2.1848	3.1742	5.35898	0.3333	0.0149	0.0205	0.6282	0.9969696	
Yes, but Rarely	0.0405	0.0588	0.09924	0.5000	0.0014	1.4019	0.0433	1.9465909	
Yes, Several Times	1.9825	2.8803	4.86277	0.5000	0.0503	6.4692	0.3077	7.3272727	
Total	4.2077	6.1132	10.320	1.3333	0.0666	7.8916	0.97916	10.2708	
Chi-Square Value	10.320999			Chi-Square Value					10.270833
(Calculated) =	75			(Calculated) =					33
Level of Significance =	0.05			Level of Significance =					0.05
Degree of Freedom =	2			Degree of Freedom =					6
Chi-Square Value	5.991			Chi-Square Value (Table) =					12.592
(Table) =	5.991			Chi-Square Value (Table) =					12.592
Interpretation: Since $\chi^2$ (calculated)	= 10.32 > $\chi^2$ (tabulated) = 5.991,			Interpretation: Since $\chi^2$ (calculated)					= 10.27 < $\chi^2$ (tabulated) = 12.592,
Hence, we conclude that there is significant relation between gender and purchase.				Hence, we conclude that there is no significant relation between age-group and purchase.					

The major findings of this research are summarized as below:

- 93 out of total 130 participants agrees that the social media has influence on their buying behavior, and are being attentive and highly influenced by the advertisement. Business company can use attractive offers to such customer in social media to increase market share.
- 76 out of total 130 participant rate medium to the social media affect their buying behavior and only 30 out of total 130 rate low to the social media in their purchasing decision.
- 52.3% of total 30 participants do not think that the celebrity endorsements play a big part in influencing their online purchasing decision and 62 out of total 130 participant has accepted that celebrity endorsements affect purchasing decision.
- The questionnaire survey finds that Instagram is widely used for online purchasing, the advertisement in Instagram are highly influential on customers online purchasing decision. However, Facebook and TikTok has also influence the customers purchasing decision.
- Price is most influencing factor for online shopping and satisfaction from such product, their return policy,

cash on delivery, cash back warranty business reputation i.e., brand and social and individual behavior also affects customers purchasing decision.

- There is no significant relation between gender and time spending in social media and age-group and time spending in social media.
- There is no significant relation between gender and time spending in social media and age-group and attention on social media ads.
- There is significant relation between gender and purchase. However, no significant relationship between age- group and purchase was found.
- There is significant relation between gender and social media platform used for online purchase. However, there is no significant relationship between age-group and social media platform used for purchase.

As we went through the survey, we could find out various data related to social media engagement from the different age group, gender consumers. Most of the women consumer are purchasing the product from influence of advertisement on social media than male. And also, highest number of respondents are influence by advertisement on Instagram. Price is the first priority of respondents while choosing any products. Largest number of respondents feels price is most important factors for them while making purchase decision. This research leads to several other findings such as many consumers' decision is impact by the return policy, cash on delivery, cash back warranty, trust, satisfaction, business reputation etc. the reviews of the product, comments on the post of products are influencing factor for customer to make purchasing decision. Largest number of respondents agrees that social media influences the customers purchasing behavior and lower number of consumers get influence by the endorsement of celebrity in advertising. Highest numbers of consumers are following the brand of company on social media.

### Conclusion

The study focuses on the analysis of social media on consumers purchasing decision. Hence the relevant factors are identified. The primary objective of this research is to find the social media influence on participants behavior. The research comprises of all age group male and female respondents. According to survey people of all the age group used to social media which contains below 20yrs (10%), between 20-30yrs (84.6%), between 30-40yrs (3.8%) and above 40yrs (1.5%). In this survey male respondents are higher who uses social media where 68% are purchasing any product from social media influence.

The study also concludes that there is a significant relation with gender and the online purchasing where females are highly active in purchasing by the influence of advertisement of social media. It also shows that more respondents using Instagram than Facebook and Tiktok comes, which direct relation with their purchasing channel. In this survey we can find that people decision of purchasing is impact by the product price, trust, satisfaction, return policy, cash on delivery, cash back warranty, business reputation etc. It was found that there is significant relation between gender and purchase. However, no significant relationship between age-group and purchase was found. On the basis of the findings of the study, the following action implications are made for increasing social media advertisement for influencing customers purchasing decision.

- This study helps the marketer to understand the factors that influence the customer purchasing behavior and help marketers to make specific profile of the specific consumer.
- This study helps the marketer or business firm in understanding consumers perception which helps in adopting relevant marketing strategy to attract the consumers on social media
- This study helps as a guideline for the researcher for conducting future research by providing concrete path.

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# The Efficacy of Microfinance Programs in Enhancing Income, Education, and Health for Poverty Reduction in Rural Nepal

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## Abstract

*Purpose-* The purpose of the study is to analyze the impact of microfinance on improving living standard of rural people. Microcredit, microsaving, training and awareness are independent variables and poverty reduction measurement such as income, education and health are dependent variables for the study.

*Design/methodology/approach-* A descriptive research design has used and purposive sampling technique has carried out to collect necessary data from the respondents through a structured questionnaire which was distributed people who has been actively involved in Global IME microfinance Ltd. and Sadhana microfinance Ltd at Charaudi, Dhading. Total 140 questionnaires were distributed to the peoples of Charaudi but only 120 useable responses were collected and analyzed. The descriptive statistics, frequency and percentage analysis has been used. Further correlation and multiple regressions were conducted to examine the relationship between dependent and independent variable.

*Findings-* The study finds micro-credit, micro-saving, training and awareness have significant positive effect on improving income level, education level and health status of the respondents.

*Practical implications-* The study has implications for regulators, policy makers and practitioners in formulating policy decisions. Considering the instrumental role of microfinance for the improvement of socio-economic status of women, government can take additional initiative towards microfinance programs targeting to the hardcore poor people where microfinance could not make an effective outreach yet.

*Original/Value-* Few studies have addressed the interplay of microfinance on poverty alleviation in Nepali context

**Keywords:** Poverty alleviation, micro saving, micro credit, training and awareness

## General background

Microfinance Institutions (MFIs) play a pivotal role in enhancing the living standards of low-income populations, particularly in regions underserved by traditional banking systems. These institutions serve as essential mechanisms for poverty alleviation by facilitating access to financial services such as credit,

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savings, training, and awareness programs. Such services have proven to be instrumental in improving income levels, educational attainment, and health outcomes, thereby fostering socio-economic development and reducing gender disparities.

This study is situated within this broader context and seeks to examine the extent to which microfinance initiatives have influenced the livelihoods of rural populations in the Charaudi region of Dhading, Nepal. Existing literature (e.g., Hirway, 2018) underscores the relationship between access to financial services and empowerment outcomes, particularly among women, who are often disproportionately burdened with unpaid labor and excluded from formal economic systems. Microfinance, as a comprehensive development tool, aims to mitigate these inequalities by promoting self-reliance and social inclusion.

Globally, poverty remains a central concern of development policy. In developing nations such as Pakistan and Nepal, poverty is multidimensional, manifesting in limited access to quality healthcare, education, clean water, and secure living environments (Nizami & Hizam, 2023). In this regard, microfinance has emerged as a viable strategy for poverty reduction. It enables economically marginalized households to access financial services that empower them to engage in productive economic activities (Arshad et al., 2018; Tasos et al., 2020).

Historically, the modern microfinance movement began in 1976 with the establishment of the Grameen Bank by Muhammad Yunus in Bangladesh. This model introduced collateral-free lending and group-based repayment structures to mitigate credit risk and enhance repayment rates among low-income borrowers. Targeting especially vulnerable groups such as women, this approach has since been replicated globally with notable success (Mohammad & Mohammed, 2007).

Recent studies further confirm the positive impact of microfinance on poverty reduction (Raza, 2022; Shabnam, 2023). Access to credit and related financial services has been shown to significantly improve the socio-economic conditions of poor households, provided such resources are utilized effectively and complemented by capacity-building initiatives. Nonetheless, challenges persist, particularly in terms of ensuring equitable outreach, addressing gender disparities, and strengthening institutional capacities.

In the context of Nepal, microfinance has been supported by a broad range of stakeholders including Rural Development Banks, cooperatives, international non-governmental organizations, and donor agencies such as the Asian Development Bank (ADB), UNDP, and the International Fund for Agricultural Development (IFAD). In addition to these formal institutions, informal financial networks such as Dhikuti groups, user associations, and local moneylenders also play a significant role in facilitating access to finance for low-income populations.

The agricultural sector, which employs approximately 60% of Nepal's population, remains critical to the country's development trajectory. As such, there is an urgent need for policy interventions that promote small-scale investments, rural entrepreneurship, and inclusive financial services to elevate the living standards of farming communities and other low-income groups. The Government of Nepal has recently introduced policies aimed at strengthening the microfinance industry as a strategy for inclusive growth and rural development.

Furthermore, training and capacity-building initiatives are essential for the effective operation and expansion of microenterprises (Ondoro, 2012). Entrepreneurial training enhances business management skills and supports the adoption of new technologies, which in turn contributes to the sustainability of microfinance-supported ventures. Despite the proliferation of microfinance programs in regions such as Charaudi, Dhading, the critical question remains not merely about the quantity of such programs, but rather their actual impact on poverty reduction and livelihood improvement. This study aims to evaluate the effectiveness of microfinance services in addressing the multi-faceted nature of poverty and promoting sustainable development among rural populations in Nepal.

## **Literature review**

Poverty alleviation programs across developing countries increasingly incorporate credit components as key strategies for improving the socio-economic conditions of the poor. Microfinance, in particular, has been extensively promoted as a tool for reducing poverty and fostering empowerment. It is widely argued that access to microfinance services contributes to increased household income, which in turn enhances food security, enables asset accumulation, and increases the likelihood of investing in children's education. Furthermore, microfinance

fosters self-reliance and empowerment by enabling the poor to engage in income-generating activities, develop entrepreneurial skills, and reduce their vulnerability to external shocks (Grades, 2007).

However, empirical findings on the effectiveness of microfinance remain mixed. While some studies present compelling evidence of positive socio-economic impacts, others raise concerns regarding the long-term sustainability and depth of these effects. For instance, Ghalib (2007) critiques the microfinance model for potentially entrapping beneficiaries in a persistent debt cycle, arguing that small loans may not be sufficient to lift individuals out of poverty sustainably. This concern is echoed by Ghatak (1999), who found that many poor households tend to use microcredit primarily for consumption rather than productive investment, thereby limiting the transformative potential of such interventions.

Contrastingly, Reddy's findings emphasize the positive development outcomes of microfinance, noting that increased household income is often accompanied by greater awareness among beneficiaries, improved health and education outcomes, and enhanced social inclusion. This aligns with the broader development discourse that highlights the multifaceted benefits of financial inclusion when complemented by training, education, and health awareness.

Savings facilities, an integral component of microfinance services, have also been recognized for their developmental impact. According to Coleman (2002), access to structured saving mechanisms influences household decision-making, encouraging more disciplined financial behavior and enabling investment in productive activities. These facilities provide a safety net and foster financial resilience among low-income households.

In the context of Pakistan, poverty remains a multidimensional challenge, exacerbated by limited access to healthcare, education, clean water, and secure living environments. As noted by Nizami and Hizam (2023), poverty in Pakistan is complex and deeply rooted in structural inequalities. Within this context, microfinance has emerged as a critical instrument for promoting financial inclusion and mitigating socio-economic disparities. Arshad et al. (2018) and Tasos et al. (2020) emphasize that microfinance arrangements provide essential financial services to low-income households that are traditionally excluded from formal banking systems. These services include microcredit, microsavings, insurance, and payment facilities, all aimed at supporting income-generating activities and enhancing overall well-being.

Despite the growing popularity of microfinance, ongoing debates persist regarding its actual impact on poverty reduction and social empowerment. While many studies acknowledge its potential to foster economic independence and improve living standards, others call for more nuanced evaluations that consider the context-specific challenges and unintended consequences of microfinance initiatives. Overall, the literature suggests that the success of microfinance as a poverty alleviation tool depends on several factors, including the design of financial products, the provision of complementary services such as training and awareness programs, and the socio-economic conditions of the target population.

### Conceptual Framework

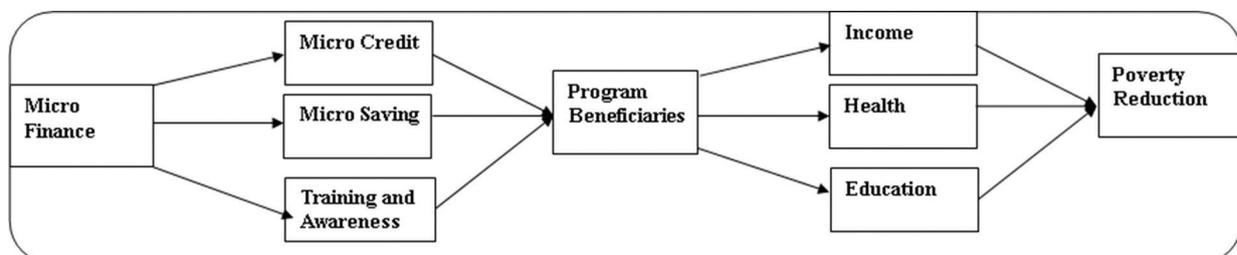


Figure1: Conceptual Framework

### Definition of Independent and Dependent Variables:

#### *Independent Variables*

##### *Micro-credit*

Micro-credit refers to the extension of small loans (microloans) to impoverished borrowers who typically lack

access to traditional banking services due to the absence of collateral. It is a core component of microfinance and plays a crucial role in empowering low-income individuals, particularly in developing countries. Micro-credit enables poor individuals to engage in self-employment and income-generating activities, thereby contributing to the improvement of their own and their families' living standards (Rahman, 2007).

#### *Micro-saving*

Micro saving is another important branch of microfinance, involving small deposit accounts designed for low-income individuals or families. These savings mechanisms provide an incentive to store funds for future use and financial stability. Generating a savings culture within communities is a primary objective of microfinance institutions (MFIs). Participation in MFIs enables individuals—particularly women—to generate income through small-scale businesses, from which they can save money to meet future expenses (Graham, 2000).

#### *Training*

Training refers to the process of developing specific skills and knowledge, while awareness denotes a conscious understanding or perception of events and issues. In the context of microfinance, MFIs provide training and awareness programs to enhance clients' knowledge, capabilities, and decision-making. These programs are aimed at improving income-generating capacity and raising awareness about health and social well-being (Wright, 2000).

#### ***Dependent Variable: Poverty Reduction***

Poverty reduction in this study is assessed through supporting variables that serve as indicators of improved living standards. These include:

##### *Income*

refers to the money generated by microfinance clients through investment of the loans received from MFIs. It is used to support daily household expenditures and is considered one of the most critical indicators of the success of microfinance interventions. Household income is frequently reported as a key economic statistic and is widely used to measure various socio-economic parameters (Adhikari, 2013).

##### *Health*

Health is defined as a state of complete physical, mental, and social well-being. Along with education, health is a significant non-economic outcome of microfinance at the household level. Microfinance can positively influence health by promoting access to formal medical care and discouraging reliance on traditional or superstitious treatments. Improved income through microfinance allows households to afford better healthcare services, contributing to overall well-being (Wright, 2000).

##### *Education*

Education refers to the process of acquiring knowledge, skills, values, and habits through structured learning. One of the primary goals of low-income families participating in microfinance programs is to invest in their children's education. Previous studies have indicated that children from microfinance-supported households are more likely to attend school regularly and receive better educational outcomes compared to those from non-participating households (Hashemi, 2003).

## **Research Methodology**

This study employs a descriptive research design to achieve its objectives. To gather relevant information, both primary and secondary data sources were utilized. Secondary data were collected from credible sources such as academic journals, newspapers, periodicals, bulletins, magazines, and various published and unpublished reports. Primary data were obtained through structured questionnaires, direct observations, and personal interviews conducted with selected respondents.

### **Population and Sampling Procedure**

The target population for this study comprises residents of Charaudi, Dhading who are active clients of microfinance institutions (MFIs). The study adopted a non-probability purposive sampling technique, wherein participants were selected based on their relevance to the research objectives and ease of accessibility. This sampling method was particularly suitable under the constraints of the COVID-19 pandemic, as it allowed for economical, efficient, and timely data collection.

The purposive sampling approach was employed to focus on individuals who are direct beneficiaries of microfinance services, thereby ensuring the relevance of the collected data. According to Sekaran (2013), “sample sizes larger than 30 and less than 500 are appropriate for most research.” In alignment with this guideline, a total of 140 questionnaires were distributed, out of which 120 valid responses were obtained and used for analysis.

Prior to the main survey, a pilot study involving 25 participants was conducted to test the reliability and validity of the research instrument. Based on the results of the pilot test, necessary adjustments were made to enhance the clarity and consistency of the questionnaire.

The finalized questionnaire included various forms of closed-ended questions, such as multiple-choice (single response), ranking scales, and Likert-type items. A five-point Likert scale was specifically employed to capture respondents’ perceptions regarding the impact of microfinance on poverty alleviation. Participants were selected based on their status as active users of microfinance services.

### **Data collection procedure**

This study is primarily based on primary data, which were collected through a convenience sample survey using structured questionnaires administered to 120 microfinance clients in Charaudi, Dhading. The questionnaire was divided into two sections: the first section focused on demographic and socio-economic characteristics of the respondents, while the second assessed their experiences with microfinance services and their financial literacy levels.

The instrument comprised a combination of Likert scale items, multiple-choice questions, and option-based responses designed to capture quantitative data on the impact of microfinance on poverty reduction. The questionnaire aimed to evaluate not only the outcomes of microfinance engagement but also the respondents’ level of understanding of financial concepts and practices.

### **Data Processing Procedure**

Upon collection, the data were systematically edited, coded, classified, and tabulated using Microsoft Excel. This process ensured consistency, accuracy, and readiness of the data for statistical analysis. The organized dataset provided a clear and comprehensive representation of the performance and effectiveness of microfinance programs in the study area.

### **Statistical Tools**

To achieve the research objectives and analyze the collected data, several quantitative statistical tools were employed. These include:

- Descriptive statistics such as mean and standard deviation to summarize the central tendency and dispersion of the data;
- Correlation analysis to examine the relationship between microfinance variables and indicators of poverty reduction;
- Regression analysis to determine the strength and significance of the impact of microfinance services on key poverty indicators.

Additionally, tables and graphical representations (such as bar charts and pie charts) were used to visually present and interpret the findings effectively.

Statistically regression equation can be written as:

$$\hat{Y} = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + e_j$$

Where,

- $\hat{Y}$  = poverty reduction (dependent variable)
- $X_1$  = micro saving
- $X_2$  = micro credit
- $X_3$  = training and awareness
- $\alpha$  = Constant
- $\beta_1, \beta_2, \beta_3, \beta_4$  = Regression coefficients of Factor 1 to Factor 5 respectively
- $e_i$  = Error term

### Variables and Measurement

Basically, in this research the variables are classified into three categories they are:

1. Micro credit
2. Micro saving
3. Training and Awareness

The result indicated that all the variables have the value greater than the standardized value i.e. 0.7 (Nunnally & Branstrain, 1994). Hence, the categories for survey instruments are valid and reliable, and the scales used in survey instruments are unidimensional. Hence the data are considered as acceptable.

### Data Presentation and Analysis

Descriptive analysis was conducted to evaluate the perceived impact of the key independent variables—micro-credit, micro-savings, and training and awareness—on poverty reduction indicators such as income, education, and health. The analysis is based on responses collected using a five-point Likert scale, where 1 = Strongly Disagree and 5 = Strongly Agree. Accordingly, mean scores approaching 1 reflect a low perceived impact, while scores approaching 5 indicate a high perceived impact.

Measures of central tendency (mean) and dispersion (standard deviation) were computed for each variable to interpret the overall impact as perceived by microfinance beneficiaries.

#### Micro-Credit

To assess the role of micro-credit in poverty reduction, its impact was examined across three key dimensions:

- Increase in household income after receiving the loan
- Improvement in educational access or quality
- Enhancement in regular health checkups

Table 1 presents the descriptive statistics of micro-credit based on the Likert-scale responses from 120 participants.

Table 1

Descriptive Statistics of Micro Credit

Variables	Mean	Std. Deviation
My income has been increased after receiving loan from microfinance institution	4.33	0.842
Micro-credit provided by microfinance has been instrumental in creating educational environment for the children in your home.	4.17	0.714
I go for regular checkup since I am involved in microfinance	3.87	0.607
Micro-Credit	4.12	0.72

Source: Field survey 2020

**Micro Saving**

These results suggest that micro-savings are perceived to have a high positive impact on both income generation and the ability to meet educational costs. However, the extremely low mean score for medical expenses (1.00) indicates that micro-savings are not effectively contributing to healthcare-related financial needs among respondents. This disparity may reflect limitations in the adequacy of saved funds or prioritization of spending among low-income households.

Table 2  
Descriptive Statistics of Micro Saving

Variables	Mean	Std. Dev
Saving generated from microfinance activities have been proved instrumental vehicle in meeting educational expenses.	4.28	0.869
Micro-saving facilities provided by microfinance institutions helps to increase the level of income.	4.4	0.771
Saving generated from microfinance activities has helped in meeting my medical expenses.	4.17	0.748
Micro-Saving	4.28	0.796

Source: Field Survey 2020

**Training and Awareness**

Training and awareness initiatives provided by microfinance institutions (MFIs) are crucial for enhancing the overall living standards of beneficiaries. In this study, the impact of such programs has been evaluated based on three key indicators:

- Increase in household income
- Increase in the number of school-going children
- Enhanced awareness and consciousness toward healthcare

Table 3 presents the mean and standard deviation values for each of these variables, measured on a five-point Likert scale (where 1 = Strongly Disagree and 5 = Strongly Agree).

The findings indicate that respondents perceive training and awareness programs to have a positive impact across all three dimensions. Specifically:

- The mean score for improvement in income is 4.03 (SD = 0.819)
- The mean score for increased school enrollment among children is 3.96 (SD = 0.666)
- The mean score for increased health awareness is 4.01 (SD = 0.628)

The overall average mean for the training and awareness dimension is 4.00 with a standard deviation of 0.704, reflecting a consistent and favorable perception among participants regarding the benefits of these programs.

Table 3  
Descriptive Statistics of Training and Awareness

Variables	Mean	Standard Deviation
Training and awareness programs provided by microfinance help to improve income	4.03	0.819
Training and awareness programs have increased the number of school-going children	3.96	0.666
Training and awareness programs have increased consciousness toward healthcare	4.01	0.628
Overall (Training and Awareness)	4.00	0.704

Source: Field Survey 2020

These results highlight the significant role that non-financial services—such as training and awareness—play in complementing financial interventions to reduce poverty and improve socio-economic well-being.

### Correlation Analysis

The Pearson correlation coefficients among the variables—Poverty Reduction, Micro Credit, Micro Saving, and Training and Awareness—are presented in the table below. The coefficients indicate the strength and direction of the linear relationships between the variables.

Table 4

Correlation Analysis

Variables	Poverty Reduction	Micro Credit	Micro Saving	Training and awareness
Poverty Reduction	1			
Micro Credit	.436**	1		
Micro Saving	.387**	.590**	1	
Training and Awareness	.755**	.388**	.437**	1

Sources: Field Survey 2020

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

\*Correlation is significant at the 0.05 level (2 tailed).

The correlation analysis reveals significant positive relationships between microfinance components (micro-credit, micro-saving, training and awareness) and poverty reduction. Notably, training and awareness exhibit the strongest association with poverty alleviation, underscoring the importance of complementary non-financial services alongside financial products in enhancing socio-economic outcomes.

### Regression Analysis

Regression analysis was done to find out the effect of predictors on the dependent variable. Linear regression was calculated and presented with F and t-value.

Multiple Linear Regression Model

$$\hat{Y} = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + e_j$$

Where,

$\hat{Y}$  = poverty reduction (dependent variable)

$X_1$  = micro credit

$X_2$  = micro saving

$X_3$  = training and awareness

$\alpha$  = Constant

$\beta_1, \beta_2, \beta_3$  = Regression coefficients of Factor 1 to Factor 3 respectively

$e_i$  = Error term

Table 5

Regression Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the estimate
1	.771*	0.595	0.584	0.51044

Sources: Field Survey 2020

\*\*Significant at the 0.01 level (2 tailed).

\*Significant at the 0.05 level (2 tailed).

Table 5 reveals the regression model demonstrates a strong and significant predictive relationship between the independent variables related to microfinance and the dependent variable, poverty reduction. Nearly 60% of

the variance in poverty reduction is accounted for by the model, indicating that micro-credit, micro-saving, and training and awareness are important factors influencing poverty alleviation in the study context.

Table 6

ANOVA Analysis

Model	Sum of Square	Df	Mean Square	F	Sig.
Regression	44.352	3	14.784	56.743	0
Residual	30.223	116	0.261		
Total	74.576	119			

Source: Field Survey 2020

a. Dependent variable: poverty reduction

b. Predictors are micro credit, micro saving, micro insurance.

The table 6 shows the ANOVA test of independent variables. The ANOVA results indicate that the regression model significantly predicts poverty reduction, with the independent variables (micro-credit, micro-saving, and training and awareness) explaining a significant portion of the variance in poverty reduction. The very low p-value (< 0.001) confirms that the overall model fit is not due to chance.

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	Beta	Std Error	Beta		
(Constant)	1.059	0.189		5.591	0
Micro credit	0.14	0.058	0.181	2.43	0.017
Micro saving	-0.017	0.054	-0.024	-3.17	0.752
Training and Awareness	0.567	0.054	0.696	10.412	0

Source: Field Survey 2020

a. Dependent Variable: Poverty reduction.

On the basis of above findings, the following model has been developed.

$$\hat{Y} = 1.059 + 0.140X_1 + -0.017X_2 + 0.567X_3$$

The intercept value of 1.059 represents the expected level of poverty reduction when all independent variables are zero. It is statistically significant (p < 0.001), meaning the baseline poverty reduction is significantly different from zero.

Micro Credit: Unstandardized coefficient (B = 0.140): For every one-unit increase in micro credit, poverty reduction increases by 0.140 units, holding other variables constant. Standardized coefficient (Beta = 0.181): Micro credit has a positive but moderate effect on poverty reduction relative to the other variables. Significance (p = 0.017): This effect is statistically significant at the 5% level, indicating that micro credit has a meaningful positive impact on poverty reduction. Micro Saving: Unstandardized coefficient (B = -0.017): The negative coefficient suggests a slight negative relationship between micro saving and poverty reduction, but this is very close to zero.

Standardized coefficient (Beta = -0.024): This indicates a negligible effect. Significance (p = 0.752): The effect is not statistically significant, implying that micro saving does not have a statistically significant impact on poverty reduction in this model.

Training and Awareness: Unstandardized coefficient (B = 0.567): For each one-unit increase in training and awareness, poverty reduction increases by 0.567 units, controlling for other variables. Standardized coefficient (Beta = 0.696): This is the strongest predictor in the model, showing a large positive effect on poverty reduction. Significance (p = 0.000): The effect is highly statistically significant, indicating training and awareness programs have a strong and reliable positive impact on poverty reduction.

## **Conclusion and discussion**

The study has been guided by objective to examine the relationship between microfinance on improving living standard and also helping them to rise from their poverty status. To fulfill the objective of the study, descriptive and analytical research design has been followed where micro credit, micro saving and training and awareness were examined independently for analyzing their impact on improving living standard (income, education and health). Cronbach's Alpha, correlation analyses were run to check whether data fit for regression analysis. The preliminary results of the study were checked under descriptive statistics, frequency and percentage analysis. Further correlation and multiple regressions were run to check relationship between dependent and independent variable and their level of significance. Based on the study findings, the study draws a number of conclusions. First, the study concludes that microfinance activities namely micro-credit, micro-saving and training and awareness have significant effect on improving income level of the respondents. This means increase in micro-credit, micro-saving and training and awareness will significantly improve the level of income of the respondents. Therefore, microfinance programs such as micro-credit, micro-saving, training and awareness are also the keys to improve the income level and thus to enjoy the better life style by the people in the society.

Second, the study reveals that micro-credit, micro-savings and training and awareness have significant positive relationship with education level of respondents and their children's. This means increase in micro-credit, micro-savings and training and awareness will significantly improve the level of education. Therefore, this result suggests that microfinance activities namely: micro-credit, micro-savings and training and awareness programs have important role in improving the education level of the people in community.

Thirdly micro-credit, micro-savings and training and awareness have significant relationship with health status of respondents. Therefore, the microfinance, in addition to other powerful tools, has been proved to improve health status of the people living in the rural areas of the country.

Major microfinance services provided by the microfinance institutions are micro-credit, micro-savings and training and awareness and these services have great impact on the lives of poor people. People can generate income saving and can have a better access on education and health. This study also concludes that after the involvements of microfinance program people have been able to generate income, they were developing saving habits and they were more conscious towards their health. Micro-credit, micro-savings and training and awareness have positive relationship on improving income, education and health. So the findings of this study there is noticeable and positive impact of the microfinance chosen. Activities on improving the living standard of people at Charaudi, Dhading. Finally, availability and accessibility of Microfinance Institutions (MFIs) is no doubt positive way to bringing a revolution not only in their lives of poor but also in society. The dream of healthy and educated society with no discrimination and biased can be achieved through available and accessible savings and credit. The hope of life that no one will sleep hungry, no one will die lack of medication and our children can read and write on their own then everyone will be pillar of society.

## **Discussion**

The relationship between microfinance and poverty reduction has been a subject of ongoing debate in academic literature. This study contributes to this discussion by examining the Nepalese context, revealing findings that both align with and diverge from previous research.

Consistent with a significant body of existing literature, this study finds that microfinance activities contribute positively to poverty reduction in Nepal. This aligns with Bashyal's (2005) observation that microfinance can reduce both income and human poverty over time. Similarly, Shrestha (2010) highlighted the positive outcomes of microfinance and social mobilization within the Agricultural Development Bank, emphasizing the demand for program expansion to serve the poor and disadvantaged in rural Nepal. Dhurba (2006) further supports this positive impact, noting an increase in women's self-confidence and decision-making capacity due to microfinance involvement, while Soti (2002) concluded that participation in microcredit programs empowered women to varying degrees.

However, the findings also indirectly touch upon nuances that previous studies have explored. For instance,

while Yunus (2003) advocated for credit as a human right, emphasizing its role in creating self-employment, the United Nations (1999) pointed out that the poorest individuals often have low demand for credit due to their limited capacity for profitable use and debt servicing. This suggests that while microfinance holds immense potential, its effectiveness can be influenced by the specific circumstances of the borrowers. Furthermore, Crab (2008) examined the relationship between microfinance institution success and economic freedom, highlighting the importance of a conducive environment for sustainable micro-lending. While this study focuses on the direct impact of microfinance on poverty, these broader considerations of institutional sustainability and client capacity are implicitly relevant to the overall effectiveness of microfinance initiatives in Nepal.

In conclusion, this study reinforces the notion that microfinance plays a vital role in poverty reduction within Nepal, largely corroborating earlier research that demonstrates its positive effects on income, human well-being, and women's empowerment. However, it also implicitly acknowledges the complexities surrounding microfinance, hinting at the need for continued exploration into factors that influence its optimal impact on different segments of the impoverished population. Lamsal (2005) observed whole impact of microfinance program is to be associated in multi-dimensional ways. Although the impact of the microfinance program in the field of income generation and living standard is positive, but not satisfactory.

### **Implications of the study**

The findings and conclusions of this study regarding the impact of microfinance on poverty reduction among rural populations carry significant implications for various stakeholders, including policymakers, practitioners, and academicians. The evidence demonstrates that microfinance services—particularly micro-credit, micro-savings, and training and awareness programs—positively influence key dimensions of living standards, namely income, education, and health. These results underscore the potential of microfinance as a strategic tool for social and economic development. For policymakers, the findings suggest the need to strengthen the institutional and regulatory frameworks that support the expansion of microfinance services, particularly in underserved and remote regions. The government may consider implementing targeted interventions and incentive schemes to support Microfinance Institutions (MFIs) in reaching marginalized populations, especially the hardcore poor who remain outside the reach of current microfinance initiatives.

For practitioners in the microfinance sector, the study highlights the importance of designing and delivering contextually relevant and needs-based financial products. Customizing services to address specific challenges faced by rural poor households can enhance the effectiveness and inclusivity of microfinance programs. Furthermore, integrating capacity-building components such as financial literacy and health education into microfinance packages can amplify their developmental impact.

Academically, this research contributes to the growing body of literature on the role of microfinance in poverty alleviation and provides empirical insights that can inform future studies. Researchers are encouraged to explore further the long-term and multidimensional impacts of microfinance, as well as the mechanisms through which these effects manifest across different socio-economic groups.

In conclusion, the study affirms that microfinance can be a vital instrument for enhancing the socio-economic well-being of rural populations. With supportive policies, innovative program design, and continued research, microfinance can serve as a catalyst for sustainable development and social equity.

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# भाषाशिक्षणका सन्दर्भमा भाषिक परीक्षणमा हुनुपर्ने गुणहरू

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## लेखसार

भाषा शिक्षण सिकाइ पश्चात भाषिक परीक्षण हुनेगर्दछ । परीक्षण परीक्षासँग सम्बन्धित हुन्छ । परीक्षा आधिकारिक, उच्चस्तरीय, विश्वासिलो हुनुपर्छ । यसका लागि परीक्षण उद्देश्यपूर्ण वास्तविक परीक्षण भयो कि भएन भन्ने सम्बन्धमा त्यसको विधि प्रक्रियाका आधारमा प्रभावकारिताको खोजी गरिन्छ । भाषिक परीक्षणमा हुनुपर्ने गुणहरू के के हुन् ? यसका विशेषताले परीक्षणको स्थान कहाँनिर राख्दछ ? भन्ने जिज्ञासामा आधारित भएर भाषा शिक्षण सिकाइमा भाषिक परीक्षण के हो ? यसका गुणहरू के के छन् ? भन्ने सम्बन्धमा अनुसन्धान कार्य गरिएको छ । अनुसन्धानको सैद्धान्तिक आधार परीक्षण सिद्धान्त रहेको छ भने स्रोत सामग्रीहरू द्वितीय स्रोतका रहेका छन् । पुस्तकालय अध्ययन पद्धति रहेको यसलेखमा वर्णनात्मक विवरणात्मक र व्याख्यात्मक प्रक्रियाबाट प्राप्त तथ्याङ्कको व्याख्या विश्लेषण गरिएको छ । प्रस्तुत अनुसन्धान पश्चात भाषिक परीक्षणमा अनिवार्य र आवश्यक महत्वपूर्ण गुणहरूमा वैधता, विश्वसनीयता, व्यावहारिकता र विभेदकारिता रहेका हुन्छन् । उद्देश्य अनुरूपको परीक्षण कार्य हुनु वैध हो । यो ठोस विशुद्ध र प्रतिनिधिमूलक हुन्छ । मुख्यतः परीक्षाका आन्तरिक र वाह्य विधान वैधतामा पर्दछन् । आन्तरिक वैधता, विषयगत वैधता, समवर्ती वैधता, रचनात्मक वैधता, अनुमानात्मक वैधता, मानदण्डात्मक वैधता वैधताका प्रकार हुन्छन् भने भाषा शिक्षणका सिलसिलामा भाषिक परीक्षणमा विश्वसनीयता, व्यावहारिकता र विभेदकारिताको थप महत्वपूर्ण भूमिका हुन्छ । परीक्षणको मापनमा हुने एकरूपता नै परीक्षणको मूल विश्वसनीयता हो । यो परीक्षण अनिवार्य हुनुपर्छ । वैधतालाई वास्तविक र ठोस निष्कर्षमा पुर्याउन अपेक्षित उद्देश्य प्राप्त गर्न विश्वसनीयताको अहम् भूमिका हुन्छ । सुसञ्चालनका लागि स्पष्ट अग्रगामी परीक्षण हुनु प्रभावकारिता हो । परीक्षणमा सुगमता सरलता विश्लेषणात्मकता नै व्यावहारिकता हो । भाषिक परीक्षणको महत्वपूर्ण अर्को विशेषता विभेदकारिता हो । विभिन्न क्षमता स्तर उपलब्धी मापन गर्ने विशेषता बोकेको परीक्षण हो । क्षमता तह स्तर उमेर ज्ञान पृष्ठभूमिका आधारमा परीक्षण रहनु परीक्षणको विभेदकारिताको विशेषता हो । भाषिक परीक्षणमा हुनुपर्ने गुण यसका विशेषताले उद्देश्यअनुरूपको परीक्षण मापन र मूल्याङ्कन मद्दत गर्दछ ।

मुख्य शब्दावली: वैधता, मानदण्डात्मकता, विश्वसनीयता, व्यावहारिकता, विभेदकारिता ।

## पृष्ठभूमि

भाषा शिक्षण भाषिक सीपको शिक्षण सिकाइ भएकाले भाषिक परीक्षण भाषिक सीपमा आधारित हुनुपर्छ । भाषिक परीक्षण भाषा शिक्षण सिकाइ सम्बद्ध भएर हुँदाँ यसमा के कस्ता

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अनिवार्य र आवश्यक कुराहरु हुनुपर्छ जसले गर्दा उद्देश्यपरक परीक्षण हुनसक्छ भन्ने सम्बन्धमा रहेको जिज्ञासा अनुसन्धानात्मक प्रश्न नै यस अनुसन्धानको मुख्य उद्देश्य हो । प्रभावकारी भाषिक परीक्षणमा हुनुपर्ने विशेषता अर्थात् त्यसका गुणहरुका सम्बन्धमा गरिएको अध्ययनले भाषा शिक्षण सिकाइका सन्दर्भमा भाषिक परीक्षण गर्दा ध्यानदिनुपर्ने कुराहरु परीक्षणमा हुनुपर्ने गुणहरु हुन् । यस्ता गुणहरुको खोज विश्लेषण र भाषिक परीक्षणमा आवश्यक गुणहरुका सम्बन्धमा निष्कर्ष निकाल्नु आवश्यक भएकाले यस अध्ययनमा भाषा शिक्षणका सन्दर्भमा भाषिक परीक्षणमा हुनुपर्ने गुणका सम्बन्धमा अध्ययन गरिएको छ ।

## अध्ययनको उद्देश्य

यस अध्ययनको मुख्य उद्देश्य भाषा शिक्षणका सन्दर्भमा भाषिक परीक्षणमा हुनुपर्ने गुणका सम्बन्धमा अध्ययन गर्नु हो । अनिवार्य आवश्यक महत्वपूर्ण गुणहरुलाई नै भाषिक परीक्षणका मुख्य गुणहरु मानिन्छन् यस्ता गुणहरुका सम्बन्धमा अध्ययन विश्लेषण गर्नु यस अध्ययनको मुख्य उद्देश्य हो ।

## अध्ययन विधि

यो गुणात्मक ढाँचाको अध्ययन हो । द्वितीय स्रोत सामग्री संकलनको स्रोत हो भने अध्ययन पद्धति पुस्तकालय हो । भाषा शिक्षण भाषिक परीक्षणका सम्बन्धमा उल्लिखित सिद्धान्त प्रयोग अभ्यास नै यसका मुख्य साधनहरु हुन् । वर्णनात्मक विवरणात्मक प्रक्रियाबाट व्याख्या विश्लेषण गरी निष्कर्ष निकालिएको छ ।

## अध्ययनको विश्लेषण

### छलफल/परिणाम

### भाषिक परीक्षणका गुण

भाषिक परीक्षणमा आवश्यक गुण, विशेषता हुनु आवश्यक छ । उत्कृष्ट परीक्षणका उद्देश्यपूर्ण, विधि प्रक्रियाबद्ध हुनुपर्छ । भाषिक परीक्षणलाई उद्देश्यपूर्ण बनाउने, सवल, वैध विश्वसनीय बनाउने कुरामा यसमा रहेका केही महत्वपूर्ण पक्षहरु हुन्छन् । एक असल परीक्षाका लागि उच्चस्तरीय गुण र विशेषताहरु प्रदर्शित हुनु वा पालन गरिनु आवश्यक मानिन्छ (पौडेल, २०७० : ३७) । त्यस्ता आवश्यक महत्वपूर्ण पक्षहरु नै असल, उत्कृष्ट भाषिक परीक्षणका गुणहरु हुन्छन् । त्यस्ता भाषिक परीक्षणका गुणहरुमा वैधता, विश्वसनीयता, व्यावहारिकता र विभेदकारिता नै मानिन्छन् ।

### वैधता

उद्देश्य अनुरूपको मापन हुनु भनेको वैधता हो । जुन उद्देश्यले परीक्षा सञ्चालन गरिएको हुन्छ सोही अनुरूप विशुद्ध, ठोस र प्रतिनिधिमूलक रूपमा सुसूचित गर्ने परीक्षाको महत्वपूर्ण गुण नै वैधता हो (खनिया, सन् २००५: ९४) । परीक्षण गर्न खोजिएको पक्ष त्रुटिरहित ढङ्गबाट परीक्षण हुनु वैधता हो । पाठ्यक्रमले निर्देश गरे अनुसार नियमसङ्गत रूपमा वैधानिक तवरले गरिने भाषिक परीक्षण वैध मानिन्छ । शिक्षण सिकाइका सन्दर्भमा उत्प्रेरित गर्ने, विषयवस्तुलाई स्पष्टसँग उल्लेख गर्न सक्ने, विषय केन्द्रित उत्तरको अपेक्षा गर्ने स्तरयुक्त अङ्कन प्रणाली अवलम्बन गर्ने, परीक्षण मूल्याङ्कन प्रणाली अनुरूप नतिजा प्रकाशन हुनु नेपाली भाषा शिक्षणका सन्दर्भमा वर्तमान अवस्थामा वैधताका रूपमा लिइन्छ । वैधतामा आन्तरिकता र बाह्य विधान हुनेगर्दछ । यिनै वैधताका पक्ष नै प्रकारका रूपमा रहने गर्दछन् । वैधताका प्रकारहरु यसप्रकार छन् :

### आकृतिगत वैधता

यो परीक्षणको वाह्य वैध रूप हो । परीक्षणका सूत्रहरुमा सूचकात्मक गुणहरु भएको र विद्यार्थीहरुका लागि वास्तविक परीक्षणको विश्वास दिलाउने प्रकृतिको वैधता आकृतिगत वैधता हो । कतिपय विद्वान्हरुले यसलाई वैधता भित्रको आवश्यक पक्ष नभएको पनि मानेका छन् । तर परीक्षणका सन्दर्भमा वैधताको आभासको प्रत्याभूतिमा यसप्रकारको वैधताको ठूलो भूमिका रहन्छ । यसले भाषिक परीक्षणलाई वास्तविक परीक्षणमा उभ्याउने त्यसको गुण, व्यवहारको रूप दिने वैधताको प्रकार हो । परीक्षण कार्य प्रकाशप्रतिको वैधतानुभूतिको लागि पनि यसप्रकारको महत्व उच्च रहन्छ । यस्तो गुणयुक्त परीक्षण प्रभावकारी मानिन्छ ।

### विषयगत वैधता

विषयका उद्देश्य परिपूर्ती गर्ने उद्देश्यले परीक्षण साधन र सामग्रीहरू निर्माण गर्दा वैधानिक आधारका साथ परीक्षण कार्य गर्नु विषयगत वैधता हो । भाषापाठ्यांशका उद्देश्यगत उपलब्धिहरूको प्रतिनिधिमूलक जाँच गर्ने उपयुक्तता र व्यापकताका रूपमा विषयगत वैधतालाई लिइन्छ (पौडेल, २०७० : ३९) । यस्तो वैधताले भाषा पाठ्यक्रममा निर्दिष्ट उद्देश्यको उपलब्धिलाई लक्षित गरी विषयवस्तुको उपयुक्तता र व्यापकतालाई ख्याल गरी विषयवस्तु अभ्यास र उपलब्धि स्तर हुने गरी विधि प्रविधि स्रोत साधनका सहायताबाट विषयगत वैधता प्रस्तुत हुनेगर्दछ । यसका लागि परीक्षण योजना, विशिष्टीकरण तालिका निर्माणमा विशेष ध्यान दिनुपर्दछ ।

### **समवर्ती वैधता**

समवर्ती वैधता भन्नाले योजना सहितको तयारी परीक्षा र ठीक त्यस्तै नजिकको अर्को कुनै परीक्षाको स्तरीयतालाई ध्यानमा राखेर तुलनात्मक रूपमा वैधता कायम गर्ने वैधताको प्रकार समवर्ती वैधता हो । यसमा निर्मित भएको परीक्षण विधि प्रक्रियाको पूर्व स्थापित स्तरीय शिक्षकहरूद्वारा तयार गरिएको वा समान स्तरको प्रचलित स्तरीय परीक्षण प्रणालीबीच एकरूपता समानता र वैधताको तुलनात्मक रूपमा समान ढङ्गले तयार पारी समवर्ती वैधता हेरिन्छ । यसबाट स्तरीय वैधता कायम गर्न मद्दत पुग्दछ ।

### **रचनात्मक वैधता**

रचनात्मक वैधता भनेको सम्बद्ध विषयवस्तुको ज्ञान र सीपको परीक्षणबाट विद्यार्थीको भित्री भावना क्षमता र प्रवृत्तिको समेत परीक्षण गर्न सकिने परीक्षणको वैधता हो । परीक्षण विधि प्रविधिमा बोधात्मकता, सिकारूको अन्तर्निहित तार्किक, बौद्धिक सांवेगिक, सामाजिक, मौलिक पक्षको समेटिएको परीक्षण आधार वैधयुक्त मानिन्छ । यसबाट साधारणतया सैद्धान्तिक र प्रायोगिक समस्यामूलक प्रश्नावलीका माध्यमबाट वैधताको मापन सहित प्रयोग गरिन्छ । यसरी परीक्षण सामग्री साधन विधि, प्रविधिमा रचनात्मकताको आधार सहित तयार भएको छ भनेर परीक्षणमा रचनात्मक वैधताको खोजी गरिन्छ । वैधमा रहेको महत्वपूर्ण प्रभावकारी गुण भएको वैधता र रचनात्मक वैधता हो । यो परीक्षणमा हुनुपर्ने गुण हो ।

### **अनुमानात्मक वैधता**

परीक्षणमा हुनुपर्ने अर्को महत्वपूर्ण गुण अनुमानात्मकता हो । यसमा कुनै पनि परीक्षणले वर्तमान अवस्थामा विद्यार्थीको योग्यता क्षमताको मात्र परीक्षण नगरी भावी योग्यता र क्षमताको पनि पूर्वानुमानसहितको वैधता अनुमानात्मक वैधता हो । विद्यार्थीको एक पटकको सिकाइलाई मात्र नहेरेर पहिले देखिको सिकाइ उसको योग्यता क्षमतालाई परीक्षण गरी त्यसका आधारमा भावी योग्यता क्षमताको अनुमान तुलनात्मक रूपमा गरिनु यसप्रकारको वैधताको गुण हो । विषयगत, रचनात्मक, मापनात्मक वैधताका आधारमा यस वैधताले सुझाव समेत दिने गर्दछ । विद्यार्थीको विषय क्षेत्रगत दक्षताको पूर्वानुमानसहित भावी शिक्षण प्रशिक्षण र निदानात्मकतामा अनुमानात्मक वैधता महत्वपूर्ण हुन्छ । विद्यार्थीको भाषिक क्षमता, उसको उपलब्धि, सिकाइ स्तरका आधार गरिने शिक्षण सिकाइ क्रियाकलाप, अभ्यासात्मक कार्यकलाप तय गर्न मद्दत पुग्दछ ।

### **मानदण्डात्मक वैधता**

कुनै पनि विषय क्षेत्रको निश्चित कक्षा, तह र समूहमा विषयवस्तुको शिक्षण पछि लिइने परीक्षणका आधारमा उद्देश्य अपेक्षा अनुसार उपलब्धि हासिल भयो भएन, भए कुन स्तरमा भयो त्यसको गुणका आधारमा वैधता कायम हुनु मानदण्डात्मक वैधता हो । विषयगत, रचनात्मक, समवर्ती र अनुमानात्मक वैधताको लेखाजोखाका आधारमा भाषा शिक्षण सिकाइ पाठ्यांशका उद्देश्य अनुसार भएको र त्यसको परीक्षण पनि वैधतापूर्वक गरिएको आधारबाट मानदण्डात्मक वैधताको हुन्छ ।

भाषिक परीक्षणमा वैधता अनिवार्य आवश्यक परीक्षणीय गुण हो । वैधताभिन्न परीक्षण उद्देश्य साधन वातावरणले भिन्न परीक्षण वैधता कायम हुन जान्छ । परीक्षण समग्र भाषिक शिक्षण सिकाइको मूल्याङ्कन आधार भएकाले वैध परीक्षणले मात्र प्रभावकारी मूल्याङ्कन गर्न मद्दत गर्दछ । त्यसैले परीक्षणमा वैधता हुनु जरुरी हुन्छ ।

### **विश्वसनीयता**

परीक्षणको अर्को महत्वपूर्ण गुण भनेको विश्वसनीयता हो । परीक्षणको वैधतालाई सुनिश्चित गर्ने आधार विश्वसनीयता हो । परीक्षणमा विश्वसनीयताले यस्तो अर्थ राख्छ परीक्षण भइसकेपछि समग्र मूल्याङ्कनमा जसरी पनि, जुन माध्यमबाट गरेपनि, जे गरे पनि एउटै परिणाम आउँछ भने वैध भएको र विश्वसनीय छ भन्ने आधार हुन्छ । यो साङ्ख्यिकीय हुन्छ । यो दुई पद्धतिबाट निर्धारित

हुन्छ । एउटा परीक्षार्थी सम्बन्धी विश्वसनीयता र अर्को परीक्षक सम्बन्धी । परीक्षार्थी सम्बन्धी विश्वसनीयताले उनीहरूको दक्षताको मूल्याङ्कन गर्ने सूचना कतिको भरपर्दो छ भन्ने हेर्छ भने परीक्षक सम्बन्धी विश्वसनीयताले परीक्षार्थीको दक्षतालाई परीक्षकबाट कतिको सङ्गतिपूर्ण अङ्कन वा मापन भएको छ भन्ने कुरा हेरिन्छ । मापनमा देखिने एकरूपताको गुण नै विश्वसनीयताको गुण हो (पौडेल, २०७० : ४१) । परीक्षण विश्वसनीयता मापनका विधिहरू पनि छन् : अर्धविभाजन, समानान्तर कुडर, रिचर्डसन विधि र कर्नव्याक अल्फा । यी सबै मार्फत भाषिक परीक्षामा विश्वसनीयताको खोजी गरिन्छ । विश्वसनीयतामा मुख्य गरी परीक्षण, पुनः परीक्षण विधि, समानान्तर बनोट परीक्षण विधि प्रयोग हुने गरेको पाइन्छ । एउटै परीक्षण सामग्रीबाट कुनै दुई परीक्षणबाट प्राप्त सूचनाको तुलनात्मक अध्ययनबाट सहसम्बन्धात्मक गुणाङ्क पत्ता लगाई उच्च सहसम्बन्धको आधारमा विश्वसनीयता मानिने परीक्षण पुनः परीक्षण विधि हो । सहसम्बन्धको गुणाङ्कका आधारमा उच्च सहसम्बन्ध रहने विधि समानान्तर बनोट परीक्षण विधि हो । फरक फरक समूहमा फरक फरक समयमा परीक्षण गर्दा आएको सङ्गतिपरक सूचनामा उच्चता र न्यूनताको माप गर्ने विधि अन्तरसङ्गतिमूलक विधि हो । यसरी विश्वसनीयतालाई प्रभाव पार्ने विभिन्न तत्वहरू पनि छन् । प्रश्न परिक्षणीय विधि, प्रविधिले विश्वसनीयता उच्च र न्यून हुने गर्दछ । विभेदीकरण क्षमता भएको परीक्षणमा पनि विश्वसनीयता उच्च र न्यून रहन्छ । समय सीमाका आधारमा पनि विश्वसनीयता कायम हुन्छ । छनोट विकल्पका आधारमा पनि विश्वसनीयता उच्च र न्यून हुन्छ । यस्ता विविध तत्वका आधारमा परीक्षणमा उच्च र न्यून रहने निर्धारण हुन्छ । यसरी परीक्षणलाई प्रमाणिक आधिकारिक हुन वैधता र विश्वसनीयताको यथेष्ट भूमिका हुन्छ । वैध परीक्षण प्रणालीबाट नै उच्च विश्वसनीयता प्राप्त गर्दछ, भाषिक परीक्षणले/भाषिक परीक्षणमा विश्वसनीयताको अनिवार्य र महत्वपूर्ण भूमिका हुन्छ ।

### व्यावहारिकता

परीक्षणमा व्यावहारिकता अझ महत्वपूर्ण गुण मानिन्छ । परीक्षण संचालन स्पष्ट किसिमको हुनुपर्छ त्यो नै व्यावहारिक हो (हिटा सन् १९७५) । सर्वत्र उपयोगी हुनेगरी परीक्षण प्रशासन र अङ्कनमा व्यावहारिक हुनुपर्छ । व्यावहारिकताको उपयोग असहज पनि हुन सक्छ तर त्यसमा सजग रहनुपर्छ । यसका लागि सर्वप्रथम व्यावहारिकता उपयोग गर्न परीक्षण कार्य संचालकले उपयुक्त परिवेश निर्माण विशेष ध्यान दिनुपर्छ । यसका उपयुक्त वातावरण, मानवीय स्रोत, सामग्री स्रोत समयलाई बढी प्राथमिकतामा राख्नुपर्ने हुन्छ । व्यावहारिकता भनेको परीक्षा संचालनमा सुगमता, समय, सापेक्षता, किफायतीपन, अङ्कन वा मापन सरलता तथा विश्लेषणात्मकता सुगमता जस्ता गुणहरूको सामूहिक नाम हो (पौडेल, २०७० : ४३) । समस्याको खोजी गरी निराकरणका उपायहरू पहिल्याउनु पर्छ । यसका लागि प्रश्न, परीक्षक, सञ्चालक, सङ्कलकको तालमेल हुनुपर्छ । परीक्षणका लागि आवश्यक हुने साधन, सामग्रीहरूको व्यवस्था गर्नुपर्छ । समय, परीक्षण, अङ्कन, विश्लेषणको समेत समुचित व्यवस्थापनले भाषिक परीक्षणमा परीक्षण गुणसम्बद्ध व्यावहारिकता हो । परीक्षण कार्य सञ्चालनमा सरल, सहज, समय सापेक्ष, अङ्कन मापनमा सरलता र विश्लेषणात्मक सहजता हुनु व्यावहारिकता हो । परीक्षण त्रासमय नबनी रुचीपूर्ण हुनसक्नुपर्छ । पृष्ठपोषक बन्नुपर्छ । भाषिक परीक्षण प्रयोगात्मक क्रियाकलापमा बढी केन्द्रित हुने भएकाले अझ व्यावहारिकता अवलम्बन गरिनु अनिवार्य र अति आवश्यक हुन्छ ।

### विभेदकारिता

शिक्षण सिकाइका सन्दर्भमा विद्यार्थीहरूको भाषिक क्षमता, स्तर, सिकाइ उपलब्धिका आधारमा छुट्याउनु विभेदकारिता हो । विभेदकारिता भनेको विभिन्न क्षमता स्तर र उपलब्धि स्तर भएका परीक्षार्थी छुट्याउन सक्ने गुण हो (पौडेल, २०७० : ४४) । विद्यार्थीमा व्यक्तिगत भिन्नता हुन्छ । बौद्धिक, सावेगिक, तार्किक, संज्ञानात्मक, व्यावसायिक, मौलिक, सिर्जनशील स्तर फरक फरक हुने भएकाले परीक्षणका क्रममा ती विभेदका आधारलाई लिनुपर्दछ । उच्च, मध्यम, निम्न, अतिनिम्न स्तरका विद्यार्थीहरूको पहिचान विभेदकारितामा पर्दछ । यसबाट विद्यार्थीको शैक्षिक स्तर प्राप्त हुन गई सोही अनुरूपको शिक्षण सिकाइ गतिविधि संचालन गर्न मद्दत पुग्दछ । भाषिक परीक्षणमा पनि विद्यार्थीहरूको प्रकृति अनुसार संचालन गर्न सहयोग पुग्दछ ।

### प्राप्ति/निष्कर्ष

शिक्षण सिकाइ पश्चातको परीक्षण प्रभावकारी हुनुपर्दछ । परीक्षण उद्देश्य परिपूर्तीको मापनको आधार हो । उद्देश्यपरक परीक्षणका लागि यसमा गुणयुक्तता हुनु आवश्यक छ । असल वैज्ञानिक परीक्षणमा वैधता, विश्वसनीयता, व्यावहारिकता र विभेदकारिता जस्ता गुण हुनुपर्दछ । भाषा शिक्षण सिकाइको परीक्षणमा आधिकारिक रूपले उपयुक्तताका साथ गरिने परीक्षण वैध हुन्छ । जतिसुकै जुनसुकै रूपले परीक्षण गरेपनि परीक्षणमा एकरूपता हुनु परीक्षणिय विश्वसनीयता हो भने परीक्षणमा सैद्धान्तिकता भन्दा व्यावहारिकताले भरिपूर्ण

हुनुपर्छ । उमेर तह स्तर अनुसारको सिकाइ हुने भएकाले सोही अनुरूपको शिषण सिकाइ र परीक्षण गरिनु परीक्षणमा विभेदकारिता हो । भाषिक परीक्षणमा वैधता, विश्वसनीयता, व्यावहारिकता र विभेदकारिता आवश्यक पक्ष हुन् । परीक्षणमा आन्तरिक र वाह्य विधानका कुराहरू वैधतामा पर्दछन् । वैधता : आकृतिगत, विषयगत, समवर्ती, रचनात्मक, अनुमानात्मक, मानदण्डात्मक प्रकृतिको हुन्छ । विश्वसनीयता पनि परीक्षकप्रतिको विश्वसनीयता एवम् परीक्षणप्रतिको विश्वसनीयता हुनेगर्दछ । भाषिक परीक्षण समय सापेक्ष किफायति मापनमा सरलता तथा विश्लेषणात्मक सुगमताको सामुहिक रूप व्यावहारिकता हो । भाषिक परीक्षण प्रयोगात्मकतामा बढी केन्द्रित हुने भएकाले यसमा व्यावहारिकता अनिवार्य मानिन्छ । परीक्षार्थीमा रहेको वैयक्तिक भिन्नताका आधारमा हुनेगरेको परीक्षण विभेदकारिताको परीक्षण हो । यसबाट परीक्षार्थीको क्षमता, स्तर, उपलब्धि छुट्याउन सकिन्छ । उच्च मध्यम सामान्य निम्न अतिनिम्न स्तरका विद्यार्थीको क्षमता देखापर्नु विभेदकारिता हो । विभेदकारिताका आधारमा विद्यार्थीको पहिचान गरी सोही अनुरूपको शैक्षणिक एवम् प्रशासनिक योजना निर्माणमा सघाउ पुग्दछ । सफल परीक्षणमा उपर्युक्त गुणहरू हुनु अत्यावश्यक छ ।

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