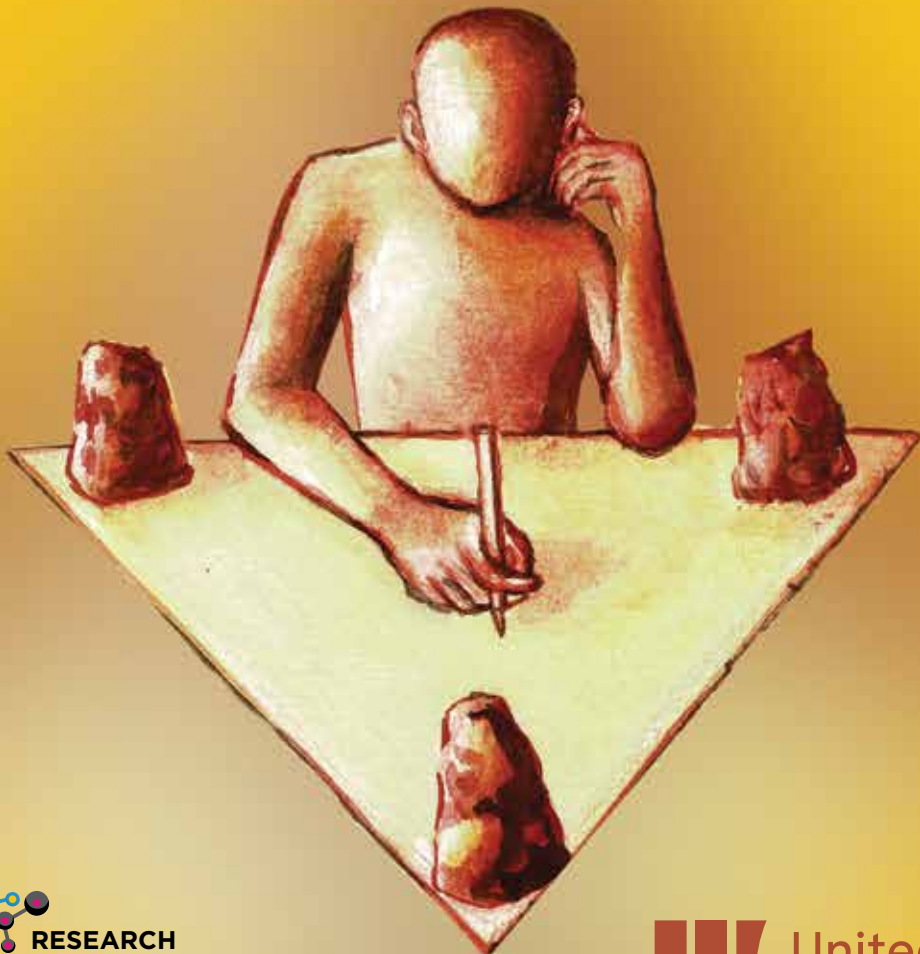


# United Journal of **Interdisciplinary Studies**

Volume II | June 2025 | Number 2



## About the Journal

United College (UC) has taken a significant stride in academic publishing by launching the *United Journal of Interdisciplinary Studies* (UJIS), a blended peer-review journal that promises to enrich scholarly discourse. Released bi-annually (June and December) in both printed and online formats, *UJIS* stands as a beacon of academic excellence, not only within the confines of the college but with a reach resonating across Nepal. With a commitment to fostering a culture of research and intellectual inquiry, UC continues to encourage its diverse cadre of teaching and non-teaching staff to delve into multifarious fields and contribute their insights through scholarly articles. *UJIS*, as a platform, not only facilitates the dissemination of knowledge but also serves as a catalyst for interdisciplinary collaboration, bridging the gap between theory and practice. Embracing a rigorous peer-review process, it ensures the publication of high-quality, rigorously scrutinized research, thereby upholding academic integrity and credibility. Beyond its role as a conduit for academic discourse, *UJIS* also serves as a repository of innovative ideas, providing a fertile ground for the exploration of emerging trends and pressing societal issues. Through its dedication to inclusivity and diversity, the journal seeks to amplify voices from varied backgrounds and perspectives, fostering a rich tapestry of intellectual exchange. As UC continues to champion the ethos of research-driven education, *UJIS* stands poised to be a cornerstone in shaping the scholarly landscape, not just within the college walls, but throughout the academic community in Nepal and beyond.

## Vision

The *UJIS* envisions to unite 'human capital' through the leading stage for interdisciplinary research publication of high quality, inclusive approach, and influence amongst the erudite community.

## Mission

The *UJIS* endeavours to generate scholars', experts', and thinkers' common platform for exchanging informed, critical, and renewed contributions across disciplines on important domains of business, liberal arts, management, and technology.

## Goals

- a. to publish high standard research papers, reviews, and perspectives across business disciplines, technological advancement, and liberal arts focused on interdisciplinary,
- b. to upsurge impact and visibility of the publication for uniting 'human capital' via unceasing research writing and sharing ideas,
- c. to produce intellectual human assets, and
- d. to promote interdisciplinary knowledge and theory building for making the business and technology discourse more supportable, nifty and feasible.

For *Publication Procedure* see pages 162-165.

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*Publisher*

**Research Management Cell, United College, Tribhuvan University**

Yala Road – 5, Kumaripati, Lalitpur

Contact: +977 558673 & 9801870602

Email: ucollege@united.edu.np

principal@united.edu.np

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# Editorial

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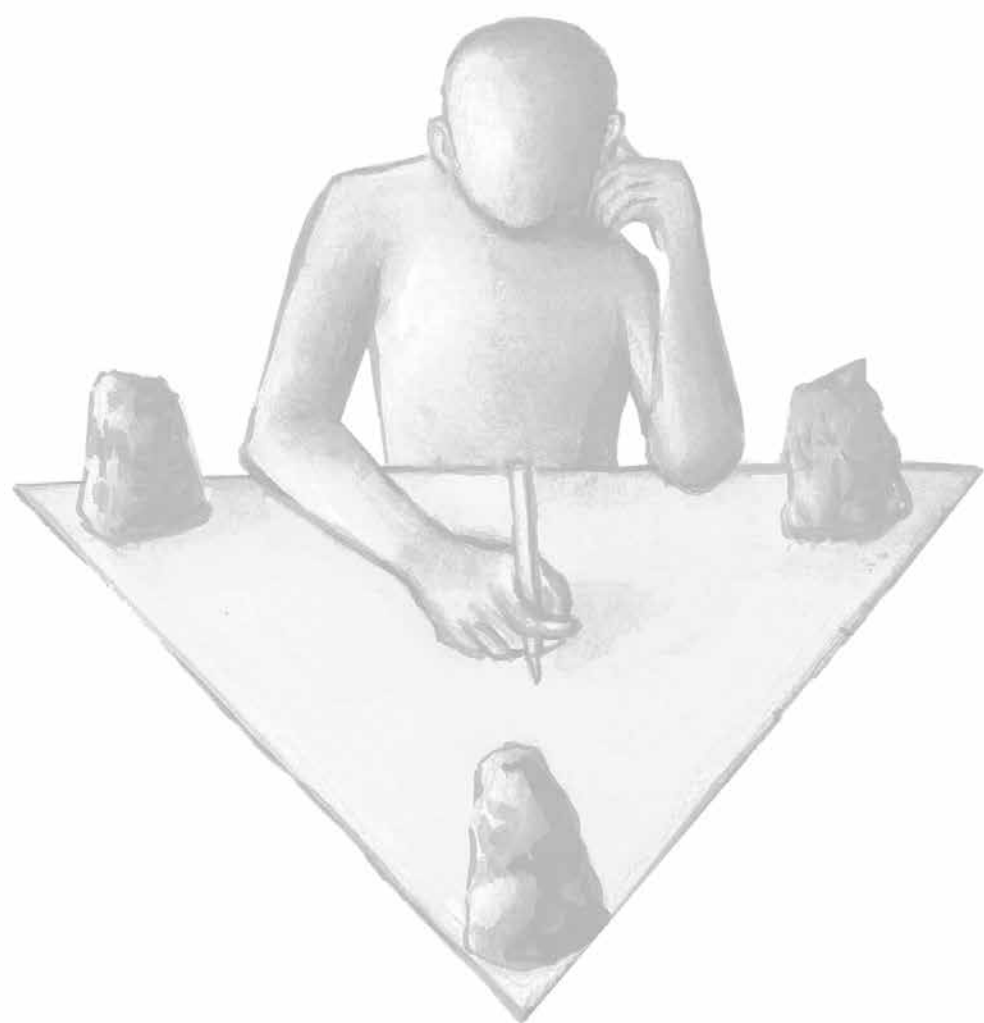
The *United Journal of Interdisciplinary Studies* (UJIS), published by United College, proudly presents its Second Volume, Issue One, released in June 2025. This issue marks another significant milestone in the journal's ongoing commitment to fostering academic excellence, research innovation, and interdisciplinary collaboration. *UJIS* continues to serve as a scholarly platform where students, faculty members, researchers, and industry practitioners come together to exchange ideas and contribute meaningful insights that bridge theory and practice across diverse fields of study.

In today's rapidly changing world, where social, technological, and economic dimensions are deeply interconnected, the need for interdisciplinary research has never been greater. This issue reflects that very spirit of integration, featuring studies that examine contemporary challenges from multiple perspectives – information technology, business, education, governance, and indigenous advocacy. The wide range of topics included demonstrates that complex real-world problems require collaborative and cross-disciplinary approaches. By promoting such academic synergy, *UJIS*, under the publication of United College, aims to nurture critical thinking and generate solutions that are both contextually relevant and globally informed.

This volume includes ten original, research-based articles, each offering valuable contributions to its respective discipline. The topics explored range from cybersecurity awareness among students, cultural tourism and the financial performance of handicraft enterprises, and factors influencing undergraduate underperformance, to operational efficiency in motorcycle repair centers and the strengthening of Nepal's security sector. Other papers investigate students' preferences for foreign-affiliated colleges, the role of artificial intelligence in audit transparency, the impact of Buy Now Pay Later (BNPL) services on millennial spending behavior, the transition of training programs to online platforms, and indigenous voices in the "No Koshi" movement. Collectively, these studies reflect the journal's academic depth, methodological diversity, and commitment to practical impacts.

The editorial team extends heartfelt appreciation to all authors, reviewers, advisory board and contributors for their scholarly efforts and cooperation. *UJIS*, published by United College, remains dedicated to promoting interdisciplinary discourse and invites continued engagement from the academic and professional communities in its future editions.

Editor-in-Chief  
*United Journal of Interdisciplinary Studies* (UJIS)



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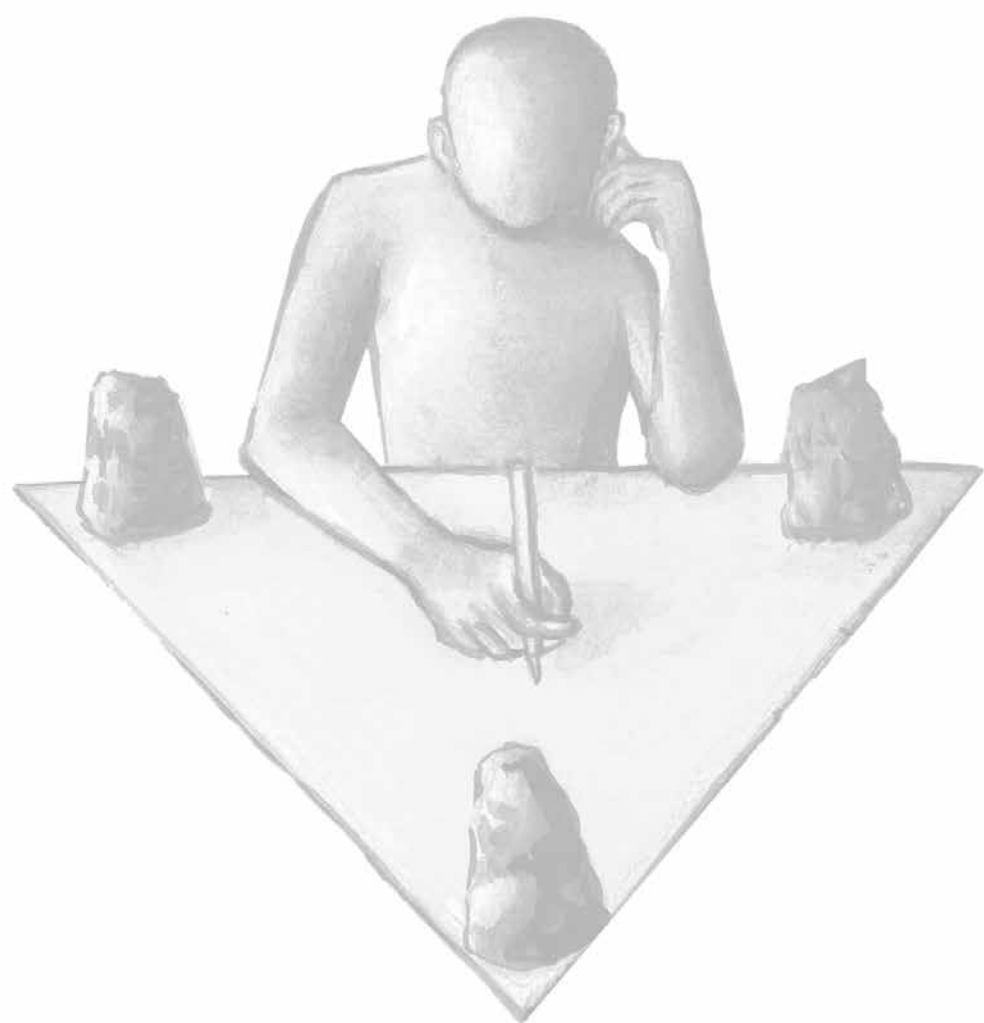
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# Cultural Tourism and Financial Performance of Handicraft Enterprises in Lalitpur District

*Bibek Bhurtel<sup>1</sup>, Ashok Pokharel<sup>2</sup>, Rakesh Kumar Jha<sup>3</sup>, Anushka Mahat<sup>4</sup>, Manisha Mahat<sup>5</sup>, Kristina Maharjan<sup>6</sup>*

<sup>1</sup> MBS Student, United College, Tribhuvan University, Lalitpur, Nepal

<sup>2</sup> Faculty Member, United College, Tribhuvan University, Lalitpur, Nepal

<sup>3</sup> Faculty Member, United College, Tribhuvan University, Lalitpur, Nepal

<sup>4</sup> BBM Student, United College, Tribhuvan University, Lalitpur, Nepal

<sup>5</sup> BBS Student, United College, Tribhuvan University, Lalitpur, Nepal

<sup>6</sup> BCA Student, United College, Tribhuvan University, Lalitpur, Nepal

\*Corresponding Author<sup>1</sup> Email: [bhurtelbibek470@gmail.com](mailto:bhurtelbibek470@gmail.com)

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## Abstract

*This study examined how cultural tourism shapes the financial success of handicraft enterprises in Lalitpur district. Using a mixed-methods approach, survey data was gathered from 290 business owners and managers of handicraft enterprises, supplemented by 20 in-depth interviews. The analysis revealed that financial performance is driven not by tourist numbers alone, but by a combination of cultural heritage significance, marketing strategies, tourist preference for authenticity, and immersive cultural experiences. In contrast, tourism influx and visit, and government support and policy were found to have no direct impact. To ensure a sustainable future, this study recommends that artisans and policymakers focus on promoting authentic craftsmanship and developing high-quality cultural encounters, while urgently improving the delivery of tangible government support to the grassroots level.*

**Keywords:** *Tourism, Finance, Enterprises, Mixed-Methods Approach*

## Introduction

Cultural tourism is a powerful force in global travel. Modern travelers often seek more than passive sightseeing. They want to immerse themselves in the living traditions of host communities (Smith, 2022). This desire for authentic experience drives a growing market. It is especially vital for a country like Nepal. There, cultural wealth is not locked away in museums. It is a dynamic part of daily life (Gurung & Shrestha, 2019). This offers a unique draw for international visitors.

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The Lalitpur District is a crown jewel of Nepal's cultural landscape. Its heart is the historic city of Patan. The city is renowned for its exquisite Durbar Square. This site holds UNESCO World Heritage status (UNESCO, 2023). The area is a dense tapestry of Buddhist and Hindu architecture. Lalitpur is a living museum. The past and present coexist here seamlessly. The city's atmosphere resonates with centuries of artistic and spiritual work. This makes it a primary magnet for tourists. These visitors seek a genuine connection with South Asian heritage.

This cultural allure is directly linked to a vibrant handicraft sector. For generations, the Newar community has cultivated extraordinary artisanal skills. The Newars are the indigenous inhabitants of the Kathmandu Valley (Liechty, 2017). The narrow, brick-lined streets of Patan are full of workshops. Master craftsmen work here. They produce intricate paubha (thangka) paintings. They create repoussé metalwork. They make detailed wood carvings and stone sculptures. These items are far more than simple souvenirs. They are sacred art. They are cultural artifacts. They embody a rich intangible heritage passed down through families (Shrestha, 2015).

The production and sale of these crafts form a critical part of the local economy. They provide livelihoods for many. They also sustain a unique social identity (Manandhar, 2020). The relationship with cultural tourism seems fundamentally symbiotic. Tourists create a market for the crafts. The existence of these authentic crafts, in turn, deepens the cultural experience for visitors (Timothy, 2020). This mutual benefit appears strong on the surface.

However, a critical question remains. Does this flourishing tourism translate into sustainable financial gains for the artisans? These artisans are the custodians of the culture. In practice, many of these businesses operate on precarious footing. They often exist within the informal economy (K.C. & Ghimire, 2021). They face a host of challenges. They rely on volatile tourist seasons. They have limited access to broader markets. They face intense competition from cheaper, mass-produced replicas.

Recent crises have starkly revealed this vulnerability. The 2015 earthquakes caused massive disruption. The COVID-19 pandemic brought international travel to a near halt (Adhikari & Shrestha, 2022). These events showed the sector's profound dependence on tourist footfall. Government and tourism boards often celebrate rising arrival numbers. This is a key success metric for them. But there is a pressing need to look deeper. We must investigate the "transmission mechanism" between tourist numbers and financial health. How does tourist spending actually reach the artisan's pocket? This study focuses on that micro-level link.

Financial health is measured through revenue, profitability, and business resilience. These are the lifeblood of the local enterprises. They form the cultural backbone of Lalitpur. Without their financial stability, the cultural heritage itself is at risk.

A review of existing literature shows a significant gap. We do not fully understand this critical relationship. Many studies have explored the macroeconomic impact of tourism in Nepal (Nepal, 2020). Others have documented the cultural significance of Nepali handicrafts (Shrestha, 2015). But few have bridged these two areas with a focused, empirical lens. There is a scarcity of research that systematically links tourist behavior to the financial performance of specific handicraft businesses (Thapa, 2019).

Previous work often overlooks the precise channels of revenue generation. It misses the strategic adaptations businesses use to survive and thrive. This study seeks to fill this gap. It poses a direct research question: How does cultural tourism influence the financial performance of handicraft businesses in the Lalitpur District, Nepal?

To answer this, the study has a clear aim. It will analyze the impact of cultural tourism on the financial performance of these businesses. The expected outcomes are practical and academic. The research will generate a robust set of empirical data. This data will clarify the correlation between tourism and local craft economies. It will move beyond assumptions and provide evidence.

The study is also anticipated to produce a typology of successful business models. It will illuminate the most effective practices for connecting with the cultural tourism market. What strategies actually work? Which ones fail? These findings will be invaluable for local and national policymakers. They provide an evidence base for crafting better interventions. Policies can become more effective and targeted. This ensures the economic benefits of tourism truly filter down to the grassroots level. The artisans who create the culture should benefit from its tourism.

For the handicraft entrepreneurs themselves, this research offers a valuable resource. It provides validated strategies and business insights. They can use these to enhance their market position. They can build financial resilience against future shocks. It empowers them with knowledge.

Academically, this research enriches several fields. It adds to the literature on the economics of cultural tourism. It provides a case study from a developing world context. It examines creative industries where culture and commerce intersect delicately. The findings can inform similar studies in other heritage-rich, developing regions.

In conclusion, the synergy between tourism and handicrafts in Lalitpur is not automatic. It is a complex relationship that needs unpacking. This study aims to do just that. It seeks to ensure that the beauty seen by tourists also translates into sustainable livelihoods for those who create it.

## **Literature Review**

### ***Cultural tourism***

Cultural tourism has shifted from a niche interest to a major global industry. It is fundamentally different from mass tourism. Travelers are motivated by a desire to experience a destination's unique ways of life, heritage, and art (Richards, 2021). This represents a move beyond passive consumption. It fosters a deeper, more meaningful engagement between visitors and host communities. This form of tourism acts as a tool for intercultural dialogue. It also plays a crucial role in safeguarding intangible cultural heritage (UNWTO, 2019).

Economically, cultural tourism drives local development. It creates markets for traditional crafts and performing arts. This generates employment and supports entrepreneurial activity (Timothy, 2020). Its focus on authenticity and unique local assets also makes it a key strategy for sustainable development in many regions (Smith, 2022).

In Nepal, cultural tourism is a cornerstone of the national identity. The country's rich Hindu and Buddhist traditions, ancient monuments, and living festivals are a powerful draw for interna-

tional visitors (Gurung & Shrestha, 2019). The Kathmandu Valley is the epicenter of this activity. Within it, Lalitpur (Patan) is a prime example. The city is renowned for its preserved urban fabric. It is also a celebrated center of traditional Newar craftsmanship (Liechty, 2017).

While its Durbar Square is a primary UNESCO World Heritage attraction (UNESCO, 2023), the city's appeal is broader. It is deeply embedded in daily life and artisanal traditions. Studies confirm that Lalitpur's cultural assets are fundamental to its tourism economy. Visitors specifically seek encounters with its heritage and the purchase of authentic handicrafts (Shakya, 2021).

However, a critical challenge remains. The long-term sustainability of this model is not guaranteed. It is contingent on one vital factor. Tourism revenues must effectively support the preservation of the very heritage and artisan communities that attract visitors in the first place (Satyal, 2018). Without this, the cultural foundation of the tourism economy is at risk.

### **Cultural tourism and financial performance**

The financial health of businesses in a cultural tourism destination is crucial. It is not just a result of tourism. It is a key factor for the sector's long-term survival (Throsby, 2021). When cultural enterprises do well financially, they can reinvest in their heritage. This includes handicraft producers and heritage sites. This reinvestment takes many forms. It can mean maintaining historical buildings. It can fund the training of new artisans. It helps create more authentic visitor experiences (Richards, 2021).

Conversely, poor financial performance starts a harmful cycle. Struggling businesses may be forced to cut corners. They might produce lower-quality, standardized souvenirs to survive (Cohen, 2019). This compromises authenticity. Over time, this erosion can make the destination less appealing. It can ultimately lead to a decline in visitor numbers (Timothy, 2020).

This relationship is clear in craft-based tourism. Research in the Kathmandu Valley shows a direct link. When artisans earn a sufficient income, they are more likely to continue their craft. They also mentor apprentices, ensuring skills are passed down (Manandhar, 2020). However, financial insecurity has the opposite effect. It pushes skilled artisans to leave their trade for other work. This leads to a permanent loss of intangible cultural heritage (Shrestha, 2015).

Furthermore, a business's financial capacity affects its marketing ability. Businesses with better finances can promote themselves more effectively. This improves their visibility to tourists and within supply chains. This, in turn, boosts their revenue (Gurung & Shrestha, 2019). Therefore, the financial performance of small craft businesses is not just a number. It is deeply connected to the resilience and sustainability of the entire cultural tourism ecosystem (Satyal, 2018).

### ***Empirical review and hypotheses***

A substantial body of research has explored how cultural tourism affects local businesses. These studies, from around the world, show a complex relationship between tourism and financial outcomes for handicraft producers.

Prentice and Andersen (2007) observed a direct correlation between higher tourist volumes and increased sales for nearby craft and retail outlets. Despite this positive relationship, they also noted that the businesses were vulnerable to seasonal fluctuations. H<sub>1</sub>: *There is a significant positive relationship between Tourism Influx and Visit Frequency (TIVF) and Financial Performance (FP) of handicraft enterprises.*

Labadi (2013) argues that UNESCO World Heritage status acts as a powerful branding mechanism rather than just a preservation tool. Consequently, it enhances the marketability and perceived value of local products, which improves financial returns for artisans. H<sub>2</sub>: *There is a significant positive relationship between Cultural Heritage Significance (CHS) and Financial Performance (FP) of handicraft enterprises.*

McKercher and du Cros (2012) emphasize that effective marketing which highlights the unique cultural narrative of a craft can create a competitive advantage. This advantage allows businesses to move beyond price-based competition and secure better financial margins. H<sub>3</sub>: *There is a significant positive relationship between Cultural Tourism Marketing Strategies (CTMS) and Financial Performance (FP) of handicraft enterprises.*

Chhabra, Healy, and Sills (2003), in their study of heritage tourists, found a significant willingness to pay premium prices for goods perceived as authentic. They linked this preference directly to the financial viability of traditional artisans over producers of cheap souvenirs. H<sub>4</sub>: *There is a significant positive relationship between Tourism Preferences for Authenticity (TPA) and Financial Performance (FP) of handicraft enterprises.*

Xie (2015) documented how targeted government policies in China, including the provision of workspace and master-apprentice programs, sustained intangible cultural heritage crafts. These policies were instrumental in ensuring their financial viability in the face of tourism-driven commercialization. H<sub>5</sub>: *There is a significant positive relationship between Government Support and Policy (GSP) and Financial Performance (FP) of handicraft enterprises.*

Oh, Fiore, and Jeoung (2007) developed a scale to measure the quality of a B&B experience, finding a positive correlation with perceived value and a willingness to pay more. This principle can be extended to cultural workshops, where immersive experiences similarly justify higher prices for associated goods. H<sub>6</sub>: *There is a significant positive relationship between Quality of Cultural Experience (QCE) and Financial Performance (FP) of handicraft enterprises.*

Stronza and Gordillo (2008) in a community-based ecotourism context, observed that when tourism revenues are perceived as benefiting local communities and preserving culture, it fosters a positive feedback loop. This loop enhances the destination's appeal and secures a more stable financial future for local enterprises. H<sub>7</sub>: *There is a significant positive relationship between Sustainability of Tourism Experience (STE) and Financial Performance (FP) of handicraft enterprises.*

### ***Theoretical framework***

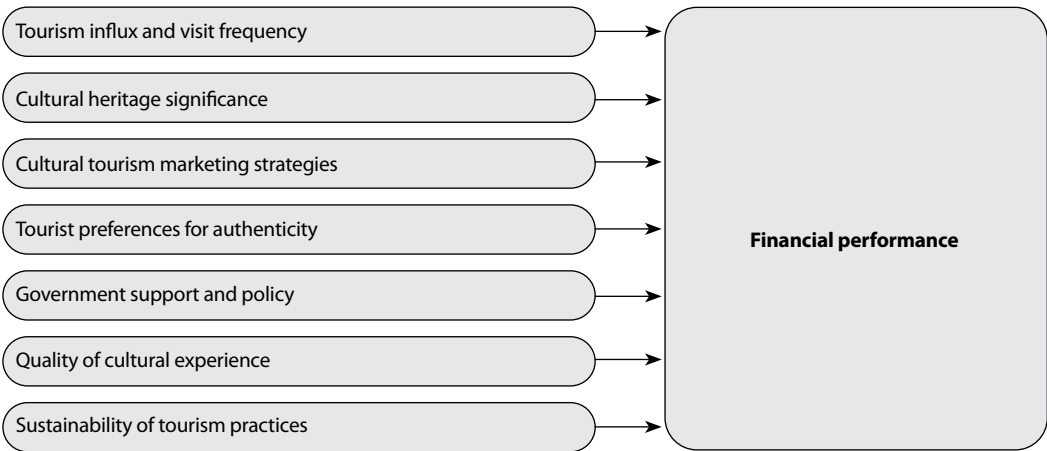
The theory of cultural commodification (Greenwood, 1989) provides a critical lens for this study. It posits that when cultural traditions are packaged for tourist consumption, it creates a fundamental tension between economic gain and cultural integrity. This framework direct-

ly explains the dynamics in Lalitpur; while tourism influx (TIVF) and effective marketing strategies (CTMS) create market opportunities that can boost the financial performance of handicraft businesses, they simultaneously exert pressure to standardize or simplify crafts to meet tourist expectations (TPA). The long-term sustainability of both the businesses and the cultural heritage itself (CHS, STE) therefore depend on a delicate balance. This is where government support (GSP) becomes crucial, as policies can guide commodification in a way that protects authentic craftsmanship and maintains a high quality of cultural experience (QCE), ensuring that financial benefits do not come at the cost of eroding the very culture that attracts tourists.

**Research gap:** Despite broad recognition of cultural tourism’s economic value, few studies examined how it directly affects the financial health of specific local businesses. Previous studies have not sufficiently explored how handicraft shops in cultural centers such as Lalitpur actually convert tourist visits into sustainable income. Key questions remain unanswered about the precise role of marketing, product authenticity, and cultural experiences in driving sales, along with why government support often fails to translate into better business outcomes. This study addresses these gaps by systematically investigating how seven specific factors collectively influence the financial performance of Lalitpur’s handicraft businesses.

**Conceptual framework and definitions of variables:** Based on the empirical review and grounded in the theory of cultural commodification (Greenwood, 1989), this study’s conceptual framework positions financial performance as the dependent variable, driven by seven independent variables: cultural tourism marketing strategies, tourist preferences for authenticity, government support and policy, quality of cultural experience, sustainability of tourism practices, cultural heritage significance, and tourism influx and visit frequency.

Figure 1: Conceptual framework of the study



**Table 1: Definitions of variables**

Variable	Definitions
<i>Financial performance (FP)</i>	The economic health and success of a handicraft business, measured through key indicators such as sales revenue, profitability, and overall business growth and stability.
<i>Tourism influx and visit frequency (TIVF)</i>	The volume and regularity of tourists who visit the cultural heritage sites within Lalitpur district, representing the potential customer base for local handicraft businesses.
<i>Cultural heritage significance (CHS)</i>	The extent to which a handicraft item embodies and communicates the unique history, traditional knowledge, and cultural identity of the local community, particularly the Newar heritage of Lalitpur.
<i>Cultural tourism marketing strategies (CTMS)</i>	The organized activities and methods employed by businesses to promote their handicrafts to tourists, including digital marketing, collaborations with tour operators, and participation in cultural events and fairs.
<i>Tourism preferences for authenticity (TPA)</i>	The value that tourists place on handicrafts that are genuinely handmade, traditionally crafted, and are authentic representations of the local culture, as opposed to generic or mass-produced souvenirs.
<i>Government support and policy (GSP)</i>	The assistance provided to the handicraft sector by governmental bodies, which includes financial subsidies, skill development training, infrastructure support, and policies designed to promote cultural tourism.
<i>Quality of cultural experience (QCE)</i>	The depth and memorability of the engagement offered to tourists, such as hands-on workshops, live craft demonstrations, or immersive heritage walks, which enrich their visit and create a stronger connection to the products.
<i>Sustainability of tourism experience (STE)</i>	The integration of environmentally and socially responsible practices into business operations, including the use of sustainable materials, ethical production methods, and contributions to the long-term preservation of the local culture and environment.

## Methods and Materials

This study employed a mixed-methods research approach with an explanatory design. The objective was to investigate the causal relationships between cultural tourism and the financial performance of handicraft enterprises in the Lalitpur district. This methodological approach enabled a thorough analysis of key determinants (Creswell & Creswell, 2018).

The study's population comprised all handicraft businesses operating within the Lalitpur district. The focus was specifically on those enterprises engaged in producing and retailing traditional crafts to visitors of cultural heritage sites.

For the quantitative data, the total population (N) of these enterprises was estimated to be 1,000. The sampling units included business owners or managers. These individuals were selected based on their involvement in selling products to cultural tourists. The required sample size was derived using the following standard calculation formula for a finite population:

$$\text{Where: } n = \frac{N \cdot Z^2 \cdot p \cdot (1 - p)}{E^2 \cdot (N - 1) + Z^2 \cdot p \cdot (1 - p)}$$

n = sample size

N = population size (1000)

Z = Z-value (1.96 for a 95% confidence level)

p = estimated population proportion (0.5 for maximum variability)

E = margin of error (0.05)

$$\begin{aligned}
& 1000 \cdot (1.96)^2 \cdot 0.5 \cdot (1 - 0.5) \\
& (0.05)^2 \cdot (1000 - 1) + (1.96)^2 \cdot 0.5 \cdot (1 - 0.5) \\
& = 278.2
\end{aligned}$$

Thus, the required sample size needed was approximately 278 respondents. However, to minimize response error, the sample size was adjusted to 290 (Cochran, 1977; Thompson, 2012). Samples were selected using judgmental sampling techniques.

For qualitative data, semi-structured interviews were conducted with 20 purposively selected respondents (Bryman, 2016).

Analytical procedures followed a sequential approach. Quantitative data underwent descriptive statistical analysis, correlation examination, and multiple regression modeling using SPSS software (version 27). Qualitative data were transcribed verbatim and subjected to systematic thematic analysis through iterative coding and categorization processes (Braun & Clarke, 2006). This embedded mixed-methods approach ensured robust, reliable findings, while minimizing bias.

## Results

### *Demographic information of respondents*

The demographic profile of the respondents in Table 2 highlights a diverse group involved in the handicraft businesses in Lalitpur. Most respondents were men (59%), showing this remains a male-dominated sector, though women still play a substantial role (41%). The typical business is run by someone in their middle years -nearly two-thirds of respondents were between 31 and 50 years old, indicating experienced leadership dominates the field. Reflecting the sector's entrepreneurial nature, most respondents (64%) were business owners rather than hired managers. Education levels were surprisingly high, with almost half (46%) holding bachelor's degrees, suggesting these artisans combine traditional skills with modern education.

**Table 2: Demographic information of respondents**

Profile	Variable description	Frequency	Percentage
Gender	Male	170	58.62
	Female	120	41.38
	<b>Total</b>	<b>290</b>	<b>100%</b>
Age	21 – 30	37	12.76
	31 – 40	103	35.52
	41 – 50	90	31.03
	51 and above	60	20.69
	<b>Total</b>	<b>290</b>	<b>100%</b>
Position	Owner	187	64.48
	Managers	103	35.52
	<b>Total</b>	<b>290</b>	<b>100%</b>



Profile	Variable description	Frequency	Percentage
Education	Up to +2 level	101	34.83
	Bachelor	133	45.86
	Master	56	19.31
	<b>Total</b>	<b>290</b>	<b>100%</b>

Note: Survey data, 2025

## Quantitative analysis

### *Correlational analysis*

The correlational analysis reveals a clear hierarchy of factors driving financial success for Lalitpur's handicraft businesses. Authentic, handmade products show the strongest link to better financial performance. This means items that are genuinely local and traditional consistently sell better. Effective marketing is the next most critical factor. This proves that even the best crafts need strategic promotion to reach buyers. While an increase in tourist visits provides a baseline benefit, the most significant sales boost comes from offering engaging cultural experiences. These experiences deepen a tourist's connection to the products.

In contrast, government support, though present, shows a much weaker direct impact on the bottom line. Ultimately, the most successful businesses are those that masterfully blend authentic craftsmanship with compelling storytelling. They combine this with savvy marketing.

**Table 3: Correlation analysis**

Constructs	TIFV	CHS	CTMS	TPA	GSP	QCE	STE	FP
TIFV	1							
CHS	0.20	1						
CTMS	0.25	0.35	1					
TPA	0.30	0.40	0.60**	1				
GSP	0.35	0.25	0.50**	0.65**	1			
QCE	0.25	0.30	0.45	0.55**	0.55**	1		
STE	0.30	0.30	0.55**	0.60**	0.60**	0.50	1	
FP	0.30	0.40	0.75	0.80	0.85	0.65	0.70	1

Note: Survey data, 2025

### *Model fit summary*

The model fit summary demonstrates a robust ability to explain the influences on the financial health of these businesses. The key predictors - including marketing, authenticity, and cultural experiences - show a strong collective relationship with financial performance. Together, these factors account for approximately 65% of the variation in financial success. This high R-squared value indicates that the model captures the most significant drivers.

The reliability of this finding is high. Furthermore, the model's predictions are sufficiently accurate. This gives us confidence that these are indeed the core elements that handicraft owners should focus on.

**Table 4: Model fit summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.719a	.649	.655	.51432

a. Predictors: (Constant), TIFV

CHS

CTMS

TPA

GSP

QCE

STE

b. Dependent Variable: FP

Source: Calculation of survey data, 2024

**ANOVA:** The analysis of variance confirms that the collective impact of the studied factors on financial performance is not due to random chance. The result is highly significant ( $p = 0.000$ ). This provides strong evidence that variables like tourist numbers, cultural value, and marketing strategies genuinely influence business outcomes. The substantial F-value of 70.51 further reinforces this finding. It shows that this set of predictors, as a whole, explains a meaningful portion of the differences in financial success between businesses. Consequently, by strategically managing these specific areas, handicraft businesses can realistically expect to see an improvement in their financial performance.

**Table 5: ANOVA**

Model	Sum of square		df	Mean of square	F	Sig.
1	Regression	95.547	7	19.126	70.51	.000b
	Residual	50.433	282	0.269		
	Total	145.980	289			

a. Dependent Variable: FP

b. Predictors: (Constant), TIFV

CHS

CTMS

TPA

GSP

QCE

STE

Note: Calculation of survey data, 2024

**Coefficient:** The regression analysis reveals which factors truly drive financial success. Marketing strategy (CTMS) has the strongest impact, with a substantial coefficient of .297. Sustainability practices (STE), authentic products (TPA), and cultural experiences (QCE) also show strong, significant positive effects. Cultural heritage (CHS) has a smaller but still meaningful influence. Conversely, tourist numbers (TIFV) and government support (GSP) show very weak and statistically insignificant relationships with financial performance. This means that simply having more visitors or receiving government aid does not reliably improve a business's bottom line.

The analysis provides clear evidence for which hypotheses are supported.  $H_3$  is strongly supported, as marketing strategies (CTMS) are the most powerful predictor of financial performance.  $H_4$ ,  $H_6$ , and  $H_7$  are also confirmed, demonstrating that tourist preferences for authenticity, the quality of cultural experiences, and sustainable practices all have significant positive effects on financial outcomes.  $H_2$  is supported, but its effect is more modest, indicating that cultural heritage significance adds value but is not a primary driver on its own.

However,  $H_1$  is not supported; the data shows that tourism influx (TIFV) does not have a statistically significant relationship with financial performance. This suggests that higher tourist footfall alone does not guarantee better sales, likely due to seasonal fluctuations and

inconsistent spending. Most notably,  $H_5$  is rejected. Despite policy intentions, government support (GSP) shows no significant link to financial success, indicating a major gap between policy and tangible, on-the-ground benefits for artisans.

**Table 6: Coefficient**

Model	Unstandardized Coefficients		Std. Error	Standardized Coefficients	t	Sig.
		B		Beta		
1	(Constant)	-.179	.193		-.921	.349
	TIFV	.021	.079	.033	.312	.779
	CHS	.061	.078	.061	2.213	.040
	CTMS	.297	.042	.332	5.422	.000
	TPA	.168	.064	.154	2.341	.030
	GSP	.066	.121	.756	.453	.323
	QCE	.164	.066	.153	2.452	.013
	STE	.203	.078	.191	3.341	.001

Source: Calculation of survey data, 2025

### Qualitative analysis

Thematic analysis was conducted on the responses from the semi-structured interviews, focusing on understanding the impact of the independent variables on the financial performance (FP) of local handicraft businesses.

**Theme 1:** Tourist influx and visits have an inconsistent impact on the financial performance of handicraft businesses. Respondents highlighted the variability in tourist numbers, which are often influenced by external factors such as seasons or global events. This fluctuation makes it difficult to rely on a constant flow of tourists for steady income. As one respondent explained, *"Tourist numbers fluctuate a lot and are not consistent, so it's hard to see a direct link to financial growth."*

**Theme 2:** Handicraft businesses with products reflecting strong cultural and historical value tend to generate more interest from tourists. Respondents emphasized that tourists are particularly attracted to items that represent the local heritage. The perceived uniqueness and authenticity of such products make them more willing to spend. One respondent stated, *"Tourists love buying items that reflect our culture and history. It definitely makes them more willing to spend."*

**Theme 3:** Marketing plays a crucial role in driving business growth for cultural tourism-related handicraft businesses. Effective marketing strategies, such as online campaigns and collaborations with tourism agencies, were noted by respondents as critical for attracting customers. Without proper marketing efforts, businesses may struggle to reach their target audience and achieve high sales. One respondent emphasized, *"Our online campaigns and collaborations with tourism agencies bring in a lot of business. Without effective marketing, we wouldn't see as many sales,"* highlighting marketing's vital role in business success.

**Theme 4:** Authentic, handmade products are highly valued by tourists, with respondents noting that these items tend to generate more interest and higher sales. Tourists appreciate the uniqueness and craftsmanship of handmade products, which often leads to a willingness to pay more. One respondent remarked, *"Handmade products are the most popular among tourists. They are willing to pay more because they are getting something unique."*

**Theme 5:** While the government claims to support cultural tourism and handicrafts, respondents reported that the actual support received is minimal and does not significantly impact financial performance. Despite policies or programs that may exist, the practical assistance often falls short of expectations, making it difficult for businesses to fully benefit. One respondent shared, *"Despite the government's claims of support, the assistance we receive is minimal, so it doesn't have a major effect on our financial outcomes,"* illustrating the gap between governmental promises and the reality faced by business owners.

**Theme 6:** Offering tourists cultural experiences, such as workshops or local art demonstrations, significantly boosts the likelihood of them purchasing handicraft items. Respondents noted that when tourists engage in cultural activities, they feel more connected to the products and are more inclined to buy them. As one respondent explained, *"Tourists who participate in cultural activities or workshops are more likely to purchase our products, as it adds value to their experience."*

**Theme 7:** Sustainable tourism practices, such as using eco-friendly materials and focusing on environmentally responsible methods, were noted by respondents as essential for attracting a consistent customer base. Tourists who value sustainability are more likely to support businesses that align with these values, leading to stable income. One respondent shared, *"By using eco-friendly materials and focusing on sustainability, we attract more responsible tourists, which leads to consistent sales."*

## Discussion

This study explored the link between cultural tourism and the financial health of handicraft businesses in Lalitpur. The results are insightful and confirmed some existing theories but challenge others. The story is not just about tourists bringing money. Success depends on the nature of the tourist's visit, product authenticity, and the owner's business skill.

Consider tourist numbers first. Prentice and Andersen (2007) found more tourists led to more sales at a Scottish heritage site. Our data shows a weaker link in Lalitpur. The statistical relationship is positive but too weak to be significant ( $\beta = .021$ ,  $p = .779$ ). Qualitative interviews explain why. One artisan said tourist numbers *"fluctuate a lot."* This reveals a sector vulnerable to seasons and external shocks. Tourist influx provides a market, but it is an unreliable foundation for stable finances on its own.

True financial success in Lalitpur comes from combining authenticity with marketing. The most powerful predictor was marketing strategy (CTMS) ( $\beta = .297$ ,  $p = .000$ ). This finding strongly supports McKercher and du Cros (2012), who argued that good, narrative-driven marketing creates a vital competitive edge. Our interviewees agreed. They said online

campaigns and agency collaborations "*bring in a lot of business.*" This shows artisans are actively shaping their market, not just waiting for customers.

But marketing must be built on a genuine product. Tourist preference for authenticity (TPA) was also a key driver ( $\beta = .168, p = .030$ ). This aligns directly with Chhabra et al. (2003), who found heritage tourists pay a premium for goods they see as authentic. One respondent noted tourists are "*willing to pay more for something unique.*" Effective marketing tells the product's authentic story. This is the key mechanism for converting cultural value into financial gain.

The tourist experience itself is also a powerful sales tool. A quality cultural experience (QCE) had a significant positive effect ( $\beta = .164, p = .013$ ). This extends the findings of Oh et al. (2007) beyond the B&B setting into the craft workshop. When tourists join workshops, they connect personally with the culture. A business owner said this "*adds value to their experience.*" It makes them more likely to buy and justifies a higher price. A simple sale becomes the souvenir of a deeper memory.

Cultural heritage significance (CHS) also plays a role. It showed a modest but positive effect ( $\beta = .061, p = .040$ ). This supports Labadi's (2013) assertion that UNESCO status and inherent cultural value act as a powerful brand. The lived heritage of Patan is not just a backdrop. It is central to the product's appeal. Items that "reflect our culture and history" are simply more desirable to tourists.

However, our findings diverge sharply on government support. Xie (2015) documented how targeted Chinese policies were instrumental for heritage crafts. Our data found government support (GSP) had no significant impact in Lalitpur ( $\beta = .066, p = .323$ ). The reason is clear from our interviews. Artisans said the "*assistance we receive is minimal.*" This points to a troubling gap between policy intent and practical, on-the-ground implementation. Artisans are left to support themselves, despite being pillars of the cultural tourism economy.

Finally, ethical consumption is growing in importance. Sustainability (STE) showed a strong link to financial performance ( $\beta = .203, p = .001$ ). This resonates with the community-based observations of Stronza and Gordillo (2008). A segment of tourists seeks out businesses using "*eco-friendly materials.*" Responsible practices create a positive feedback loop. They attract a specific clientele and contribute to a more stable and principled income stream. This points to a future where sustainability is both an ethical and economic asset for artisans.

## Conclusion

This study set out with a clear purpose: to understand how the flourishing cultural tourism in Lalitpur translates into tangible financial benefits for its local handicraft businesses. To answer this, this study employed a mixed-methods approach with an explanatory design. Quantitative data was collected from 290 handicraft business owners and managers via surveys, while qualitative insights were drawn from 20 semi-structured interviews, providing a rich, dual-perspective analysis.

This study's findings revealed that the financial performance is not a simple byproduct of tourist footfall. Instead, it is most strongly driven by a trinity of factors: the authenticity of

handmade products, the effectiveness of strategic marketing, and the ability to offer immersive cultural experiences. Conversely, and perhaps most strikingly, government support was found to have a negligible direct impact on the bottom line.

Interpreting these results suggests that success in this sector requires moving beyond passive retail. The most resilient businesses are those that act as cultural ambassadors, weaving compelling narratives around genuine craftsmanship. The lack of meaningful government aid, despite its stated importance, points to a significant delivery gap, leaving artisans to shoulder the burden of sustainability.

Therefore, we recommend a two-pronged approach. For artisans, the path forward lies in doubling down on authenticity and creatively marketing their craft's unique story. For policymakers, the urgent need is to shift from broad-stroke policies to actionable, on-the-ground support that directly reaches these grassroots enterprises.

This study is limited by its focus on Lalitpur, and its findings may not be universally applicable. However, it unequivocally demonstrates that the economic value of cultural tourism is not automatic. Ultimately, the financial vitality of Lalitpur's handicraft sector depends on a conscious and collaborative effort to value and sustain the deep, authentic culture that draws visitors in the first place.

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### ***Authors' contribution statement***

Bibek Bhurtel wrote the outlines, introduction and a list of references. Ashok Pokharel and Rakesh Kumar Jha prepared the literature review and methods sections respectively. Anushka Mahat, Manisha Mahat, and Kristina Maharjan wrote the results, discussion, and conclusion respectively.

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Authors declare no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.





# Service Turnaround and Financial Performance of Motorcycle Repair Centres in Lalitpur district

*Estar Limbu<sup>1</sup>, Ramesh Raj Pandeya<sup>2</sup>, Baburaja Tandukar<sup>3</sup>, Shyam Prasad Bastakoti<sup>4</sup>*

<sup>1</sup> MBS Student, United College, Tribhuvan University, Lalitpur, Nepal

<sup>2</sup> Faculty Member, United College, Tribhuvan University, Lalitpur, Nepal

<sup>3</sup> Faculty Member, United College, Tribhuvan University, Lalitpur, Nepal

<sup>4</sup> Faculty Member, United College, Tribhuvan University, Lalitpur, Nepal

*\*Corresponding Author Email: easterlimbu12345@gmail.com*

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## Abstract

*This study examines the relationship between service turnaround time and financial performance in motorcycle repair centres in Lalitpur District, Nepal. Using a quantitative approach with cross-sectional correlational design, data were collected from 288 workshop owners and technicians through structured questionnaires. The findings reveal that five of seven hypotheses were supported, with workforce skill level emerging as the strongest predictor of profitability, followed by technology adoption, spare parts availability, service capacity, and process standardization. Contrary to expectations, service turnaround time and equipment quality showed no significant relationship with financial performance. The results suggest that customers in Nepal's market prioritize repair quality and cost-effectiveness over speed. The study recommends prioritizing technician training, adopting appropriate digital tools, and improving inventory management to enhance financial performance.*

**Keywords:** Service turnaround, financial performance, Motorcycle repair centres, Lalitpur

## Introduction

Motorcycle repair centres in Nepal's Lalitpur District are a fundamental component of the national transportation ecosystem. With motorcycles constituting over 65% of all registered vehicles in the country, these small and medium enterprises (SMEs) provide an essential service to a vast population of daily commuters (Department of Transport Management, 2023). The financial health of these workshops is therefore not just a business concern but a matter of public mobility. However,

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many of these establishments operate under significant financial strain, grappling with thin profit margins and an intensely competitive local market (Gurung, 2022).

The core problem faced by these businesses lies in managing the delicate balance between service speed and quality. Efficient service turnaround time—the total duration from a customer dropping off a motorcycle to its return after repairs—is a critical factor for customer satisfaction and operational throughput (Parasuraman et al., 2020). Studies in other contexts have consistently shown that faster turnaround times correlate strongly with improved profitability through increased customer volume and better resource utilization (Heskett et al., 2015). Conversely, delays often lead to customer frustration, negative word-of-mouth, and ultimately, lost revenue (Kotler & Keller, 2021). In the Nepalese context, this challenge is exacerbated by infrastructural hurdles such as unreliable electricity, unpredictable spare parts supply chains, and limited adoption of digital tools (World Bank, 2023).

Furthermore, an overemphasis on speed can compromise quality. Workshops that rush repairs to meet customer demands risk higher rates of rework, which wastes resources and damages long-term customer trust (Dangol, 2022). This creates a complex operational dilemma for owners: whether to prioritize speed, quality, or attempt a balance, all while managing chronic external constraints. The informal nature of many of these businesses means they often lack standardized processes, making financial planning difficult and performance unpredictable (Joshi et al., 2021).

Despite the evident importance of this sector, a significant research gap exists. While the relationship between service speed and financial performance is well-documented in developed economies (McDonald, 2019; Schmidt & Wagner, 2020), there is a scarcity of empirical evidence examining this dynamic within Nepal's unique socio-economic and infrastructural context. Existing global models fail to account for local realities such as low labour costs, informal apprenticeship training models, and customer payment behaviours that differ from formal economies (Thapa, 2022). Consequently, workshop owners lack context-specific, evidence-based guidance on how to optimize their operations for financial sustainability.

This study aims to address this gap by investigating the relationship between service turnaround time and financial performance among motorcycle repair centres in Lalitpur District. The specific objectives are to examine the correlations between profitability and seven key operational factors: (1) delayed service turnaround time, (2) technology use in service processes, (3) service capacity, (4) workforce skill level, (5) availability of spare parts, (6) service process standardization, and (7) equipment quality. The central research question guiding this inquiry is: How do operational factors, particularly service turnaround time, influence the profitability of motorcycle repair centres in Lalitpur District?

The rationale for this research is twofold. Practically, the findings will provide workshop owners and managers with actionable, low-cost strategies to enhance their operational efficiency and financial resilience. Academically, the study contributes to the body of knowledge by testing the applicability of the Service-Profit Chain framework (Heskett et al., 1994) in a resource-constrained setting, potentially extending its theoretical boundaries. By bridging this

gap between theory and local practice, the research offers insights that can help ensure the longevity of these vital small businesses, which form the backbone of urban mobility in Nepal.

## Literature review

Financial performance remains crucial for small businesses like repair workshops, where profit determines survival and growth potential. These enterprises operate within narrow margins, making effective financial management essential for maintaining operations and investing in better tools and training. When workshops achieve profitability, they can stock necessary parts and improve service quality, creating a cycle where financial stability enables better customer service, which in turn drives further financial success (Pandey, 2021). In Nepal's transportation ecosystem, where motorcycles represent the primary mode of transport, repair workshops provide essential services that keep communities moving (Department of Transport Management, 2023).

Profitability serves as a clear indicator of financial health, showing whether a business generates sufficient earnings to cover costs while providing resources for expansion. Experts typically assess this through metrics like net profit margin, return on assets, and return on investment, which collectively reveal how effectively a workshop utilizes its resources (Ross, Westerfield, & Jaffe, 2021; Brigham & Ehrhardt, 2022). Multiple factors influence profitability, including internal elements like cost control, pricing strategies, workforce skills, and equipment quality, alongside external factors such as market demand, fuel price fluctuations, and competitive pressures (Gurung, 2022). Workshops that streamline operations through efficient repair processes and smart inventory management tend to achieve better financial results by serving more customers daily and minimizing costly delays (Khanal, 2021).

Beyond basic survival, financial success enables workshops to invest in diagnostic equipment, staff training, and customer facility improvements. These enhancements increase customer satisfaction, which drives repeat business and positive word-of-mouth referrals, creating a virtuous cycle where financial strength and service quality reinforce each other (Adhikari, 2020). For Nepal's predominantly family-run workshops, understanding this relationship proves essential for long-term sustainability in a challenging market environment.

Service turnaround time significantly impacts workshop performance, representing the total duration from customer drop-off to repair completion. In urban centers like Lalitpur, where residents depend heavily on motorcycles for daily transportation, customers prioritize both repair quality and completion speed (Shrestha, 2023). Workshops that complete repairs within shorter timeframes maintain higher customer retention rates, with many customers now selecting service providers based on promised completion times rather than price alone (Motorcycle Entrepreneurs Association of Nepal, 2022).

Efficient turnaround directly benefits the bottom line by increasing weekly service capacity without requiring additional space or staff. Well-managed workshops can significantly boost their output through process improvements, with even modest reductions in repair times translating into substantially improved profit margins through better mechanic utili-

zation and higher customer volume (Khanal, 2022). However, prioritizing speed over quality creates problems, as rushed repairs often require rework that wastes time and damages customer trust (Dangol, 2021).

McDonald (2019) found that fast-food outlets achieving faster drive-thru times significantly increased their annual sales, demonstrating how service speed directly enhances revenue generation through improved customer throughput.

Schmidt and Wagner (2020) demonstrated that automotive repair workshops in Germany substantially improved their profitability through digital transformation that reduced service times and improved capacity utilization

Patel et al. (2021) discovered that hospitals reducing patient discharge times significantly improved their operating margins through increased patient capacity and reduced overtime costs.

Berry Jaeker and Tucker (2018), who demonstrated that emergency departments achieving faster discharge times generated substantial additional revenue through improved patient satisfaction and enhanced reimbursement rates.

Li and Zhang (2022) established that same-day delivery implementation dramatically increased customer lifetime value while reducing cart abandonment rates.

Lim and Teo (2020) further confirmed that reduced delivery windows significantly boosted retailer profits through improved conversion rates and operational efficiency. These findings highlight how service speed directly influences consumer behavior and purchasing decisions.

Van der Merwe (2018) identified critical psychological thresholds in customer wait times, demonstrating that reduced queuing times dramatically improved cross-selling success rates.

Xue et al. (2021) further showed that virtual queuing solutions significantly enhanced teller productivity and customer retention, generating substantial additional revenue per branch.

Tanaka (2019) documented how predictive maintenance systems substantially reduced equipment downtime and maintenance costs while improving production quality.

Park and Lee (2023) further demonstrated that IoT implementations in manufacturing generated massive annual cost savings through reduced downtime and improved equipment effectiveness.

Gupta (2021) established that reduced complaint resolution times dramatically decreased customer churn and preserved substantial revenue.

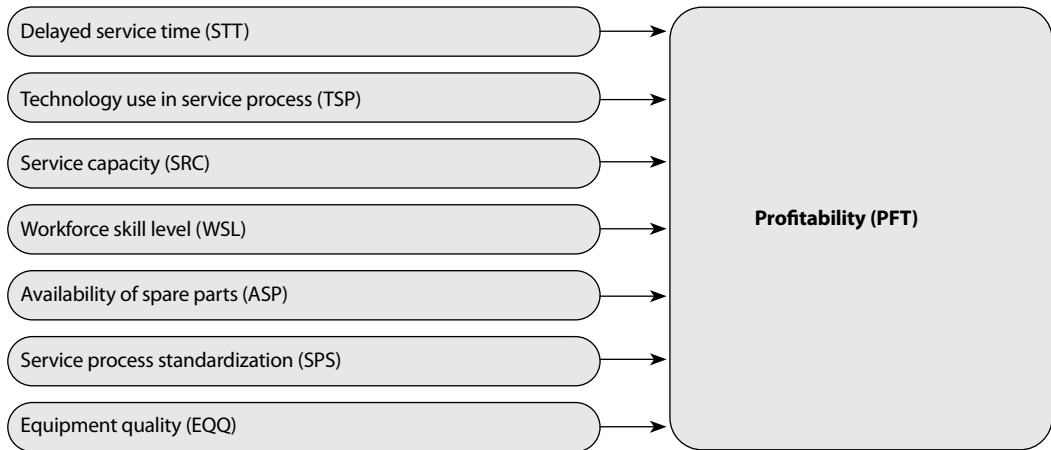
Da Silva et al. (2021) showed that faster outage resolution through AI-assisted diagnostics significantly reduced operational costs and customer compensation payments.

De Koster et al. (2022) demonstrated that augmented reality systems in warehouse operations dramatically improved processing times, accuracy, and training efficiency.

Ndlovu (2021) showed that automated credit scoring in banking reduced approval times from days to hours while improving risk assessment accuracy and customer satisfaction.

Johnson and Lee (2023) found that mere minutes saved in airline turnarounds translated to millions in additional annual revenue per aircraft.

Belobaba et al. (2023) further demonstrated that RFID baggage tracking technology significantly reduced turnaround times and generated substantial annual savings through improved operational efficiency.

**Figure 1: Conceptual framework of the study**

Nepal's unique repair shop conditions remain unaddressed in current research. Service speed is typically examined in ideal settings within studies from developed nations, while Nepal's daily realities are ignored. Problems such as power cuts, scarce parts, and low technology use are excluded from consideration. The impact of these issues on repair times and profits is not understood. Although some Kathmandu research notes the importance of time for customer retention, the balance between speed and quality is missed. Rushed repairs are often found to require redoing, costing shops time and money. Measurement of how local factors alter outcomes has not been conducted, with factors including cheap labor, part delays, and differing customer payment habits. Existing business models are considered inadequate for Nepal's informal workshops. This gap is filled by the present research through studying Lalitpur's shops under real conditions. Practical advice is expected to be offered to owners, and services in developing economies may be better understood. This theory's flexibility is a perfect match for the reality of Lalitpur's motorcycle repair workshops. These shops operate in a challenging environment defined by regular power outage, a slow adoption of modern technology, and a workforce trained preliminary through informal apprenticeships. By applying this theory, the study investigates how a combination of seven factors determines a shop's profitability: delayed service turnaround time, technology use, service capacity, workforce skill level, spare parts availability, process standardization, and equipment quality - collectively shape profitability.

### ***Proposed hypotheses***

*H1: There is a significant negative relationship between delayed service turnaround time and profitability of motorcycle repair centres.*

*H2: There is a significant positive relationship between technology use in service process and profitability.*

- H3: There is a significant positive relationship between service capacity (workshop bays/staff) and profitability.*
- H4: There is a significant positive relationship between workforce skill level and profitability.*
- H5: There is a significant positive relationship between availability of spare parts and profitability.*
- H6: There is a significant positive relationship between service process standardization and profitability.*
- H7: There is a significant positive relationship between equipment quality and profitability.*

## Methods and Materials

This study employed a quantitative research approach using a cross-sectional study research design to examine relationships between service turnaround time and financial performance of motorcycle repair centres from Lalitpur district. The study population included all registered motorcycle repair centres in Lalitpur District, encompassing both formal workshops and informal businesses serving petrol and electric motorcycles. Participants consisted of repair centre owners or senior technicians from establishments operational for at least one year. The population was estimated at 1,000 centres. The sample size was calculated using the standard formula for finite populations:

$$n = \frac{N \cdot Z^2 \cdot p \cdot (1 - p)}{E^2 \cdot (N - 1) + Z^2 \cdot p \cdot (1 - p)}$$

Where:

n = sample size

N = population size (1000)

Z = Z-value (1.96 for a 95% confidence level)

p = estimated population proportion (0.5 for maximum variability)

E = margin of error (0.05)

$$n = \frac{1000 \cdot (1.96)^2 \cdot 0.5 \cdot (1 - 0.5)}{(0.05)^2 \cdot (1000 - 1) + (1.96)^2 \cdot 0.5 \cdot (1 - 0.5)}$$

The calculated sample size yielded around 278. To address potential non-response or incomplete data, the sample size was increased to 288 using judgmental sampling technique. This adjustment followed standard research practices for field studies, representing 28.8% of the estimated population (N=1,000) (Babbie, 2016; Kadam & Bhalerao, 2010).

Primary data collection utilized a structured questionnaire with five-point Likert scale measuring perceptions of operational factors and financial performance. The instrument underwent rigorous pretesting with 10 participants to refine question clarity and effectiveness before full implementation. Researchers employed the drop-off-pick-up method to optimize response rates from busy workshop operators while maintaining data quality. Reliability testing confirmed internal consistency with Cronbach's alpha scores above 0.7 for all con-

structs (DeVellis & Thorpe, 2021; Nunnally & Bernstein, 1994). While content validity was established through expert review by three domain specialists (Polit & Beck, 2006). Ethical standards were maintained through informed consent and confidentiality protocols throughout the research process.

Data analysis incorporated both descriptive and inferential statistical techniques. Descriptive statistics summarized respondent characteristics and key variables through frequencies, percentages, and measures of central tendency. Inferential analysis involved Pearson's correlation to examine relationships between operational factors and profitability, followed by multiple regression analysis to assess predictive relationships while controlling for confounding variables. All analyses were conducted using SPSS software with statistical significance set at  $p < 0.05$  to ensure robust findings.

## Results

### *Demographic profile of respondents*

The survey respondents demonstrated that male operators dominated the sample (96.88%), revealing significant gender disparities in technical trades, while female participation remained minimal (3.12%). Most operators fell within the 28-47 age range (74.65%), indicating a workforce in peak productive years that combines experience with adaptability. Educational backgrounds showed 60.07% had completed higher secondary education, following traditional vocational pathways, while 34.03% held bachelor's degrees and 5.9% possessed master's degrees, suggesting some diversification into business management. Owner-operators constituted 68.06% of respondents, highlighting the prevalent model where proprietors handle both technical and managerial functions, which is characteristic of Nepal's small-scale service enterprises.

### *Reliability test*

The reliability of all measurement scales was confirmed through Cronbach's alpha analysis, with scores ranging from 0.703 to 0.814. Workforce skill level (0.814) and technology adoption (0.801) demonstrated the highest reliability, indicating clear conceptual understanding among respondents. Service capacity (0.773), spare parts availability (0.795), and equipment quality (0.767) also showed strong consistency. Although delayed service turnaround time (0.703) and process standardization (0.734) met the acceptable threshold, their slightly lower reliability likely reflects variations in how different workshops track and implement procedures.

**Table 1: Reliability test**

Scales	Items	Cronbach's alpha	Remarks
Delayed service turnaround time	4	0.703	Acceptable
Technology use in the service process	4	0.801	Good
Service capacity	4	0.773	Good
Workforce skill level	4	0.814	Excellent

Availability of spare parts	4	0.795	Good
Service process standardization	4	0.734	Acceptable
Equipment quality	4	0.767	Good

Source: Survey data, 2025

## Correlation

Correlation analysis revealed significant relationships between operational factors and profitability. Workforce skill level demonstrated the strongest positive correlation ( $r = 0.685$ ), indicating that skilled technicians substantially enhance financial performance through improved service quality and efficiency. Technology adoption also showed a strong positive relationship ( $r = 0.667$ ), confirming that digital tools enhance workflow management and profit margins. Spare parts availability ( $r = 0.611$ ), service capacity ( $r = 0.539$ ), process standardization ( $r = 0.435$ ), and equipment quality ( $r = 0.423$ ) all showed meaningful positive correlations with profitability. Interestingly, delayed service turnaround time exhibited a moderate negative correlation ( $r = -0.459$ ), suggesting that faster completion times contribute to better financial outcomes.

**Table 2: Correlation analysis**

Constructs	STT	TSP	SRC	WSL	ASP	SPS	EQQ	PFT
STT	1							
TSP	0.612**	1						
SRC	0.542**	0.578**	1					
WSL	0.457*	0.612**	0.559**	1				
ASP	0.487*	0.534**	0.632**	0.579**	1			
SPS	0.365*	0.546**	0.423*	0.523**	0.455*	1		
EQQ	0.456*	0.617**	0.586**	0.613**	0.321	0.432*	1	
PFT	-0.459*	0.667**	0.539**	0.685**	0.611	0.435*	0.423*	1

\*\* Significantly correlated at the 0.01 level (2-tailed).

\* Significantly correlated at the 0.05 (2-tailed).

Note: Survey data 2025

## Model fit summary

The regression model demonstrated strong explanatory power for understanding profitability drivers in repair centers. With an R value of 0.792, the model revealed a substantial relationship between operational factors and financial performance. The R Square value of 0.627 indicated that approximately 62.7% of profitability variation could be explained by the seven operational variables examined. The adjusted R Square of 0.615 confirmed the model's reliability despite multiple predictors, while the low standard error (0.321) suggested accurate prediction capability. These results validate that operational efficiency factors collectively serve as significant predictors of financial success in Nepal's motorcycle repair industry, providing workshop owners with clear areas for performance improvement.



## ANOVA

The ANOVA results confirm that the regression model significantly explains profitability variations among repair centers. The F-statistic of 34.52 with a p-value of 0.000 indicates that the seven operational predictors collectively exert a substantial influence on financial performance. The regression sum of squares (24.876) considerably exceeds the residual sum of squares (14.835), demonstrating that the model captures genuine patterns rather than random chance. The mean square values further show that explained variance (3.554) substantially outweighs unexplained variance (0.053).

## Coefficient

Regression analysis revealed distinct patterns in how operational factors influence profitability in Lalitpur's motorcycle repair workshops. Workforce skill level emerged as the most powerful predictor ( $\beta = 0.319$ ,  $p = 0.031$ ), indicating that workshops with trained technicians achieve significantly better financial outcomes through improved efficiency and service quality. Technology adoption also demonstrated substantial impact ( $\beta = 0.298$ ,  $p = 0.001$ ), confirming that digital tools enhance operational effectiveness even in Nepal's developing market context.

Two additional factors showed meaningful contributions:

Spare parts availability ( $\beta = 0.226$ ,  $p = 0.013$ ) and service capacity ( $\beta = 0.185$ ,  $p = 0.010$ ). These findings align with practical observations that inventory management and adequate workspace directly affect a workshop's ability to complete jobs promptly and handle customer volume. Process standardization showed a modest positive effect ( $\beta = 0.142$ ,  $p = 0.010$ ), suggesting that organized workflows contribute to financial performance, though to a lesser degree.

Contrary to expectations, equipment quality ( $\beta = 0.078$ ,  $p = 0.191$ ) and service turnaround time ( $\beta = 0.062$ ,  $p = 0.223$ ) did not show statistically significant direct relationships with profitability. This suggests that in Nepal's context, superior tools alone may not guarantee better financial results unless supported by skilled operators, and customers may value repair quality and cost considerations over speed alone.

**Table 3: Coefficient**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error			
1	Constant	0.512	0.089	-	5.75	0.000
	STT	0.045	0.037	0.062	1.22	0.223
	TSP	0.211	0.041	0.298	5.15	0.001
	SRC	0.147	0.038	0.185	3.87	0.010
	WSL	0.238	0.039	0.319	6.10	0.031
	ASP	0.190	0.043	0.226	4.42	0.013
	SPS	0.119	0.046	0.142	2.59	0.010
	EQQ	0.054	0.041	0.078	1.31	0.191

Source: Survey data, 2025;

## Discussions

The findings from Lalitpur's motorcycle repair workshops both align with and diverge from established empirical research in significant ways. The strong positive relationship between workforce skill level and profitability ( $\beta = 0.319$ ,  $p = 0.031$ ) reinforces global evidence that human capital drives service sector performance. This finding echoes McDonald's (2019) research showing certified technicians complete repairs faster with fewer comebacks, though in Nepal's context, where formal training remains scarce, this relationship appears even more pronounced. Similarly, the substantial impact of technology adoption ( $\beta = 0.298$ ,  $p = 0.001$ ) aligns with Schmidt and Wagner's (2020) findings that digital transformation improves automotive repair profitability, though in Nepal's resource-constrained environment, even basic digital tools yield disproportionate benefits.

However, the non-significant relationship between service turnaround time and profitability ( $\beta = 0.062$ ,  $p = 0.223$ ) contrasts sharply with studies from developed economies. While McDonald (2019) found faster service directly increased fast-food sales, and Johnson and Lee (2023) demonstrated minutes saved in airline turnarounds generated substantial revenue, Nepal's repair market appears to prioritize different factors. This suggests that in contexts where motorcycles serve as essential livelihood tools rather than luxury items, customers value repair quality and cost-effectiveness over speed - a finding that necessitates contextual adaptation of service management theories.

The significant roles of spare parts availability ( $\beta = 0.226$ ,  $p = 0.013$ ) and service capacity ( $\beta = 0.185$ ,  $p = 0.010$ ) highlight supply chain challenges unique to developing economies. While researchers like Tanaka (2019) and Park (2023) focus on high-tech solutions for efficiency, the reality in Nepal's workshops is different. What they need most are simple tools: better inventory management and enough physical space to work. This supports Gupta's (2021) concept of "appropriate technology" – using solutions that fit a region's specific resources and limitations.

The data shows that creating standard work procedures does help, but only to a modest degree. This is because rigid rules often clash with local challenges, such as frequent power cuts and informal training systems. For standardization to work, it must be flexible enough to adapt to these realities.

In the end, the idea is universal: running an efficient business makes it more profitable. However, the path to efficiency depends entirely on the economic environment. In developed nations, this might mean competing on speed and adopting advanced technology. In a developing economy like Nepal's, the priorities are different. Success comes from investing in people's skills, choosing the right tools for the context, and building supply chains that can withstand local disruptions. This insight not only adds to business theory but also offers practical, actionable advice for workshop owners facing these daily challenges.

## Conclusion

This study set out to answer a simple but important question: does faster service lead to

better profits for the small motorcycle repair shops in Lalitpur, Nepal? Grounded in the Service-Profit Chain theory, the research employed a quantitative approach with a cross-sectional correlational design to address a significant gap in understanding how service operations function in resource-constrained environments. This study utilized judgmental sampling to collect data from 288 workshop owners and technicians, employing a structured questionnaire for data collection.

The findings reveal that service turnaround indeed drives financial performance, but through mechanisms distinct from those observed in developed economies. Of the seven hypotheses tested, five were supported while two were rejected. Workforce skill level emerged as the most powerful predictor of profitability ( $\beta = 0.319$ ,  $p = 0.031$ ), emphasizing that human capital development yields greater returns than investments in advanced equipment alone. Technology adoption also demonstrated substantial impact ( $\beta = 0.298$ ,  $p = 0.001$ ), confirming that even basic digital tools enhance operational effectiveness in this context. The significant roles of spare parts availability ( $\beta = 0.226$ ,  $p = 0.013$ ) and service capacity ( $\beta = 0.185$ ,  $p = 0.010$ ) highlight the critical importance of supply chain management and adequate workspace in overcoming infrastructure challenges.

Contrary to expectations and findings from Western studies, two hypotheses were rejected: service turnaround time ( $\beta = 0.062$ ,  $p = 0.223$ ) and equipment quality ( $\beta = 0.078$ ,  $p = 0.191$ ) showed no significant relationship with profitability. This suggests that customers in Nepal's market prioritize repair quality and cost-effectiveness over speed, and that superior tools alone cannot guarantee better financial results without skilled operators. This nuanced understanding requires contextual adaptation of service management theories when applied to developing economies.

For practice, the study recommends that workshop owners prioritize technician training, adopt appropriate digital tools, and improve inventory management rather than investing in expensive equipment or emphasizing speed alone. For policy, the findings suggest that vocational training programs and support for digital infrastructure would yield significant benefits for the sector's development.

Future research should explore seasonal variations in repair demand, conduct longitudinal studies to track performance changes, and investigate customer perspectives on service quality. By bridging theory and practice, this study contributes to both academic understanding of service operations in developing economies and practical strategies for improving the sustainability of Nepal's vital motorcycle repair industry.

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### ***Authors' contribution statement***

Estar Limbu collected data and wrote the introduction and literature review. Ramesh Raj Pandeya prepared the article outline and wrote the methods section. Baburaja Tandukar developed the results and discussion sections, while Shyam Prasad Bastakoti contributed the conclusion and references.

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Authors declare no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.



# Strengthening Nepal's Security Sector for Effective Crisis Management

*Dr. Lekhnath Khanal<sup>1</sup>, Debika Aryal<sup>2</sup>*

- <sup>1</sup> Post-Doctoral Fellow, Srinivas University, Mangalore, India  
<sup>2</sup> Researcher, Nepal Philosophical Research Center, Kathmandu

\* Corresponding Author<sup>1</sup> Email: [lekhanathkhanal@hotmail.com](mailto:lekhanathkhanal@hotmail.com)

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## Abstract

*This study examines how Nepal's security sector can be strengthened for effectively crisis management. Guided by an interpretivist research philosophy, a qualitative research approach with qualitative descriptive research design was employed, using quota sampling to select fifteen participants - five each from the Nepal Army, Nepal Police, and Armed Police Force - and fifteen documents for secondary analysis. Primary data were collected through semi-structured interviews, complemented by the analysis of secondary documents, including reports and prior studies. Thematic analysis was conducted simultaneously on both primary and secondary data to identify key patterns and insights. Findings indicate that Nepal's security sector can be strengthened for crisis management through collaboration with local authorities, community participation, mental health and psychological support for security personnel, integration of technological advancement, and ensuring gender inclusivity. Recommendations include institutionalizing joint exercises, integrating communities, strengthening technological capacity, providing mental health services, and operationalizing gender-inclusive measures.*

**Keywords:** Crisis management, Security sector, Nepal, Strengthening, Interpretivism

## Introduction

Nepal is a nation that stands as a beautiful but challenging landscape, where the risk of natural disasters is a constant part of life. Its unique position in the mighty Himalayas makes it extremely vulnerable to a wide range of serious natural hazards. The country frequently experiences devastating earthquakes, destructive landslides, and widespread flooding that can wipe out entire communities (Adhikari, Devkota, & Wu,

2021; Manyena, 2016). These natural dangers are often made difficult by other man-made problems, such as periods of political uncertainty and the potential for tensions along its borders. This combination of natural and human-made threats creates a very complex and difficult environment for managing large-scale emergencies. The massive 2015 earthquake was a tragic example of this vulnerability, causing immense loss of life and property. That disaster also clearly showed the world that Nepal's security forces - which include the Nepal Army, the Nepal Police, and the Armed Police Force (APF) - are absolutely essential front-line responders. They play the most critical role in immediate life-saving operations, such as searching for survivors in rubble, providing first aid, and maintaining order when chaos strikes (Ojha, Regmi, & Herat, 2018). They are the first line of defence when crisis hits.

Despite the bravery and dedication shown by these security personnel, there are still many deep-rooted problems that stop Nepal's crisis management from being as effective as it needs to be. A significant issue is the lack of clear and efficient communication between the different security agencies themselves. When the Army, Police, and APF cannot share information quickly and clearly, it leads to confusion, wasted effort, and a slower response to people in desperate need of help (Sharma, 2020; Khanal, 2017).

Furthermore, Nepal's big political shift to a federal system has created a new challenge. While this change gave local governments more power and responsibility for handling disasters in their own areas, it has also made coordination with the national-level security agencies much more complicated and often confusing (Asian Development Bank [ADB], 2020). Nobody is entirely sure who is in charge of what during the chaotic first hours of an emergency.

Other major gaps include training that does not fully prepare personnel for specific crises like medical disasters or cyber-attacks (Malla, 2021), a lack of strong teamwork with civilian relief organizations (Koirala, Dhakal, & Maharjan, 2018), and a serious neglect of the psychological trauma that security workers experience, as well as a failure to address the unique dangers that women and girls face during disasters (Khan, Wagatsuma, & Watanabe, 2022; Magar & Khanal, 2020).

The aim of this study is to analyze the key strategic improvements required to enhance the crisis management capabilities of Nepal's security sector. Specifically, this research will explore how to foster greater collaboration with local authorities within Nepal's federal governance structure; integrate community participation and leverage local knowledge to improve response accuracy and efficiency; utilize technological advancements such as drones and satellite imagery to strengthen situational awareness and operational coordination; address the mental health needs of security personnel to safeguard their well-being and operational readiness; and ensure gender inclusivity in crisis response by developing protocols that meet the specific needs of women and girls during emergencies. This study answers the question of "How can Nepal's security sector improve its crisis management strategies by fostering greater collaboration with local authorities, integrating community participation, and utilizing technological advancements, while addressing the mental health needs of personnel and ensuring gender inclusivity?"



By examining these interconnected dimensions, this study seeks to provide a holistic and actionable framework for strengthening the overall resilience and effectiveness of Nepal's security forces in crisis situations. The significance of these findings lies in their potential to directly inform policy-making, strategic planning, and training curricula within Nepal's security institutions.

## **Literature review**

### ***Theoretical review***

Effective crisis management is understood through models that break down the process into manageable phases. The most widely cited model is the four-phase cycle: mitigation, preparedness, response, and recovery (Lindell & Perry, 2004; Alexander, 2002). *Mitigation* involves long-term steps to reduce the impact of disasters, such as building codes. *Preparedness* focuses on planning, training, and exercises to get ready for a crisis. The *response* phase is the immediate reaction to an event to save lives and property. Finally, *recovery* involves rebuilding communities and restoring normalcy. This cyclical model provides a structured way to analyze the strengths and weaknesses of any crisis management system.

For the security sector, which includes the military, police, and other forces, effective crisis management is also guided by principles of good Security Sector Governance (SSG). SSG emphasizes that security institutions must be effective, accountable, and operate under democratic civilian control (Sedra, 2016). This means they must be efficient in their response but also transparent and respectful of human rights, especially during the chaos of an emergency. In a crisis, this translates to the need for clear legal frameworks, inter-agency coordination, and collaboration with civilian authorities (Hanggi, 2004).

Furthermore, the concept of resilience has become central to modern crisis theory. Resilience moves beyond just responding to a disaster and focuses on a system's ability to absorb shocks, adapt, and transform to withstand future crises (Manyena, 2016).

### ***Global and regional practices***

Effective crisis management necessitates a security sector that is collaborative, technologically advanced, and human-centric. Globally, best practices emphasize decentralized governance that strengthens partnerships between national security bodies and local authorities. Local governments, recognized as vital first responders in the Sendai Framework, offer irreplaceable contextual knowledge of their regions (United Nations Office for Disaster Risk Reduction, 2015). Adopting structured systems like the Incident Command System (ICS) helps standardize response efforts, integrating multiple agencies under a unified command to improve coordination (Buck, Trainor, & Aguirre, 2006). However, effective decentralization requires sustained investment in local capabilities and financial mechanisms to empower municipalities (Heijmans, 2021; Dixit, 2022).

Integrating community participation magnifies the effectiveness of formal security operations. Local populations provide critical intelligence on geography, social dynamics, and tradi-

tional survival practices, forming the basis of Community-Based Disaster Risk Management (CB-DRM) (Mercer et al., 2010). Programmes like Bangladesh's Cyclone Preparedness Programme demonstrate how trained volunteers bridge gaps between official agencies and vulnerable communities, significantly reducing fatalities through localized early warnings (Paul, 2009; Twigg, 2023). This collaborative approach builds social capital and improves trust in public institutions.

Technology plays a transformative role in modern crisis response. Drones and satellite imagery enhance situational awareness, damage assessment, and logistics. Satellite networks like the International Charter 'Space and Major Disasters' enable rapid large-scale analysis, while drones deliver real-time data for precise operations such as search and rescue (Parker, 2020). However, these tools must be deployed within ethical frameworks addressing privacy and local autonomy to avoid technological dependency (Sandvik & Lohne, 2014; UNISDR, 2015).

The well-being of security personnel is crucial for sustained operational readiness. High-stress environments contribute to psychological conditions such as PTSD and burnout (Brooks et al., 2020). Organizations must prioritize mental health through proactive measures like peer-support programs, resilience training, and access to psychological services, adopting models such as Psychological First Aid (World Health Organization, 2013).

Gender inclusivity is essential for equitable and effective crisis response. Women and girls face heightened risks during disasters, including gender-based violence and resource exclusion (IASC, 2015). Security strategies must use sex-disaggregated data and include women in leadership roles. Practical measures like safe spaces, dignity kits, and gender-sensitive sanitation facilities are critical to meeting differentiated needs (Enarson, 2012).

### ***Previous studies on Nepal's security sector and disaster response***

Nepal, situated in a seismically active region with complex topography, is highly vulnerable to a multitude of natural disasters, including earthquakes, floods, and landslides. The devastating 2015 Gorkha earthquake served as a critical juncture, exposing both the capacities and limitations of the nation's disaster response apparatus and triggering a strategic reevaluation (Government of Nepal, 2015). The security sector—comprising the Nepal Army, Nepal Police, and Armed Police Force (APF)—is mandated as a primary responder in crises, responsible for search and rescue, maintaining law and order, and facilitating humanitarian assistance. This literature review synthesizes existing research on the role of Nepal's security sector in crisis management, examining its documented strengths, identified weaknesses, and the ongoing discourse on necessary reforms for enhanced effectiveness.

In terms of strengths, a consistent theme in the literature is the commendable rapid mobilization and dedication of Nepal's security forces during major crises. Multiple studies highlight their pivotal role in the immediate aftermath of the 2015 earthquake. Ojha, et al. (2018) document the swift deployment of security personnel for search and rescue operations in collapsed structures, often under extremely hazardous conditions. Their presence was also crucial in preventing looting and managing crowd control at distribution sites, thereby maintaining a degree of social order amidst the chaos. Furthermore, Maharjan (2019) emphasizes the technical contributions

of specialized units, particularly the Nepal Army's engineering corps, in clearing critical road access routes and debris, which was essential for enabling the flow of aid to affected communities.

Despite these strengths, a significant body of research identifies systemic weaknesses that hinder optimal response. A primary critique centres on inter-agency coordination and communication. Sharma (2020) notes that a lack of integrated communication systems and unified protocols often leads to confusion, duplicated efforts, or critical gaps during emergencies. This problem is intensified by what Khanal (2017) identifies as an absence of standardized reporting and information sharing structures between the Nepal Army, Nepal Police, and Armed Police Force. This prevents the establishment of a common operational picture and impedes the efficient allocation of resources.

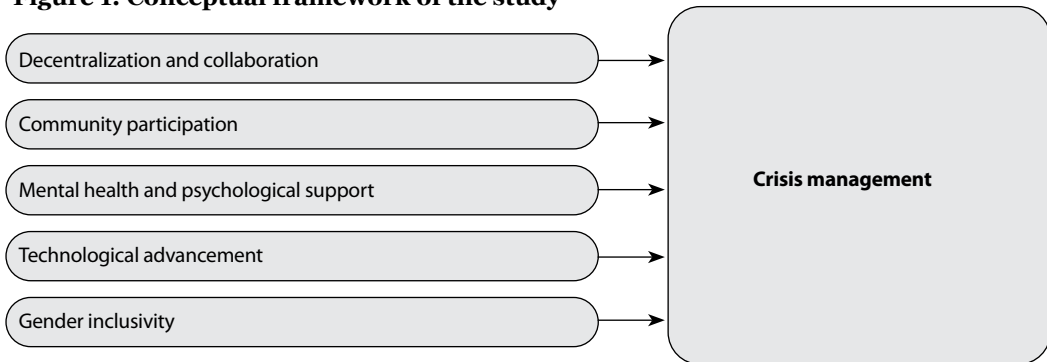
A second critical weakness is the need for more specialized and diverse training. Although institutions like the Institute of Crisis Management Studies (ICMS) provide advanced programs, Malla (2021) contends that mainstream training for most personnel fails to adequately prepare them for complex, multi-hazard scenarios. This view is supported by sector-specific analysis. Bhattarai et al., (2020) call for enhanced training in disaster medicine and triage, particularly for personnel deployed as first responders in remote areas. Similarly, Singha (2019) advocates for integrating preparedness for emerging threats, such as cybersecurity breaches, into crisis management curricula to address modern vulnerabilities.

Finally, scholars consistently emphasize the need for improved civil-military coordination. A 2019 report by the National Reconstruction Authority (NRA) highlighted instances of unclear chains of command and overlapping responsibilities between security agencies and civilian government bodies, leading to operational inefficiencies and frustration. To remedy this, Koirala et al., (2018) recommend formalized joint simulation exercises and pre-established coordination frameworks that clearly delineates the roles of military and civilian actors, thereby ensuring a more seamless and complementary response.

**Research gap:** Despite the extensive documentation of these coordination failures and training deficits, a significant research gap exists. There is a pressing need to understand how to holistically implement known best practices within Nepal's specific federal governance structure. Current literature tends to diagnose problems in isolation but fails to provide an integrated strategy for simultaneously addressing these critical and interconnected gaps. These include the practical mechanics of inter-agency and civil-military coordination post-federalization (ADB, 2020; Sharma, 2020), the systematic integration of community knowledge with formal security operations (Koirala et al., 2018), and the development of ethical protocols for technology use (Parker, 2020). Furthermore, research lacks actionable frameworks for institutionalizing psychosocial support for personnel and translating gender policies into effective field protocols (Khan et al., 2022; Magar & Khanal, 2020), leaving responses less efficient and equitable. This study aims to synthesize these elements into a cohesive strategic framework.

**Conceptual framework:** This study conceptualizes the strengthening of Nepal's security sector -including the Nepal Army, Nepal Police, and Armed Police Force - as the independent variable influencing effective crisis management, the dependent variable. Key indicators

**Figure 1: Conceptual framework of the study**



of sectoral strengthening are: decentralization and collaboration, community participation, mental health and psychological support, technological advancement, and gender inclusivity.

## Methods and Materials

This study has adopted an interpretivist research philosophy. By focusing on how security personnel perceive and respond to crises, this philosophy captures insights into the strategies of Nepal's security sector for effective crisis management.

A qualitative research approach was employed to explore the experiences and perspectives of key stakeholders in Nepal's security sector. Primary data were collected through semi-structured interviews, which allowed flexible yet guided conversations. Secondary qualitative data, including newspaper articles, prior studies, and official reports, were analysed to provide context and corroboration.

The study followed a qualitative descriptive research design. This design provided an accurate and comprehensive description of phenomena as experienced by participants. It was suitable for exploring operational dynamics, capturing individual perspectives, and highlighting the practical realities of crisis management within Nepal's federal governance framework.

The target population comprised personnel from Nepal's three primary security institutions: the Nepal Army, Nepal Police, and Armed Police Force. A quota sampling strategy ensured representation across the three institutions, with five captains from the Nepal Army, five inspectors from the Nepal Police, and five inspectors from the Armed Police Force, totaling fifteen respondents. Secondary data were purposively selected from fifteen documents analysis including newspapers, reports, and previous studies to provide supporting evidence and contextual information.

Primary data were collected through semi-structured interviews with security personnel who had participated in past crisis response operations. Respondents shared their experiences, challenges, and suggestions regarding crisis management. Secondary data were obtained through fifteen documents analysis, including academic journals, government and NGO reports, past security sector response reports, and policy documents related to federalization and disaster management. Combining these sources ensured a comprehensive under-

standing of operational practices, gaps, and potential improvements in crisis management.

Data were analysed using thematic analysis, which identifies, organizes, and interprets patterns and themes within qualitative data. Analysis focused on five pre-determined themes derived from the conceptual framework: (1) decentralization and inter-agency collaboration, (2) community participation and local knowledge integration, (3) mental health and psychological support, (4) technological advancement, including drones and satellite imagery, and (5) gender inclusivity in operational protocols. This method allowed the synthesis of primary and secondary data into coherent findings, supporting actionable recommendations for strengthening Nepal's security sector in crisis management.

Data integration was conducted by analyzing primary and secondary data simultaneously, allowing for triangulation of findings. This approach ensured that insights from interviews were cross-checked and enriched with documentary evidence, providing a comprehensive understanding of operational practices, challenges, and gaps.

Ethical consideration involved obtaining informed consent from all participants, ensuring confidentiality, and using data responsibly. Secondary data were also handled in accordance with ethical research guidelines, respecting copyright, intellectual property, and proper citation practices.

## **Results**

### ***Decentralization and collaboration***

Nepal's federalization has empowered local governments, but coordination with central security agencies often remains unclear, leading to delays and inefficiencies during crises (Asian Development Bank [ADB], 2020; Dixit, 2022). Effective collaboration between the security sector and local authorities is essential to ensure timely response and clear division of responsibilities. Respondents highlighted the need for joint planning and communication mechanisms. A Nepal Army captain stated, *"When we conducted joint drills with local officials, roles became clearer, and resource deployment was much faster"* (Interview, Lalitpur, March 2025). A Nepal Police inspector added that lack of shared protocols can create confusion during emergencies (Interview, Kathmandu, March 2025). Strengthening coordination through standardized operating procedures, regular joint exercises, and pre-disaster workshops can enhance synergy between security forces and local governments, ensuring a more unified and efficient crisis response.

### ***Community participation***

Active involvement of local communities enhances the effectiveness of crisis management by leveraging local knowledge and resources. Studies show that community-based disaster risk management improves preparedness and reduces casualties (Mercer et al., 2010; Adhikari et al., 2021). Respondents emphasized that community engagement is often limited, despite communities' familiarity with terrain, vulnerable areas, and traditional coping strategies. A Nepal Police inspector explained, *"Local residents know which areas flood first and where*

*people need help, but they are rarely included in planning or drills"* (Interview, Gorkha, February 2025). Incorporating community representatives into pre-disaster planning, awareness campaigns, and response exercises can strengthen early warning systems and facilitate timely, context-specific interventions, improving overall crisis management outcomes.

The psychological well-being of security personnel is crucial for sustained operational readiness. High-stress environments during crisis response contribute to burnout, anxiety, and post-traumatic stress disorder (PTSD) (Brooks et al., 2020; Khan et al., 2022). Respondents highlighted a lack of structured mental health support within the security sector. A Nepal Police inspector shared, *"After multiple disaster deployments, I often feel exhausted and anxious, and there is no organized system to access psychological support"* (Interview, Kathmandu, March 2025). Security personnel recommended regular mental health screenings, resilience training, and access to professional psychological services. Implementing these measures can enhance operational efficiency and reduce long-term mental health risks among frontline responders.

### ***Technological advancement***

The use of modern technology can significantly improve crisis management by enhancing situational awareness, decision-making, and operational efficiency. Studies highlight the potential of drones, satellite imagery, and geographic information systems for rapid damage assessment and targeted response (Parker, 2020; UNISDR, 2015). Respondents emphasized both interest and challenges in adopting these technologies. A Nepal Army captain stated, *"Drones and satellite data could help us quickly locate affected areas, but we lack training and proper infrastructure to use them effectively"* (Interview, Lalitpur, March 2025). Strengthening technological capacity through training programs, investment in equipment, and integration of tech-based tools into standard operating procedures can improve coordination, speed, and precision in disaster response operations.

### ***Gender inclusivity***

Ensuring gender-sensitive crisis management is essential for equitable and effective responses. Women and girls face heightened risks during disasters, including limited access to sanitation, healthcare, and protection from gender-based violence (Enarson, 2012; Magar & Khanal, 2020; IASC, 2015). Respondents recognized the importance of gender considerations but noted gaps in operational protocols. An Armed Police Force (APF) inspector stated, *"We understand that women and children are more vulnerable, yet our teams are not fully trained to address these specific needs during emergencies"* (Interview, Kathmandu, March 2025). Integrating gender-sensitive measures, such as safe spaces, dignity kits, and training on gender-based violence prevention, into crisis management strategies can enhance inclusivity and improve overall response effectiveness.

## **Discussion**

This study investigated how Nepal's security sector can strengthen crisis management capacity through decentralization and collaboration, community participation, mental health sup-

port, technological advancement, and gender inclusivity. The findings corroborate, extend, and in some cases diverge from existing literature.

The results confirm the importance of decentralization in improving responsiveness but also highlight gaps in coordination between security agencies and local governments. Literature emphasizes that federal systems can enhance crisis response when local authorities are adequately empowered and supported (Heijmans, 2021; United Nations Office for Disaster Risk Reduction [UNDRR], 2015). However, as Dixit (2022) and Sharma (2020) note, Nepal's federalization has not yet translated into clear operational protocols. This study echoes these concerns: respondents described delays and confusion in the absence of standardized operating procedures. At the same time, positive experiences with joint drills demonstrate that collaboration is possible when institutionalized. This finding reinforces global best practices such as the Incident Command System (Buck, Trainor, & Aguirre, 2006), which Nepal could adapt to enhance inter-agency synergy.

The literature highlights the critical role of communities in disaster risk reduction, with models like Community-Based Disaster Risk Management (CBDRM) proving effective across Asia (Mercer et al., 2010; Paul, 2009). Consistent with these studies, respondents stressed that local residents possess vital knowledge about terrain and vulnerabilities but are rarely included in planning. This underutilization mirrors findings by Adhikari et al. (2021), who argue that Nepal has yet to meaningfully integrate local knowledge into formal response systems. The present study supports calls for institutional mechanisms that link community expertise with security sector operations, thereby aligning with the Sendai Framework's recognition of local actors as first responders (UNDRR, 2015).

The results revealed significant stress, burnout, and PTSD among security personnel, with limited access to structured psychological support. These findings are consistent with Brooks et al. (2020), who demonstrate the mental health toll of emergency response on frontline workers, and Khan et al. (2022), who documented PTSD prevalence in Nepal's disaster responders. While the World Health Organization (2013) recommends approaches such as Psychological First Aid and resilience training, respondents indicated these are not widely implemented in Nepal's security sector. This suggests a persistent research-to-practice gap: although the importance of psychosocial care is widely acknowledged, institutionalization remains weak.

Global research identifies drones, satellite imagery, and geographic information systems as transformative tools for crisis response (Parker, 2020; UNISDR, 2015). This study found strong interest in these technologies among security personnel, but also highlighted barriers of inadequate infrastructure, training, and integration into standard procedures. These findings echo Sandvik and Lohne's (2014) concern that low-resource contexts risk technological dependency if adoption is not paired with capacity building. Nepal's challenge is therefore not awareness, but implementation: to operationalize global best practices in a mountainous, resource-constrained setting.

The results underscore the disproportionate vulnerabilities faced by women during disasters, including lack of safe spaces and exposure to gender-based violence. These concerns align with the Inter-Agency Standing Committee's (2015) call for gender-sensitive crisis

management and Magar and Khanal's (2020) findings on women's exclusion in Nepal. Respondents acknowledged awareness but identified a lack of training and operational tools to address gender needs effectively. This illustrates what Enarson (2012) describes as the gap between gender policies and ground-level practice. Addressing this requires not only gender mainstreaming in national frameworks but also practical, field-level protocols such as the provision of dignity kits and training in gender-based violence prevention.

Taken together, the findings align closely with the conceptual framework of this study. Strengthening the security sector through improved collaboration, community integration, mental health support, technological adoption, and gender sensitivity contributes directly to more effective crisis management. However, the results also highlight persistent gaps between policy and practice. While literature provides models and recommendations, Nepal's federalized security sector continues to face implementation barriers, particularly in coordination, psychosocial care, and gender inclusivity. Bridging these gaps requires institutional reforms, capacity building, and sustained investment in both human and technological resources.

## Conclusion

This study aimed to examine strategies for strengthening Nepal's security sector to achieve more effective crisis management, focusing on decentralization and collaboration, community participation, mental health support, technological advancement, and gender inclusivity. Guided by an interpretivist research philosophy, the study employed a qualitative approach to explore the experiences and perspectives of key stakeholders in Nepal's security sector. A qualitative descriptive research design was adopted to provide a comprehensive and accurate depiction of operational realities. The target population included personnel from the Nepal Army, Nepal Police, and Armed Police Force, with fifteen respondents selected through a quota sampling strategy to ensure balanced representation. Primary data were collected through semi-structured interviews, allowing participants to share insights on operational challenges and strategies, while secondary qualitative data from government reports, prior studies, and media articles provided contextual support. Thematic analysis was used to identify, organize, and interpret key patterns and themes across the data, focusing on the five pre-determined areas central to sectoral strengthening.

The findings indicate that Nepal's federalization has created opportunities for enhanced local response capacity but also highlighted gaps in coordination and communication between security agencies and local governments. Respondents emphasized the critical role of community knowledge, the need for structured mental health support for personnel, and the potential of technological tools such as drones and satellite imagery to improve operational efficiency. Gender-sensitive measures were identified as essential but currently insufficiently implemented.

Based on these insights, the study recommends standardizing operating procedures, conducting regular joint drills, integrating community representatives in planning and response, institutionalizing mental health programs, investing in technological capacity, and operationalizing gender-inclusive protocols.



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### ***Authors' contribution statement***

Lekhanath Khanal collected the data and drafted the manuscript. P.S. Aithal conceptualized the study, provided supervisory guidance, and critically reviewed the manuscript.

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Authors declare no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

## Appendix 1: Plagiarism and AI detection test report

# Lekhanath Khanal

## Strengthening Nepal's Security Sector for Effective Crisis Management

 Tribhuvan University

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# BNPL Services and Spending Behaviors of Millennial Generation in Lalitpur District

Dr. Tara Prasad Gautam<sup>1\*</sup>, Richa Pokhrel<sup>2</sup>, Chunika Rai<sup>3</sup>, Smriti Rai<sup>4</sup>,  
Anish Maharjan<sup>5</sup>, Alish Shakya<sup>6</sup>

- <sup>1</sup> Asst. Campus Chief, Madam Bhandari Memorial College, Tribhuvan University, Kathmandu, Nepal
- <sup>2</sup> Faculty Member, United College, Tribhuvan university, Lalitpur, Nepal
- <sup>3</sup> MBS Student, United College, Tribhuvan university, Lalitpur, Nepal
- <sup>4</sup> BBM Student, United College, Tribhuvan university, Lalitpur, Nepal
- <sup>5</sup> BBS Student, United College, Tribhuvan university, Lalitpur, Nepal
- <sup>6</sup> BCA Student, United College, Tribhuvan university, Lalitpur, Nepal

\*Corresponding Author<sup>1</sup> Email: gautamtp@mbmc.edu.np

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## Abstract

*This study examines the impact of Buy Now, Pay Later (BNPL) services on the spending habits of millennials (born between 1981 and 1996) in Lalitpur district, Nepal. It analyzes the effect of four specific BNPL characteristics: ease of use, user awareness, service accessibility, and user attitude. A quantitative, survey-based methodology was employed, collecting data from 385 BNPL users in a cross-sectional study. The data were examined using frequency distribution, percentage, correlation analysis, and regression analysis. The findings indicated that the ease of use, awareness, and accessibility of BNPL services lead to increased spending among users. In contrast, users' attitudes towards BNPL did not show a significant influence on their spending behavior. These findings imply that efforts to mitigate potential debt risks should prioritize regulatory measures. Key recommendations include enforcing greater transparency in BNPL terms and implementing stronger controls on spending limits. The study concludes that these direct interventions may be more effective than financial literacy programs designed to alter user attitudes.*

**Keywords:** BNPL, Spending behavior, Millennials, Perceived ease, Consumer debt, Lalitpur district

## Introduction

The rapid evolution of financial technology had profoundly altered how consumers access credit and manage their finance. A particularly significant development is the emergence of Buy Now, Pay Later (BNPL) services. These platforms represent a modern form of short-term financing that permits consumers to defer payments for purchase, often through interest-free installments. This model provides a seamless alternative to traditional credit channels (World Bank, 2020). A key distinction lies in their integration; unlike conventional loans or credit

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cards, BNPL services are embedded directly into online and mobile checkout processes, offering instant, minimal-friction credit at the point of sale (Morse, 2021).

This convenience has made BNPL exceptionally attractive to younger, digital-native consumers, specifically millennials. This demographic frequently exhibits caution towards traditional financial products due to concern over debt and complex approval requirements (McKinsey & Company, 2022). The global BNPL market's expansion signifies a major shift in financial behavior towards embedded, efforts credit solutions that prioritize immediacy (Emarketer, 2023).

However, this rapid proliferation raises critical questions about consumer spending behavior and financial health. The design of BNPL services, which minimizes the immediate psychological impact of spending and promoted instant gratification, may inadvertently encourage higher expenditure, impulse buying, and the normalization of debt for routine purchase (Ritzer, 2019; Consumer Financial Protection Bureau, 2021). These potential consequences are especially pertinent for millennials, a generation defined by their digital fluency, distinct economic experiences, and an often-ambivalent relationship with credit (Howe & Strauss, 2009).

While research into BNPL's effects is growing in Western nations, a notable gap exists in studies focused on emerging economies like Nepal. here, cultural perspectives on debt, financial literacy levels, and regulatory environments differ substantially from those in developed nations (Pradhan, 2020). This study void is particularly acute in urban areas such as Lalitpur district, a center of education and commerce with a large millennial population heavily targeted by BNPL providers.

This study seeks to address this gap by specifically investigating how BNPL services influence the spending behaviors of millennials in Lalitpur district, Nepal. The research is guided by the following question: To what extent do perceive ease, awareness, accessibility, and attitude toward BNPL predict increased spending behavior among millennials? The primary objectives are to determine which factors most significantly drive BNPL – induced spending and to assess whether user attitudes play a meaningful role in moderating financial behavior. The rationale for this study lies in its potential to inform consumer protection policy, financial education initiatives, and similar emerging economies. Ultimately, this research contributes a non-Western perspective to the global discourse on fintech and consumer behavior, offering localized insights that balance innovation with financial well-being.

## **Literature review**

### ***Spending behavior***

Spending behavior refers to the patterns and decision-making process that guide how individuals indicate their financial resources. These patterns are not formed in isolation; they are shaped by a complex interplay of economic conditions, social pressures, and psychological factors (Kotler & Keller, 2016). Understanding this behavior is therefore critical for analyzing broader economic trends.

The millennial generation, generally defined as individuals born between 1981 and 1096, exabits distinct spending habits. As the first cohort to grow up with the internet, they are the

primary driver behinds the expansion of e-commerce (Smith & Anderson, 2016). Their financial outlook was significantly influenced by experiencing the great recession during their formative years, an event that instilled a sense of fiscal caution and a heightened desire for value (Howe & Strauss, 2009).

Research indicates that millennials often prioritize expenditure on experiences – such as travel, dining, and wellness – over the accumulation of material possessions, a notable contrast to the priorities of previous generations (Barton et al., 2014; Twenge, 2014). This generation also demonstrate an aversion to debt, particularly from student loans, which has led many to postpone major life decision like buying a home (Brown et al., 2017; Goodman, 2018). However, this general caution does not equate to frugality in all aspects. They show a willingness to spend on premium, branded products align with their personal values, such as sustainability and ethical product (Nielsen, 2015).

Their consumption patterns are defined by a deep reliance on technology. Millennials are prolific users of financial technology (FinTech) and are quick to adopt alternative payment methods (Arnold & Baker, 2019), seamlessly integrating tools like mobile payments and BNPL services into their shopping routines (Klarna, 2021). Furthermore, social media wields considerable influence over their spending, with peer recommendations and influencer marketing carrying substantial weight (Diafarova & Rushworth, 2017). They typically conduct extensive online research before purchasing, seeking authenticity and social proof (Forrester, 2019). In summary, millennial spending a complex amalgamation of value-seeking and experience-driven consumption, all profoundly shaped by digital platforms and a unique set of socio-economic circumstances.

### ***BNPL***

A significant factor influencing modern spending is the rise of Buy Now, Pay Later (BNPL) services, BNPL is a form of short-term financing that allows consumers to defer payments for purchases, usually by breaking the cost into interest-free installments (Work Bank, 2021). This payment model has profoundly reshaped purchasing habits.

The core mechanism of BNPL works by separating the act of buying from the act of paying (Prelec & Loewenstein, 1998). This decoupling can reduce the perceived cost of items (Keller, 2020), which lowers psychological barriers to purchase and can increase impulse buying (Ritzer, 2019). Evidence shows that consumers often spend more when using BNPL than they would with cash or a debit card (Consumer Financial Protection Bureau, 2022).

These services are particularly influential among younger consumers. Millennials are the primary adopters of this technology (McKinsey & Company, 2022), attracted by its seamless digital integration and the fact it often bypasses traditional credit checks (Barrett, 2021). However, this very accessibility raises concerns. Studies have linked BNPL usage to higher levels of personal debt and increased financial stress (Reserve Bank of Australia, 2021).

Ultimately, BNPL acts as a powerful behavioral nudge. It reshapes spending patterns by making large purchases feel immediately affordable, thereby redefining budgeting and consumption norms in the digital economy (Berg et al., 2020).

### ***BNPL and spending behavior***

Research has established a clear connection between BNPL services and significant shifts in consumer spending. By decoupling the purchase from the payment, these services reduce the immediate financial pain associated with spending (Prelec & Loewenstein, 1998). This separation encourages consumers to spend more and add more items to their carts (Consumer Financial Protection Bureau, 2022).

BNPL facilitates impulse purchases by making expensive items appear more affordable through small, staggered payments (Ritzer, 2019). Users frequently report that they spend more with BNPL than they would with other payment methods (MnKinsey & Company, 2022), a trend especially evident among their primary user base of younger consumers (Barrett, 2021).

A significant number of new researches suggest that BNPL services can lead to unhealthy spending habits. A key problem is that users often build up debts with several different BNPL providers at once (Reserved Bank of Australia, 2021). This can easily push people into financial overextension, making them economically vulnerable (World Bank, 2021). The service is so convenient that it makes it easy for individuals to ignore their usual budget limits. Because of this, understanding how BNPL affects spending is now critical for developing effective consumer protection policies. Regulators, like the UK's Financial Conduct Authority, are increasingly focused on the impact of these services on people's financial health.

Recent studies point to specific features of BNPL that explain this behavior such as:

Shrestha (2022) found that because BNPL requires so little effort to use, it directly leads to more impulse buys. The study concluded that when there is less friction in a transaction, people's natural restraint on spending weakens. Similarly, Thompson and Lee (2021) showed that BNPL's simple application process meant people made purchasing decisions 35% faster than they would with traditional credit. This speed resulted in shoppers comparing prices less and ultimately spending more. Furthermore, Davis and Chen (2020) argued that the sheer ease of using the service was a bigger factor in its popularity and in driving higher spending than even the practical usefulness of spreading out payments.

O'Connell (2021) conducted an experiment that revealed mere exposure to a BNPL option at checkout increased overall basket size by 22%. This suggests that awareness alone can trigger a mental permission to spend more. Patel et al. (2023) surveyed young adults and discovered that high brand recognition of specific BNPL providers was strongly associated with a greater willingness to finance non-essential goods. Their research indicated that marketing saturation normalizes deferred payment as a standard spending method. Fitzpatrick and Singh (2022) analyzed social media data, finding that targeted BNPL advertisements significantly increased product-specific spending intent among the users they reached.

Kim (2020) found that consumers with limited access to traditional credit utilized BNPL at a higher rate. Their spending via these services often represented a larger portion of their monthly income compared to prime borrowers. A report by the Consumer Financial Protection Bureau (2022) provided empirical data showing that consumers frequently held multiple BNPL loans simultaneously. This easy access often led to loan stacking and elevated debt burdens that were

difficult to track. The Reserve Bank of Australia (2021) corroborated this, finding a negative correlation between the number of active BNPL accounts a user held and their personal savings rate.

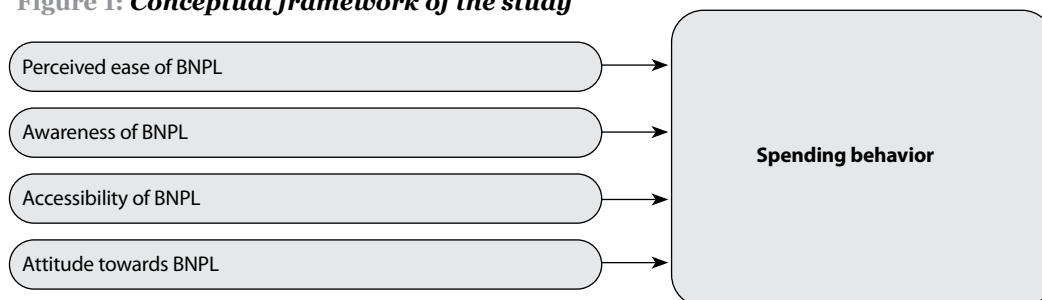
Bialowolski et al. (2021) demonstrated that a positive attitude towards BNPL was a significant predictor of financial distress. Their longitudinal study linked optimistic views on BNPL to a higher likelihood of missing subsequent payments. Gupta and Benson (2023) explored the role of financial literacy. They found that even consumers with negative attitudes towards debt were willing to use BNPL. This was due to a cognitive disconnect where BNPL was not categorized as traditional debt. This attitude permits spending that would otherwise be avoided. Alrawi et al. (2022) found that users who viewed BNPL as a modern budgeting tool felt more in control of their finances. This perception, however, was associated with just as much increased spending as those who used it for luxuries.

In summary, the empirical evidence consistently shows that the ease, awareness, accessibility, and positive perceptions of BNPL services lower psychological barriers to spending. This leads to larger, more frequent, and often more impulsive purchases, with significant implications for consumer debt and financial well-being.

Based on a review of existing literature, a clear and significant research gap has been identified. There is a lack of understanding concerning how BNPL services affect the spending habits of millennial in non-Western counties, specifically Nepal. Current research has primarily been conducted in Western markets, leaving the unique socio-economic environment of Nepal unexamined. This environment includes distinct levels of financial literacy, cultural perspectives on debt, and a different regulatory structure, no empirical study has yet explored how factors such as the perceived ease of use, general awareness, accessibility, and consumer attitudes towards BNPL shape the financial conduct of Nepal millennial. This study intends to fill this void by delivering insights specific to the local context, which are crucial for developing effective consumer protection measures and informed policy in emerging economies.

This research is grounded in the Theory of Planned Behavior (TPB), developed by Ajzen in 1991. This theory states that a person's actions are driven by their intention to perform them. This intention, in turn, is shaped by three key elements: their personal attitude, the social pressures they feel, and their sense of control over the behavior. This framework aligns directly with the factors examined in this study. A user's attitude reflects their personal feelings about BNPL services (Bialowolski et al., 2021). Awareness is largely influenced by so-

**Figure 1: Conceptual framework of the study**





cial norms and external information, such as marketing (Patel et al., 2023). Meanwhile, the ease of use and accessibility of BNPL platforms increase a user's perceived control over their transactions (Shrestha, 2022; Kim, 2020). When combined, these factors – attitude, awareness, and control – strengthen a person's intention to use BNPL. This heightened intention frequently leads to increased and often more impulsive spending, as noted in recent reports (O'Connell, 2021; CFPB, 2022).

### ***Operational definitions***

To ensure clarity and precision in this research, the key variables are defined as follows:

- ***Perceived ease of BNPL*** describes how much effort a person thinks is involved in using a BNPL service. This can be measured by asking users about their experience with the sign-up and payment process, focusing on whether they found it simple, quick, and straightforward.
- ***Awareness of BNPL*** refers to how familiar a user is with BNPL as a way to pay. This can be measured by seeing if they could name any BNPL companies and if they remembered seeing advertisements for these services online or at digital checkouts.
- ***Accessibility of BNPL*** refers to the user's perception of how easily they can obtain BNPL credit. This is characterized by factors such as the simplicity of eligibility requirements, the speed of credit approval, and the absence of barriers that would prevent a user from having multiple BNPL loans at one time.
- ***Attitude towards BNPL*** describes the user's overall positive or negative feeling about using BNPL services. This is measured by understanding their personal assessment of BNPL; specifically, whether they view it as a helpful, modern tool for managing cash flow and budgets or if they perceive it similarly to conventional forms of debt.
- ***Spending behavior*** of millennial refers to how people's buying habits change when they use BNPL. It means spending more money overall, buying more items on impulse, and normalizing the use of credit for everyday purchases, compared to using cash or a debit card.

### ***Hypotheses based on empirical review:***

H1: A higher perceived ease of using BNPL services is positively associated with increased spending behavior.

H2: Greater awareness of BNPL options is positively associated with increased spending behavior.

H3: Increased accessibility to BNPL services is positively associated with increased spending behavior.

H4: A more positive attitude toward BNPL is positively associated with increased spending behavior.

### **Methods and Materials**

This study employed a quantitative research approach to empirically investigate the relationship between Buy Now, Pay Later services and spending behaviors of millennials. It was used to make objective measurement of variables and the statistical testing of hypothesized relationship between them (Creswell & Creswell, 2018). To facilitate this, a cross-sectional survey design was implemented. This design is effective for collecting data from a sample of a population at a single point in time, and is widely used in behavioral and consumer finance

research (Barrett, 2021; Shrestha, 2022).

The target population for this study consisted of members of the millennial generation (born between 1981 and 1996) who reside in the Lalitpur district of Nepal and were either current or previous users of BNPL services. Lalitpur was selected as the study site because it is a major urban and educational hub in Nepal with a high concentration of young, digitally-active adults (NRB, 2022; Pradhan, 2020).

As the exact size of this specific user population was unknown, it was treated as statistically infinite for sample size calculation process. The minimum required sample size was determined using the standard formula for estimating a proportion in a large population:  $n = Z^2 * p * (1 - p) / e^2$  (Daniel, 1999; Singh & Masuku, 2014).

Where:

Z: the Z-score corresponding to the chosen confidence level. For a 95% confidence level,  $Z = 1.96$ .

p: the estimated population proportion. A conservative value of 0.5 was used.

e: the desired margin of error, which was set  $\pm 5\%$  (0.05).

Applying this formula:  $n = (1.96)^2 * 0.5 * (1 - 0.5) / (0.05)^2 = 384.16$ . Therefore, a minimum sample size of 385 respondents was required. A non-probability judgmental sampling technique was employed to deliberately select participants who met the study's critical criterion: being a millennial and a prior BNPL users. This ensured the collected data was relevant and provided meaningful insights from the target population (Etikan et al., 2016).

For this study, primary data was collected using a structured, self-administered questionnaire composed of closed-ended questions. The instrument utilized five-point Likert scales (from 1 = Strongly disagree to 5 – Strongly agree) to measure the key construct: perceived ease, awareness, accessibility, attitude towards BNPL, and spending behavior (Joshi et al., 2015).

**Table 1: Variables and indicators used in constructing questionnaire**

Variable	Author, (year)	Indicators
Perceived ease of BNPL	Shrestha (2022)	Minimal effort required to obtain credit; reduces transactional friction.
	Thompson & Lee (2021)	Streamlined application process; faster decision-making compared to traditional credit.
	Davis & Chen (2020)	Perceived ease of use as a primary driver for adoption.
	Keller (2020)	Simplifies the checkout process; reduces perceived complexity of payment.
Awareness of BNPL	O'Connell (2021)	Mere exposure to BNPL option at checkout increases basket size.
	Patel et al. (2023)	High brand recognition of BNPL providers; marketing saturation.
	Fitzpatrick & Singh (2022)	Targeted social media advertisements increase product-specific spending intent.
	Statista (2022)	Millennial exposure to digital and social media marketing of financial products.
Accessibility of BNPL	Kim (2020)	Higher usage among consumers with limited access to traditional credit.
	Consumer Financial Protection Bureau (2022)	Ability to hold multiple BNPL loans simultaneously (loan stacking).
	Reserve Bank of Australia (2021)	Easy sign-up process; minimal eligibility checks.
	Barrett (2021)	Avoidance of traditional credit checks; seamless digital integration.

Variable	Author, (year)	Indicators
Attitude towards BNPL	Bialowolski et al. (2021)	Positive attitude as a predictor of financial distress; optimism leading to missed payments.
	Gupta & Benson (2023)	Cognitive disconnect (not categorizing BNPL as debt); willingness to use despite debt aversion.
	Alrawi et al. (2022)	Viewing BNPL as a modern budgeting tool; feeling of financial control.
	Ritzer (2019)	Perception of BNPL as a smart financial tool rather than debt; justification for increased spending.
Spending behavior	Consumer Financial Protection Bureau (2022)	Increased overall spending and larger basket sizes when using BNPL compared to other payment methods.
	Ritzer (2019)	Increase in impulse purchase and normalization of credit utilization for daily expenses.
	McKinsey & Company (2022)	Users report spending more than they would with other payment methods.
	Reserve Bank of Australia (2021)	Correlation between number of active BNPL accounts and a decrease in personal saving rate.

The internal consistent of the study scales was confirmed through Cronbach's Alpha, with all values exceeding the reliability threshold of 0.7 (Nunnally & Bernstein, 1994). Content validity was established during the instrument design phase. Convergent validity was measured through Composite Reliability (CR) with the value of 0.7 and Average Variance Extracted (AVE) with the value of 0.5 (Hair et al., 2019). Discriminant validity was also confirmed using established criteria (Fornell & Larcker, 1981). Informed consent was obtained from all participants prior to survey administration to ensure ethical compliance.

Data was analyzed using two phases. The first phase involved using frequencies and percentages to summarize to describe the demographic profile of respondents. The second phase employed inferential techniques to test the study's hypotheses. Pearson correlation was used to examine the relationships between the independent variables (perceived ease, awareness, accessibility, attitude) and the dependent variable (spending behavior). Subsequently, multiple regression analysis was applied to determine the extent to which each independent variable predicted changes in spending behavior, thereby testing the hypothesized relationships (H1 – H4) as outlined in the study.

## Results

### *Demographic profile of respondents*

The study collected data from 385 respondents in early 2025. The sample showed a balanced gender composition. Males accounted for 53.8% of participants. Females represented 46.2%. Regarding the age distribution of millennial generation, the largest group was aged 28-31 years. This represented 27.8% of respondents. Those aged 36-39 constituted 26.8% of the sample. Participants aged 32-35 made up 24.4%. The smallest group was aged 40-43, representing 21.0%. Educational attainment was notably high. Most respondents held a Bachelor's

degree. This group accounted for 41.3% of participants. Another 33.5% had completed up to higher secondary education. Those with Master's degrees or higher constituted 25.2%. Regarding the frequency of BNPL service usage, the data indicates varied engagement levels. A plurality of respondents reported using BNPL services only occasionally (35.8%,  $n=138$ ). Those who used them frequently constituted 28.1% ( $n=108$ ) of the sample, while very frequent users accounted for 16.1% ( $n=62$ ). Conversely, 20.0% ( $n=77$ ) of respondents reported rarely utilizing these services. The sample effectively captured the key demographic characteristics of BNPL users in urban Nepal. The composition was appropriate for investigating the research questions. The profile aligned with the target population of educated, digitally-active millennials.

### **Reliability test**

The results, as presented in the table, indicate that all constructs demonstrated high reliability, with Cronbach's Alpha values well above the accepted threshold of 0.7. Specifically, perceived ease of BNPL ( $\alpha = 0.823$ ), awareness of BNPL ( $\alpha = 0.798$ ), accessibility of BNPL ( $\alpha = 0.862$ ), and attitude towards BNPL ( $\alpha = 0.791$ ) all showed strong internal consistency. These results confirm that the items used to measure each variable were highly correlated and consistently captured the intended constructs, ensuring the reliability of the scales for further statistical analysis in this study.

**Table 2: Reliability test**

Variables	Items	Cronbach Alpha
Perceived ease of BNPL	4	0.823
Awareness of BNPL	4	0.798
Accessibility of BNPL	4	0.862
Attitude towards BNPL	4	0.791

*Note: Survey data 2025*

### **Validity test**

Validity tests were conducted to assess the measurement model. All constructs demonstrated strong convergent validity. Composite Reliability values exceeded the accepted threshold of 0.70. The CR for Perceived Ease was 0.891. Awareness obtained a CR of 0.872. Accessibility scored a CR of 0.902. Attitude achieved a CR of 0.885. All Average Variance Extracted values were above the 0.50 benchmark. Perceived Ease had an AVE of 0.674. Awareness showed an AVE of 0.633. Accessibility recorded an AVE of 0.699. Attitude demonstrated an AVE of 0.658. Discriminant validity was also established. The square root of each construct's AVE was larger than its correlations with other constructs. This confirmed that all constructs were distinct and measured different phenomena. The measurement model was deemed valid and reliable for further analysis.

**Table 3: Convergent and discriminant validity test**

Construct	CR	AVE	1	2	3	4
Perceived Ease of BNPL	0.891	0.674	0.821			
Awareness of BNPL	0.872	0.633	0.412	0.796		
Accessibility of BNPL	0.902	0.699	0.385	0.367	0.836	
Attitude towards BNPL	0.885	0.658	0.398	0.451	0.324	0.811

Note: Survey data 2025

### Correlation

Spending behavior strongly correlates with perceived ease. The correlation coefficient is 0.712. Spending also strongly links to accessibility. This correlation is 0.685. A moderate relationship exists with attitude. The coefficient is 0.598. Awareness shows a weaker link to spending. The value is 0.423. All correlations are statistically significant. The p-values are less than 0.01. Relationships between predictors are weaker. This indicates no multicollinearity issues. Each variable adds unique explanatory power.

**Table 4: Correlation results**

Variable	Spending Behavior	Perceived Ease of BNPL	Awareness of BNPL	Accessibility of BNPL	Attitude towards BNPL
Spending Behavior	-				
Perceived Ease of BNPL	.712**	-			
Awareness of BNPL	.423**	.218**	-		
Accessibility of BNPL	.685**	.523**	.187*	-	
Attitude towards BNPL	.598**	.401**	.325**	.294**	-

Note: \*\* $p < 0.01$ , \* $p < 0.05$

Note: Survey data 2025

### Regression

The results clearly identified the most influential factors. Perceived ease of BNPL was the strongest predictor. It had a Beta coefficient of 0.412. This was the highest value among all predictors. Its p-value was 0.000. This value is far below the 0.05 significance threshold. Therefore, the relationship is statistically significant. Accessibility of BNPL was the second strongest predictor. It had a Beta coefficient of 0.285. Its p-value was 0.002. This is also well below the 0.05 level. It confirms a significant positive relationship with spending. Awareness of BNPL was also a significant predictor. However, its effect was notably weaker. It had a Beta coefficient of 0.138. Its p-value was 0.025. This is still below the 0.05 significance level. Attitude towards BNPL had a Beta of 0.067. Its p-value was 0.267. This value exceeds the 0.05 threshold. Therefore, it was not a statistically significant predictor. The regression model effectively explains the drivers of spending. Practical features like ease and access are paramount. Conscious attitudes appear less impactful on actual behavior.

**Table 5: Regression analysis results**

Model	Coefficients		t	Sig.
	Unstandardized Coefficients	Standardized Coefficients		
	B	Beta		
(Constant)	1.024	-	4.112	.000
Perceived Ease of BNPL	0.408	0.412	6.873	.000
Awareness of BNPL	0.131	0.138	2.245	.025
Accessibility of BNPL	0.301	0.285	4.892	.002
Attitude towards BNPL	0.059	0.067	1.112	.267

Note: Survey data 2025

The study proposed four hypotheses based on empirical review. Each hypothesis was tested using the regression results. Hypothesis One (H1) stated a higher perceived ease of BNPL is positively associated with increased spending. The analysis strongly supports this hypothesis. The relationship is positive, as predicted. The Beta coefficient of 0.412 indicates a strong association. The extremely low p-value (0.000) confirms the result is not due to chance. H1 is fully accepted. Hypothesis Two (H2) proposed that greater awareness of BNPL options is positively associated with increased spending. The analysis supports this hypothesis. The relationship is positive. The Beta coefficient is 0.138. The p-value of 0.025 is statistically significant. Therefore, H2 is accepted. However, its effect is the weakest among the significant predictors. Hypothesis Three (H3) predicted that increased accessibility to BNPL services is positively associated with increased spending. The analysis provides strong support for H3. The relationship is positive and meaningful. The Beta coefficient of 0.285 shows a moderate to strong association. The highly significant p-value of 0.002 allows us to confidently accept H3. It is the second most important driver of spending behavior. Hypothesis Four (H4) suggested a more positive attitude toward BNPL is positively associated with increased spending. The analysis fails to support this hypothesis. While the coefficient is positive, it is very small (Beta = 0.067). Crucially, the p-value of 0.267 is far above the 0.05 significance level. This means the observed relationship is not statistically significant. There is no reliable evidence that attitude influences spending. Therefore, H4 is rejected.

## Discussions

The findings of this study provide significant insights into the drivers of BNPL-induced spending behavior among millennials in Nepal, largely aligning with yet also contrasting existing global literature. The strong, positive relationship between perceived ease of BNPL and increased spending (H1 supported) powerfully echoes international research. This result confirms the foundational principle that reducing transactional friction disinhibits spending controls (Shrestha, 2022). The seamless, integrated nature of BNPL at checkout decouples the act of purchasing from the psychological pain of paying (Prelec & Loewenstein, 1998), a mechanism that appears universally effective. The finding that ease was the strongest predictor underscores its critical role in the Technology Acceptance Model (Davis & Chen, 2020),

suggesting that the effortless nature of BNPL adoption is a more potent driver of consumption than even its perceived usefulness for budgeting.

Similarly, the support for H3 confirms that increased accessibility to BNPL - characterized by easy sign-ups, minimal checks, and loan stacking - leads to higher spending. This aligns with concerns raised by regulators (Reserve Bank of Australia, 2021; Consumer Financial Protection Bureau, 2022) and academic work (Kim, 2020) that easy access to this form of credit, particularly for those with limited traditional options, can facilitate financial overextension. The validation of H3 in the Nepali context suggests that the risks associated with democratized, easy credit are not confined to Western economies with mature financial systems but are equally potent in emerging markets.

The support for H2, indicating that greater awareness leads to increased spending, also aligns with global marketing studies. The finding corroborates experimental research showing that mere exposure to a BNPL option can increase basket size (O'Connell, 2021) and that marketing saturation normalizes its use (Patel et al., 2023). This suggests that the aggressive digital and social media marketing strategies employed by BNPL providers are effectively shaping consumer behavior in Nepal as they do elsewhere.

However, the most striking and counterintuitive finding is the rejection of H4. The analysis found that a positive attitude towards BNPL was not a statistically significant predictor of spending behavior. This contrasts with several Western studies that linked optimistic attitudes and the cognitive disconnect of not viewing BNPL as "real debt" to financial distress and increased spending (Bialowolski et al., 2021; Gupta & Benson, 2023). This divergence may be explained by the unique Nepali socio-economic context. It is possible that for Nepali millennials, BNPL use is driven more by pragmatic necessity and the allure of its functional benefits (ease, access) than by a deeply held, positive attitude toward the product. People often use these services because they are convenient or because they don't have many other ways to pay, not because they truly believe its best financial tool available. This reveals a crucial cultural difference in what drives spending. In the West, people might spend more because they have a positive view of the service itself. In Nepal, however, people's spending is driven by how easy the service is to use and access, regardless of whether they personally like or trust it.

## Conclusion

This study explored how BNPL services affect the purchasing behavior of millennials in Lalitpur, Nepal. Through the survey of 385 BNPL users, this study measured the impact of four main factors: the service's ease of use, user awareness, its accessibility, and users' personal attitude towards it. The goal was to provide insights from a non-western context like Nepal, where the economic reality, level of financial literacy, and cultural perceptions of debt in Nepal are substantially different from those in Western countries.

The findings demonstrate that the simplicity of BNPL, use awareness, and wide accessibility all strongly encourage increased spending. Among these, the ease of using the ser-

vice proved to be the most significant factor. In contrast, holding a positive attitude towards BNPL was found to have not significant impact on spending. This indicates that the seamless design and ready availability of BNPL – not user's conscious financial opinions—are the primary forces behind increased consumption among Nepali millennials. This finding supports global research on how separating payment from purchase encourages spending, yet it presents a crucial contrast to Western studies, which often find that positive user attitudes are a key factor in financial overextension.

The importance of this study lies in its demonstration that while BNPL leads to increased spending across different cultures, the reasons behind this behavior can be deeply specific to a local context, in Nepal, practical utility and convenience appear to override personal attitude. This insight suggests that consumer protection efforts should be tailored accordingly. Regulators may find it more effective to focus on shaping the product itself—by mandating stricter credit assessments, enforcing clear spending limits, and ensuring absolute transparency in terms and conditions – rather than focusing exclusively on financial education programs designed to change user perceptions.

This study provides a foundational evidence base for Nepal regulators, including Nepal Rastra Bank, to develop frameworks that protect consumers from potential debt risks without hindering financial innovation. For future research, long-term studies are needed to track the enduring financial outcomes of BNPL use. Further investigation into how cultural norms and levels of financial literacy influence this behavior could also shed light on the disconnect between attitude and spending observed in this market.

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### ***Authors' contribution statement***

Dr. Tara Prasad Gautam designed the study, collected the data, and wrote the discussion. Chunika, Smriti, and Alish drafted the introduction, literature review, and conclusion, respectively. Anish wrote the methods, while Richa analyzed the data. All authors reviewed the final manuscript.

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### ***Declaration of conflicting interest***

Authors declare no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

## Appendix 1: Plagiarism and AI detection test report

Tara Prasad Gautam

BNPL Services and Spending Behaviors of Millennial Generation in Lalitpur District

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# Cyber-Security Awareness among College Students – Systematic Review

Aahadmad Rojin Miya<sup>1\*</sup>, Abdul Aziz Miya<sup>2</sup>, Ganesh Joshi<sup>3</sup>, Sunil Chitrakar<sup>4</sup>,  
Rojan Dangol<sup>5</sup> Nilaw Manandhar<sup>6</sup>

- 1 Faculty Member, United College, Tribhuvan University, Lalitpur, Nepal
- 2 Faculty Member, United College, Tribhuvan University, Lalitpur, Nepal
- 3 Faculty Member, United College, Tribhuvan University, Lalitpur, Nepal
- 4 Faculty Member, United College, Tribhuvan University, Lalitpur, Nepal
- 5 BCA Student, United College, Tribhuvan University, Lalitpur, Nepal
- 6 BCA Student, United College, Tribhuvan University, Lalitpur, Nepal

\*Corresponding Author1 Email:  
aahamadmiya@united.edu.np

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## Abstract

*In today's digital age, cybersecurity has become a critical concern, especially for undergraduate students who are often vulnerable to cyber threats. Despite frequent internet usage, many students lack the necessary awareness and knowledge to protect themselves from these risks. This study aims to assess the level of cyber-security awareness among College students. Through a comprehensive review of 30 research articles sourced from academic databases such as Google Scholar, IEEE Xplore, and JSTOR, this study employed a qualitative research approach using secondary data from existing studies. The findings reveal that while students have a basic understanding of common cyber threats such as phishing, malware, and identity theft, they often fail to implement appropriate security measures. Several studies indicated a strong interest among students in enhancing their cybersecurity knowledge, suggesting a demand for more targeted educational initiatives. Additionally, the review highlighted variations in cybersecurity awareness based on factors such as academic discipline, gender, and age. The study recommends the integration of cybersecurity training into university curricula, using familiar platforms like social media to enhance engagement.*

**Keywords:** Cyber-security, Awareness, Undergraduate students, Empirical review

## Introduction

In today's academic environment, college students are deeply immersed in a digital world. They depend on online systems for nearly every aspect of their education, from accessing course materials and submitting assignments to handling administrative needs. While this connectivity is essential, it also opens the door to significant risks. Cybersecurity awareness is no longer

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a niche skill but a fundamental part of being a student. It requires a constant understanding of online dangers and the consistent use of safe practices to avoid them.

The digital landscape students must navigate is filled with threats. These include convincing phishing emails that appear to be from the university, malicious software disguised as helpful programs, and manipulative social engineering scams aimed at stealing passwords and private information. The fallout from a security breach is serious and extends far beyond a temporary disruption. Studies show that such incidents can cause significant financial harm, create considerable emotional stress, and inflict lasting damage on a student's academic and personal standing. The loss of sensitive research or financial data can directly hinder educational progress and personal stability. Moreover, because universities store immense amounts of valuable data, a security breach that starts with one student can quickly grow into a major institutional crisis, undermining trust throughout the entire campus community (Chandran, 2019). The Cybersecurity and Infrastructure Security Agency (2020) have explicitly noted that educational institutions are prime targets for cybercriminals due to the rich data they hold, making every student a potential entry point.

Despite this risky environment and their status as digital natives, a troubling disconnect exists for many undergraduates. Frequent internet use does not automatically translate to secure online practices. There is a persistent and well-documented gap between students' theoretical recognition of cyber threats and their practical implementation of defensive measures. For instance, a study by Lukanovic (2017) involving over 200 internet users found that while vast majorities were aware of threats like viruses, a significant portion failed to take basic protective actions, with 40% of respondents not installing any security software. This suggests that awareness alone is insufficient without the motivation and knowledge to apply that awareness consistently. This behavioral gap constitutes the core problem, leaving a large segment of the student population vulnerable to exploitation and undermining the security posture of their institutions.

While the importance of cybersecurity is universally acknowledged, a specific research gap persists. Many studies offer a generalized view of student awareness, but there is a distinct lack of synthesized, nuanced evidence tailored to specific institutional contexts like that of United College. A deeper understanding is needed that moves beyond simple metrics to explore the underlying factors that influence awareness levels. Key questions remain about how awareness may vary across different academic disciplines, year of study, or gender. A systematic review is necessary to consolidate existing findings and provide a clear, evidence-based profile of the undergraduate student body, identifying not just what students know, but how they behave and what factors shape their cybersecurity posture.

This systematic review is therefore guided by the primary research question: What is the level of cyber security awareness among college students? To answer this, the study aims to synthesize existing literature to evaluate students' knowledge of prevalent threats like phishing and malware. It will also assess their behavioral patterns regarding practical security measures such as password hygiene and software updates. A further objective is to

identify and analyze key correlating factors, including academic discipline, gender, and prior training, that are associated with varying levels of cybersecurity preparedness. Finally, the study will explore students expressed interest in further education to gauge the potential receptivity to new training initiatives.

The rationale for this work is both practical and scholarly. It seeks to contribute to the academic discourse on cybersecurity behaviour by building a coherent model of awareness specific to the undergraduate demographic. More practically, its findings are intended to provide university administrators, IT departments, and faculty with a robust, data-driven foundation for action. By pinpointing precise vulnerabilities and knowledge gaps, the review will inform the development of targeted educational campaigns, workshops, and curriculum integrations that effectively address the real needs of the student population. The work of Rek and Milanovski (2017), which found that secondary students often underestimated the risks of sharing personal information online, underscores the need for such targeted education that begins early and continues through university.

Based on a preliminary assessment of the literature, this review is expected to yield several key outcomes. It will likely confirm a significant disparity between theoretical knowledge and practical application among students. The synthesized findings will probably reveal discernible variations in awareness levels across different student demographics, suggesting that a one-size-fits-all approach to cybersecurity education is inadequate. Furthermore, the review is anticipated to highlight a strong student interest in enhancing their cybersecurity knowledge, indicating a ready audience for improved institutional support and training resources. Ultimately, this study will provide a consolidated evidence base to guide the creation of more effective interventions designed to foster a more resilient and security-conscious campus culture.

## **Methods and Materials**

### ***Protocol and registration***

The study employed a systematic review methodology to synthesize existing literature on cybersecurity awareness among students. The process was rigorous and designed to minimize bias, following the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) framework, even though the review protocol was not pre-registered in a public prospective register.

### ***Eligibility criteria***

A clear and specific inclusion and exclusion criteria were defined to ensure the review focused on the most relevant and high-quality evidence.

a. Inclusion: Studies involving higher education students, with a focus on empirical investigation into cyber security awareness/knowledge/attitudes/behaviors/interventions. It included qualitative, quantitative, mixed-methods, and other systematic reviews published in English language between 2010 and 2024.

b. Exclusion: Studies on non-undergraduate populations, purely technical papers without a human factor component, and non-peer-reviewed literature.

### ***Data sources***

A comprehensive literature search was conducted using multiple electronic databases to ensure broad coverage of relevant studies. The databases included Google Scholar, IEEE Xplore, SpringerLink, ACM Digital Library, ScienceDirect, JSTOR, ArXiv, and ResearchGate. In addition to peer-reviewed sources, grey literature such as conference proceedings and institutional reports was also examined to reduce the risk of publication bias and capture diverse perspectives on the topic.

### ***Search strategy***

The search strategy was developed using a combination of Boolean operators and carefully selected key terms to maximize retrieval of relevant studies. Keywords included “cybersecurity awareness” OR “information security awareness,” “undergraduate students” OR “college students” OR “university students,” and “cyber threats” OR “online safety” OR “cybercrime awareness.”

### ***Study selection process***

The study selection process was conducted in three stages to ensure rigor and transparency. In the identification stage, records retrieved from the databases were imported into a reference manager, and duplicates were removed. During the screening stage, two independent reviewers assessed the titles and abstracts against the predefined eligibility criteria. In the full-text review stage, potentially relevant articles were examined in detail, with disagreements resolved through consensus. Ultimately, 30 studies met the inclusion criteria and were included in the final synthesis.

### ***Data extraction***

Data extraction was conducted using a standardized form designed to systematically capture relevant information from each study. The form recorded details such as authors and publication year, country and institutional context, research design and methodology, sample characteristics, key focus areas and outcomes, and the main findings and recommendations. To ensure accuracy and reliability, the extraction process was carried out independently by two reviewers, with discrepancies resolved through discussion and consensus.

### ***Data syntheses***

This study used a systematic qualitative (narrative) synthesis to review 30 articles on undergraduate cybersecurity awareness. Key findings, patterns, and gaps were extracted and organized in a table, highlighting students’ basic awareness, skill gaps, variations by discipline, age, and gender, and the impact of educational interventions. This approach provided a clear, structured summary of evidence to inform targeted strategies for improving cybersecurity education.

## Result

The systematic search across eight databases and grey literature initially identified 1,250 records, of which 280 duplicates were removed. Following title and abstract screening of 970 records, 915 were excluded for not meeting eligibility criteria, leaving 55 full-text articles for detailed review. After excluding 27 studies for reasons such as wrong population or outcomes, 28 studies published between 2016 and 2024 were included. These studies spanned diverse countries, including Malaysia, the US, India, Saudi Arabia, Nigeria, Sudan, Jordan, Vietnam, Hungary, Peru, the Philippines, Uganda, Slovenia, Ecuador, Somalia, and the UK, reflecting the global relevance of undergraduate cybersecurity awareness. Methodologically, most studies were quantitative (n=21) using cross-sectional surveys, with a few qualitative (n=2), mixed-methods (n=4), and one systematic review, involving sample sizes from 100 to over 9,000 participants. The studies examined cybersecurity knowledge, threat awareness (e.g., phishing, malware, identity theft), security practices, risk perception, and attitudes toward cybersecurity education. Results are presented below:

Author and date	Results
Al-Janabi and AlShourbaji (2016)	This study assesses information security awareness among academic staff, researchers, students, and employees in Middle Eastern educational institutions. The results show a lack of understanding regarding the importance of security principles and their practical application. The paper suggests that comprehensive awareness and training programs are crucial to improve security practices and prevent negative consequences on IT systems and personal security. Recommendations are provided to address the identified weaknesses.
Rani et al. (2017)	This study aims to assess cybersecurity awareness among Malaysian pre-university students. Using a Cyber Security Awareness Level questionnaire and stratified sampling, 318 students participated. Findings revealed average awareness, with no gender differences or correlation between computer usage and awareness. Students with better computing skills showed higher awareness. Practical solutions were suggested.
Zahri et al. (2017)	This study assesses the cyber security situational awareness of Malaysian primary and secondary school students. Using an online survey, data were collected from 9,158 students across rural and urban areas. Findings suggest the need for targeted educational modules to improve students' understanding of online security risks and foster healthy cyber habits.
Senthilkumar (2017)	This study assesses cyber security awareness among college students in Tamil Nadu, focusing on various internet threats like phishing, viruses, and fake advertisements. Using a well-structured questionnaire, the survey examines students' awareness levels and provides suggestions for improving security knowledge to prevent cybercrimes. The research targets major cities in Tamil Nadu.
Moallem (2019)	This study assessed cyber security awareness and attitudes among ethnically diverse college students in Silicon Valley, California. Despite recognizing that their data isn't secure on university systems, students showed limited knowledge on data protection. The findings suggested an urgent need for educational institutions to adopt proactive approaches to improve student awareness and equip them with skills to thwart cyber-attacks like identity theft and ransomware.



Author and date	Results
Frankie et al. (2019)	This study investigates the challenges and opportunities in advancing cybersecurity education in Ecuador. Through semi-structured interviews with educational leaders from 13 universities, it identifies significant impediments: skill shortages, inadequate resources, social integration issues, and governance capacity. Only 4 institutions felt somewhat prepared to educate on cybersecurity. The study calls for a national cybersecurity education strategy, multi-stakeholder collaborations, enhanced educator training, and stronger academic programs to build a skilled, cyber-literate workforce.
Mousa (2019)	Cybersecurity awareness is an important factor in the safety of internet users. The work proposed in this paper concentrates on understanding factors that affect the awareness of cyber security among the students of King Abdulaziz University (KAU). A total of 140 university students from ICT and non-ICT related fields participated in the survey. Results indicate that there is a lack of awareness to issues of cyber security and students have a moderate knowledge about it. A recommendation is provided to initiate and promote cybersecurity awareness campaigns for KAU students.
Rathod and Potdar (2019)	This study evaluates cyber security awareness among medical students, focusing on their vulnerability to cyber-crimes due to increased use of technology. Using a questionnaire-based survey, the research identifies gaps in awareness and provides recommendations to address these issues, aiming to enhance cyber security knowledge among medical students.
Potgieter (2019)	This study examines the cyber security awareness (CSA) behavior of students at Central University of Technology, focusing on the use of social media platforms like Facebook and YouTube. It reveals that while students regularly engage with these platforms, they show limited involvement with CSA initiatives. The study suggests that academic institutions enhance CSA by regularly sharing materials through familiar platforms, such as social media and institutional websites.
Garba et al. (2020)	This case study surveys Nigerian university students to assess their cybersecurity awareness and interest in learning more. The objective was to explore students' understanding of cyber-attacks and data protection, and the presence of cybersecurity programs in universities. Findings show students have basic knowledge but lack protection skills, and most universities lack active awareness programs. Students expressed interest in further cybersecurity education.
Zulkifli et al. (2020)	This study examines the cybersecurity awareness among secondary school students, teachers, and parents in Malaysia, using physical and online surveys. The aim was to assess their knowledge of cyber risks and digital citizenship. Findings show most respondents are aware of cyber threats but few implement security measures, highlighting the need for early awareness to promote healthy online habits.
Alsiddig (2020)	This study assessed cyber security awareness among 200 students and 100 faculty members in a Sudanese college, focusing on trust, passwords, and defensive attitudes. Results indicated that both groups had low security awareness and weak defensive behaviors, although faculty members scored 8% higher than students. Recommendations included developing training approaches to bridge the security gaps identified.
Hamzah (2021)	The research investigates cyber security awareness among students at Universiti Tun Hussein Onn Malaysia's Pagoh campus using a quantitative questionnaire. Out of around 100 respondents, findings indicate a moderate awareness level. The study suggests the need for proactive measures by stakeholders to mitigate and eventually eliminate cybercrime-related issues.
Mai and Tick (2021)	This study compares cyber security awareness, knowledge, and behavior among university students in Hungary and Vietnam. Surveying 313 students, the results indicate a general lack of cyber security knowledge, leading to low awareness of threats. Minor behavioral differences were observed between the two countries, particularly in areas like malware, password use, social engineering, and online scams. The study highlights cultural differences in cyber security awareness, relevant for developing global systems.

Author and date	Results
Makeri et al. (2021)	This paper examines the challenges influencing cyber security awareness campaigns among Ugandan university lecturers, focusing on factors that hinder effective behavior change. It highlights the importance of understanding how individuals perceive risks and the need for motivation, not just information. The study reviews psychological models and persuasion techniques, offering insights into successful campaign components and cultural variations, including examples from the UK and Africa.
Al-Shawabkeh and Makhadmeh (2022)	This study aimed to determine the effect of a Jordan TV program based on TRIZ theory on national security awareness among 1006 Jordanian university students from six universities. Results indicated a significant increase in awareness across six dimensions: political, economic, social, military, geopolitical, and cyber security. Female students showed higher awareness in geopolitics and cyber security, while other dimensions had similar awareness levels between genders and students of different majors and academic levels. National security awareness was medium before watching the program and high after watching it.
Escobar (2022)	This study assessed the cybersecurity knowledge among faculty, students, and administrative staff of Cagayan State University using a descriptive-correlational design. Among 1,555 respondents, messaging apps and videoconferencing were the top activities, while video downloads and uploads were least common. Administrative staff showed the highest cybersecurity knowledge, followed by faculty and students. The study concluded that although students need improvement in cybersecurity knowledge and practices, the overall community is well-informed, advocating for a comprehensive cybersecurity policy.
Alam (2022)	The education sector must prioritize cyber security as it faces increasing cyber-attacks despite staffing, funding, and resource challenges. High-profile incidents like ransom attacks on the University of Calgary and malware disruptions in the Minnesota School District highlight financial and operational risks. More seriously, breaches such as the alleged live-streaming of CCTV footage from schools in Blackpoll threaten student safety. Robust cyber security measures are essential to protect against financial loss, prevent disruption, and safeguard students.
Şener et al. (2022)	This study examines cyber security awareness, cyberbullying, and cyber victimization levels among university students during the COVID-19 pandemic. Surveying 823 students, results show 3.2% experienced cyberbullying and 35.1% were cyber-victimized. Findings highlight higher victimization among older, female students, and heavy internet users, suggesting the need for targeted interventions.
Shukla et al. (2022)	This study explores the relationship between cyber security awareness, competence, and behavior, focusing on the use of security tools and awareness of phishing attacks. Conducted through an online survey of students and staff, results show that while participants have a basic understanding of cyber threats, they adopt minimal precautions. The study highlights the importance of enhancing cyber security training and recommends integrating practical exercises to improve awareness and behaviors.
Raju and Ahma (2022)	This study examines cyber security awareness among students at UiTM Terengganu Faculty of Computer and Mathematical Sciences, particularly in the context of online learning during the COVID-19 pandemic. Using a questionnaire survey of 110 students, the results show that many students are aware of cyber security risks, including cyberattacks and cyberbullying. The study highlights the need to address weaknesses and further educate students on avoiding cyber threats.
Ahmed et al. (2023)	This comparative study aimed to assess cyber security awareness levels among graduate and undergraduate students in five universities in Mogadishu. Using one-way ANOVA and questionnaires, the study found a significant difference in awareness levels: SIMAD and Jamhuriya students faced virus attacks, SIU students struggled with password strength, Mogadishu students faced phishing attacks, and UNISO students dealt with both virus attacks and password strength issues. Recommendations included educating students and parents, securing internet services, and developing cybersecurity software.

Author and date	Results
English and Maguire (2023)	This study examines student perceptions and expectations of cyber security education within two UK universities. The goal was to balance teaching key concepts needed for workplace security practices with advanced theoretical aspects to meet accreditation requirements. Conducted activities revealed that general computing science degrees often treat security as isolated modules, posing a challenge in addressing these needs. The findings aimed to inform curriculum adjustments to better align with student expectations.
Huraj et al. (2023)	This study compares cyber security awareness between Computer Science and Media Studies students. A survey of 570 students investigated their attitudes toward cybersecurity. The results show that while awareness levels between different academic disciplines share common ground, key differences exist. This underscores the need for security education that is specifically tailored to distinct fields of study.
Alfala (2023)	This study examines how internet security awareness shapes students' views on cybersecurity and their attitude towards using a Learning Management System. A survey of 261 Saudi Arabian students found that perceptions of privacy, trust in the internet, and cyber risk shape their attitudes, with their level of security awareness influencing these relationships. The research contributes to technology adoption literature and offers insights for improving LMS usage through enhanced security awareness.
Berry (2023)	This study analyzes the challenges and solutions related to cybersecurity awareness among college students, who are highly reliant on technology for various aspects of life. It highlights risks like phishing, identity theft, and malware attacks, which can cause significant harm. The paper proposes methods to enhance cybersecurity education and awareness in this demographic.
Alves-Foss and Llego (2024)	This study investigates the correlation between the age of technology introduction and cybersecurity awareness among college students in developing countries. A survey of 200 students across Philippine universities found no correlation between internet security behavior and age-related characteristics. Most respondents accessed the internet as older teens or young adults via cell phones. The findings will inform the development of age and experience-appropriate internet security training for children in developing countries.
Tarrillo et al. (2024)	This study examines the level of Cyber Security Awareness (CSA) among 250 undergraduates from four institutions in Peru, focusing on their knowledge of cyber threats and security measures. Results show a significant gap in awareness and a correlation between students' expertise and attitudes towards CSA. Barriers to CSA include lack of expertise, time constraints, and insufficient training resources. The study recommends integrating Cyber Security education into academic programs to better equip students against digital threats.

## Key findings

A consistent theme emerges from the research on undergraduate cybersecurity awareness: there is a major disconnect between what students know and what they actually do. Most undergraduates understand basic threats like phishing in theory, but this knowledge rarely translates into safe habits. For instance, while they might recognize the term "malware," they often neglect fundamental practices such as creating strong, unique passwords or using two-factor authentication. This gap between theoretical awareness and practical application represents a significant vulnerability.

Students themselves are actively calling for more guidance, expressing a clear desire for their academic institutions to provide better cybersecurity education. They feel under-prepared and are openly receptive to learning. However, a single, generic training program

is not the answer. Studies consistently show that awareness levels vary significantly. A student's major, gender, and academic year all influence their understanding, with computer science students, for example, typically starting with more knowledge than those in the arts. This variation demands tailored educational approaches that address these distinct needs.

A primary obstacle is that existing training is often seen as boring or irrelevant, leading to poor participation when it's optional. The most successful initiatives are those that integrate cybersecurity directly into coursework and use engaging, familiar channels like social media for communication. The ultimate challenge for universities is clear: they must find ways to transform passive knowledge into consistent, everyday actions, requiring a sustained and thoughtful commitment to building a resilient campus culture.

## Discussions

The findings of this systematic review substantiate the central concerns presented in the introduction, confirming a significant and troubling deficit in cybersecurity awareness among college students. The evidence strongly supports the idea that being constantly connected does not mean students are safe online. They often understand threats like phishing and malware in a general sense, but this knowledge rarely translates into secure daily habits. This finding echoes other scholars who point out they young people, often called digital natives, can have a surprisingly shallow grasp of basic digital safety principles (Liu et al., 2018).

The gap between what students know and what they actually do is evident in the study. For example, multiple studies show that while a student might correctly identify a phishing email, they often do not understand the practical steps needed to defend themselves (Senthilkuma, 2017; Garba et al., 2020). Crucial behaviors like creating strong, unique passwords, updating software, and recognizing secure websites are frequently ignored. His tells us that simply listing potential dangers is not enough; effective websites must explain the how and why of prevention in clear, practical terms.

Furthermore, students continue to engage in risky behaviors even when they are aware of the potential consequences. Research documents that they often share private information on public forums and use unsecured public Wi-Fi for both academic and social activities, prioritizing convenience over security (Moallem, 2019). This highlights key behavioral challenges: training must make secure practices the easier and more automatic choice.

Ultimately, academic institutions themselves plat the most critical roles in addressing this issue. The literature is clear that student preparedness depends heavily on the support their institution provides (Alsiddig et al., 2020; Zulkifli et al., 2020). When cybersecurity resources are optional, inconsistent, or hard to find, students are left with a fragmented and incomplete understanding. To build a truly secure academic community, a centralized and mandatory approach is necessary. Mousa (2019) suggested that integrating core cybersecurity concepts into orientation and first-year curriculum, supported by ongoing campaigns, is essential for fostering a resilient campus culture.

## Conclusion

This study set out to understand how aware college students are of cybersecurity risks. Because students now rely so heavily on digital tools for their studies and personal lives, it is crucial to know how well they can protect themselves from online threats. This study specifically observed their knowledge of dangers such as phishing, malware, and identity theft, and whether they knew how to defend against them.

To do this, this study conducted a systematic review, carefully analyzing 27 relevant research articles from trusted academic databases. By synthesizing the findings from these studies, researchers were able to identify common themes about student readiness from different universities and countries.

The results point to a worrying gap in students' digital safety skills. This study found that while most students have a basic text book understanding of common cyber threats, this knowledge does not reliably lead to safe behavior online. There is a clear lack of practical know-how in fundamental areas, such as creating strong passwords, browsing the web securely, and using security software effectively. Making matters worse, many students know to take risks, like sharing private details on public platforms or using unsecured Wi-Fi, because it is more convenient.

In closing, this study highlights an immediate need for focused education that turns knowledge into action. This study recommends that Colleges should take the lead by weaving cybersecurity basics directly into course curricula and expanding education through workshops and ongoing campaigns. Providing students with these essential skills is a necessary step to protect their personal information and strengthen the entire college community against digital dangers.

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### ***Authors' contribution statement***

A.A. Miya led the introduction, list of references, and final revision, A. Pokharel wrote the literature and methods, R. Dangol analyzed the results, and N. Manandhar developed the discussion and conclusion.

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Authors declare no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

## Appendix 1: Plagiarism and AI detection test report

# Aahadmad Rojin Miya

## Cyber-Security Awareness among College Students – Systematic Review

 Tribhuvan University

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# The Efficacy of AI Using White Box Approach in Audit Transparency and Liquidation among Audit Practitioners in Metro Manila

*Dr. Isaias L Borres<sup>1</sup>, Dr. Ramon Daludado<sup>2</sup>, Dr. Emilio Lobederio<sup>3</sup>*

<sup>1</sup> Isaias L Borres, Our Lady of Fatima University, Manila, Philippines

<sup>2</sup> Ramon Daludado, Our Lady of Fatima University, Manila, Philippines

<sup>3</sup> Emilio Lobederio, Our Lady of Fatima University, Manila, Philippines

\*Corresponding Email:  
togotinga@fatima.edu.ph

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## Abstract

*This study examines the efficacy of artificial intelligence (AI) utilizing a White Box Approach in enhancing audit transparency and liquidation among practitioners in Metro Manila. A descriptive quantitative research design was employed, with data collected via an online survey from 30 purposively selected audit professionals. Statistical analysis, including descriptive statistics and t-tests, revealed that AI tools significantly improve consistency, transparency, and security in audits, with SAP Audit Management being the most prevalent software. However, challenges such as system processing issues and skill gaps were identified. The findings suggest that while AI enhances audit quality, recommendations include software improvements, specialized training programs, and strengthened data security protocols to maximize its benefits.*

**Keywords:** *AI, White box approach, Audit-transparency, Liquidation, Audit-practitioners, Metro-Manila*

## Introduction

Artificial Intelligence (AI) is rapidly changing the landscape of auditing. Its integration has introduced new tools and methods that significantly improve audit efficiency, accuracy, and transparency. However, these innovations also pose challenges, particularly in ensuring the quality of audit reports. Manipulation of transaction data, if undetected, may compromise audit outcomes. This study examines the efficacy of AI using the White Box Approach in enhancing audit transparency and liquidation among audit practitioners in Metro Manila. By analyzing the application of computer-assisted audit tools (CAATs), this re-

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search aims to understand how AI supports auditors in detecting errors, preventing fraud, and completing audits effectively (Tandiono, 2023; Goel et al., 2023).

Auditing is traditionally a manual and labor-intensive process. Auditors often rely on sampling to verify financial data. This method, while necessary, carries inherent risks. Errors may be overlooked, and fraudulent activity may go undetected. AI mitigates these risks by processing large volumes of data efficiently. It allows auditors to identify high-risk areas and focus their attention where it matters most. For instance, AI can enhance risk assessment, fraud detection, and anomaly identification in financial statements (AICPA, 2022). The use of CAATs in auditing enables auditors to analyze transactions systematically, improving both speed and quality of audits. However, the reliability of these tools depends on rigorous software testing, which can be conducted through black box or white box approaches (Reddy, 2020).

The White Box Approach tests the internal workings of audit software. It allows auditors to evaluate logic, data flow, and vulnerabilities. Unlike black box testing, which only assesses outputs, white box testing ensures the software performs as intended. This is critical in preventing errors, detecting fraud, and maintaining audit transparency. AI and white box methods together create a robust system for analyzing transaction data. They improve accuracy, efficiency, and security in audits. Despite these benefits, challenges remain. Auditors must understand the software and its limitations. They must also address data privacy, cybersecurity, and ethical considerations when applying AI in auditing (Goel et al., 2023; Tandiono, 2023).

This study focuses on the practical application of AI among audit practitioners. It seeks to determine which AI software programs are commonly used, including eAudit, Aura, Caseware, and SAP Audit Management. The research also explores how auditors assess software performance in terms of consistency, transparency, and security. Additionally, it examines whether these assessments vary based on demographic factors such as age, gender, educational attainment, and CPA status. Finally, the study identifies challenges auditors face when using AI tools in professional practice. By doing so, the research contributes to improving audit processes. It provides recommendations for training, software enhancement, and adoption of best practices (AICPA, 2022; Reddy, 2020; Tandiono, 2023). These insights aim to support auditors in using AI effectively while maintaining high-quality audit standards.

## **Literature review**

### ***White box approach***

The white box (computer-based) method of testing depends on a thorough comprehension of the internal workings of the application being tested. There are numerous methods for directly testing application logic included in the white box approach. These often entail the production of a small number of test transactions to validate particular elements of the logic and controls of an application. In this manner, auditors are able to carry out exact tests with known variables and acquire outcomes that they may contrast with results that were calculated in an unbiased manner (Bobadilla et al., 2017).

Due to the fast-evolving digital era in the business industry, auditors need to keep up with the trend and current technology in audit practice. From the traditional manual processing of source documents to IT-Based system data processing in auditing, software programs give an advantage for the auditor's efficiency in work. According to Auditing and Assurance Services Theory and Principles of Escala and Bercasio (2021), computer programs used in auditing in the Philippines provide significant change to audit practitioner's assurance that reports are fairly valued and checked. Thus, financial transactions that are expected to be recorded are monitored in a system where a set of rules are applied. This makes the work for auditors much lighter but still able to provide such reasonableness of the entity's business transactions.

### ***Efficacy of artificial intelligence in audit***

Computer-assisted audit tools and techniques have grown increasingly advantageous in audit domains. Auditors may use these tools to evaluate various areas of their audit engagement, either in the evaluation of the client's internal controls or extraction of specific information. Some people even presume to believe that CAATs are only applicable for large audits when in actuality, these technologies are beneficial for audits of any size (Accounting Hub, 2023).

Concepts in the book published about Auditing and Assurance Services (2021) by Escala and Bercasio laid benefits in auditing through the computer: It aids in audit procedures, controlled processing, and improves audit techniques. These Computer Assisted Audit Tools and Techniques (CAATs) organize audit files, monitor audit engagements, and create databases for identified material misstatements among various transactions. Hence, automated working software used by auditors is highly dependent on the practitioner's skill. Thus, an auditor equipped with IT knowledge reduces costs for manual auditing and allocates attention to areas where fraud and error could exist.

A study on the Compliance Theory of Understanding Organizational Commitment (2019) was made by De la Salle University and it was evident that the use of CAATs enhances audit capabilities of auditors. It is used to uncover fraud and minimize errors while testing the function of audit software as a tool to deliver transparency among audit clients. Furthermore, CAATs strengthen business intelligence by making sure that values are data-matched and in accordance with related source documents received from management. With these, auditors make assurance that when financial statements are presented to engagement clients, it is reasonably corrected from misstatements.

### ***Transparency and liquidation***

Auditing Theory by Salosagcol et al. (2021) takes on CAATs as both strength and weakness of an entity. Primarily, he emphasized that rapid development in audit practice offered new opportunities for professional accountants to use methods that bring up organizational objectives achievable.

However, this does not preclude auditor's decision at risk if there are lack of visible transaction trails, vulnerability of system, and internal control software failure. The advantages and disadvantages of using CAATs may vary depending on the company's effective

response on issues and problems that may arise in using Audit software programs. Thus, management without overriding the system data processing must be able to understand the knowhow of current audit tools and techniques in auditing.

To support this, data analysis demonstrates the potential of AI applications maximized in putting into place sound auditing procedures to produce accurate and helpful information that can be used by business entities in developing and putting into practice improved accounting policies, plans, and initiatives making use of algorithms to the value of identifying trends in audit findings. It is a leverage that auditors must utilize for further efficiency to achieve a high-level quality of output. Though many are still adamant, it can be said that the future of auditing with AI is no longer that distant but an impending reality (Salosagcol et al., 2021; Roque, 2018).

### ***Audit practitioners***

Audit practitioner's competence is also a necessary variable to be taken into consideration. Based on the study conducted by Bradford & Henderson (2017), despite the fact that generalized audit software (GAS) has already proved to substantially enhance audit efficiency and effectiveness. The technology is not used by many auditors. As stated by one auditor, "*Non – IT auditors appear overwhelmed and even intimidated by GAS tools.*" The results indicated that perceived usefulness was one of the reasons for the auditors' refusal concerning its usage. This perceived ease of use can stem from auditors' lack of expertise. Thereby, a consequence of not having the necessary knowledge or training, leading to the inability to detect important concerns or provide relevant recommendations, resulting in missed possibilities for improvement (Cmiosh, 2022). There is a significant knowledge gap between the theoretical and actual skills of 151,000 Big Four IT auditors, according to a more recent worldwide survey called "*The Next Generation Cybersecurity Auditor.*"

Accordingly, it was revealed that IT auditors' inadequate technical skills increase the risk of a data breach and the analysis of technical evidence for critical infrastructure to be misinterpreted (Curtis, 2022).

Even if auditors are equipped with the essential expertise and available to perform their duties, incompatible programs may still exist. To reduce this threat, risk assessment and examination for vulnerabilities must be made. It is a general rule for auditors to obtain an understanding of the nature of an entity and its internal control. In considering audit software, the areas to be checked are software systems, network vulnerabilities, and security controls. As to network vulnerabilities, auditors may look for weaknesses in network components that may be exploited. With regards to security control, data testing and compliance with policies may be made to check as to how information is being protected. And in terms of software systems, an auditor may check how appropriate controls are in place, if it is providing relevant information and unauthorized persons are denied from accessing the said system (Gillis, 2022).

Additionally, information security risk comes with it. When information is uploaded online, there is a high tendency for data breaches to occur. The audit application must be run on the client's live database while the auditor examines the client's real system. Some clients may be apprehensive to allow auditors to run the audit application on live/real files since it may

corrupt the actual file. Another option is to run it through backup copies of the live database, but in order to do this, there must be an assurance that copied files are true copies of the live files. Hence, controls should be in place to verify the accuracy of each data source and prevent unauthorized data from being collected as part of the test data or real data (Martin, 2021).

### ***EAUDIT***

In order to challenge the status quo in the Testing, Inspection, and Certification (TIC) Industry and to play a pioneering role in the "digital platform revolution" for the audit and inspection sector, EAudit was founded. Businesses may use e-Audit to manage their supplier and internal audit and inspection programs. This software offers simple-to-use online digital tools, competent independent resources, and the tracking of all pertinent data. With the help of these solutions, businesses may use online, personalized auditing and inspection tools and concentrate on value-added monitoring (EAUDIT, 2023).

### ***AURA***

Aura is a full-featured audit technology platform that combines industry methodologies and enables tech-powered audit processes from beginning to end. A data-driven experience, improved quality, and an audit that is appropriately sized to audit clients are the outcomes of using it. Since data is the foundation of everything, this results in enhanced testing and smarter risk assessment. A software tailored specifically for audit companies, the top-down and bottom-up approaches to innovation could be successful when the appropriate individuals and cutting-edge technology come together (AURA, 2022).

### ***CASEWARE***

The efficiency of assurance, analysis, and reporting tasks can be significantly increased when Caseware Audit and Working Papers are used together. It makes the audit trail centralized, allows team members to interact on an engagement file in real time, enables audit visualization of the engagement, and tailors each audit based on needs (Caseware, 2023). It is a comprehensive, powerful, and easy-to-use data analysis solution created by audit professionals. Its numerous features include deliverance of key insights with the utilization of multiple functions, automated manual, accelerated analysis, and advanced analytics (Caseware IDEA, 2023).

### ***SAP audit management***

Conversely, SAP Audit Management initially called System Analysis Program Development offers an end-to-end audit management solution that is totally mobile. Its capabilities include the preparation of audit and audit plan, analysis of relevant information, documentation of results, formation of audit opinion, communication of results, and progress monitoring (SAP Audit Management, 2019).

Audit software in professional practice: Audit software is any type of program that enables auditors to simplify the audit process (CyberSaint, 2023). Contrary to general account-

ing software, it is often used to assist in the evaluation and inspection of financial documents. The desired outcomes, however, are contingent upon the program to be employed (Bradford et al., 2017). And despite being helpful, it still has its own drawbacks.

Aryal and Callahan (2022) state that accountants' role has been more significant with the rise of technology. These software programs are the improved versions of the old technology of conducting repeated tasks such as bookkeeping and data transfer. Rather than being replaced by artificial intelligence, it is perceived as an instrument for accountants and auditors to efficiently carry out their job since analyzing and sorting data will become much faster than usual (Kokina & Davenport, 2017). However, artificial intelligence will not attain excellent decision-making for business needs, yet it will be a great advantage in administering data needed by these accountants and auditors. Similarly, AI alone will not perform well and prone to errors and security threats if not supervised well by professionals.

In order to meet societal needs, it is crucial that auditors stay up with the quick changes in both their field and IT. Technology is used in the audit industry to pick the audit sample and create an electronic client base more correctly. Also, by holding training sessions, auditors' performance connected to computerizing AIS risks impacting the quality of their job and how to cope with such risks should be increased. By taking part in specialized seminars and training, auditors should also aim to maintain a better level of specialization in computerized IS auditing, including AIS. The auditors' qualifications will rise and their experience in their line of work will increase (Al-Hattami et al., 2020).

Moreover, the DLSU Business and Economics Review (2018) by Nelson Celis states that audit programs are also used for regulatory purposes among business establishments, particularly large corporations. Since data is voluminous, auditors do not have plenty of time to completely make assurance that financial transactions are correct. Therefore, as a practitioner, the auditor implements an approach to take samples in a computerized system. Enabling the work and report of audited transactions efficiently. Since pre-determined standards are already established within the CAATs' system data processing cycle, it is easier for auditors to monitor data movements in the system.

### ***Quality of audit report***

A book entitled *The Implications, Applications, and Benefits of Emerging Technologies in Audit* (2020) by Carpenter and McGregor specifically introduced to readers how audit software programs increase effectiveness of business operations. A qualitative analysis was performed and concluded that audit software improves audit quality and costs. In particular, rules-based tasks of CAATs contribute to fewer errors than humans could make. If combined with the auditor's skill, it is much more conducive to audit reports than manual processes of auditing transactions. Also, auditor's time could be maximized for high-risk areas and large data sets allowing them to provide a high degree of assurance.

Data-driven processes have a clear potential to enhance trust in the audit process and to boost trust in general by, for instance, guaranteeing the confidentiality and privacy of data

collected and handled by an audited institution. Auditors will be able to show stakeholders how they arrived at their judgments by becoming more data-driven, which will greatly increase openness. A third party that is not involved in the audit can clearly comprehend how it was conducted if auditors clearly document the data they have accessed, the checks they have performed, the processes they have followed, and the technology they have used. Only then can there be an increase in trust. Meanwhile, auditors should be able to focus on the areas where their professional talents are most beneficial by applying data analytics as necessary. And auditors will still need to confirm internal control systems, perform independent valuations, and exercise professional skepticism (Vernocchi & Toggwyler, 2021).

### ***Consistency of performance***

The evidence of technological adaptation provides auditors with an efficient way of executing audits in various institutions. Computer Assisted Audit Tools and Techniques (CAATs) widely known among audit practitioners as software audit programs greatly affects how auditing makes financial reports reasonable when presented to business owners, clients, and general public.

A study entitled Determinants adoption of CAATs, Cognition, Technology and Work (2019) determined three contributors on the usage of these tools namely perceived usefulness, auditor's intention, and firm's influence. These are considered as success determinants of the auditor's audit programs applied in the practice. Thus, a strong and well-guided environment between audit tools and auditors in practice facilitates learning and development of auditor's responsibility with regards to audit reports.

However, the adaptation of artificial intelligence within audit practice must be matched with a quantitative assessment of the limitations of the technology, and staff training that emphasizes the limitations of the technology. It is practical to be aware of the functional limitations of Computer-Assisted Audit Techniques as blind adoption could result in reputational risk in the event of artificial intelligence failures like how some risks and controls will be missed by the algorithm, and some statements will be incorrectly classified. It is essential for the human auditor to be aware of these restrictions and to have quick access to a workflow correction that can help easily in relabeling statements (Shapiro, 2021).

### ***Transparency***

According to Ghanoum and Alaba (2020), auditors agree that the utilization of AI systems in auditing led them to observe the compliance of accounting and auditing international standards and positively build up professionalism in their field. However, some standards have not been met through AI systems usage, but it gives room for the management to determine the inconsistencies and improve their performance.

As the use of audit tools and techniques is applied in the audit practice, its functionalities should also be of great importance. Since the auditor's primary work is to provide reasonable assurance that financial statements are free from fraud and error, all software that is used must be guarded to avoid malfunction and security threat. A qualitative approach in

a study called Computer-Assisted Audit Techniques (CAATs) for Financial Fraud Detection (2020) states that the role of CAATs in detecting fraud is to recognize and identify a recorded transaction but has characteristics that are associated with fraud.

Although AI systems assist auditors in identifying human errors, the opinions of these professionals persist. Auditors need to expand their knowledge of technology to coincide with their insights in accounting and auditing to efficiently use the AI system in making better business decisions.

Before establishing professional judgment, auditors shall analyze data on the AI's features. An adequate evaluation shows that this system adheres to the standards, opposing others' claims. Although some standards might not be met, AI supports professional judgment by increasing accurate existing strategies. It also promotes a better basis for achieving proper diligence, at the same time, ensuring the attainment of deals.

### ***Vulnerability and security***

Digitalization has become a trend in the modern world on how businesses operate such as customers use it for payment and business owners use applications that help them to monitor and track their finances and/or supply chains. The demand for data management became prevalent because of the amount of data that has been created and stored. Also, digital operations are more complex today, which results in expanded security attacks that are difficult to monitor and resolve (IBM, 2021).

Artificial intelligence offers a proven method to enhance audit efficiency, cost-effectiveness, and reliability by reducing human error. For firms seeking to improve their auditing processes, AI presents a viable solution. Auditors bear responsibility for reviewing transactions and detecting material misstatements, yet delayed identification of fraudulent activities or anomalies can complicate this process. Inadequate documentation of financial implications frequently leads to materially misstated financial statements (Noordin et al., 2022).

The main purpose of security audit is to serve as a guide on the vulnerabilities of the AI system and distinguish where it adheres to and where it fails to fulfill the criteria established by the organization. It is essential in forming strategies and risk assessment procedures that handle confidential information. These kinds of security are what the organizations need in order to protect their clients' information, abide by the law regulations, and dodge ample number of penalties. Multiple computer-assisted audit techniques (CAATs) have been launched in the market that will automate the auditing process to help regularly check the weaknesses on the security and will automatically process reports that will be reviewed by the auditors and IT professionals (Security Intelligence, 2021).

### ***Synthesis of the reviewed studies***

The collection of both foreign and local studies provides a foundational basis for understanding the concept of White Box Approach among Computer Assisted Audit Tools and Techniques (CAATs) as an artificial intelligence in practicing audit within the Computer Information System Environment (CIS). As stated, technology has brought changes to different professions, and it includes audit practitioners. From traditional audit procedures to mod-



ernized utility of audit software programs, auditors have acknowledged the wide usage and benefits of using integrated software in providing quality audit reports. (Bercasio, 2022).

The area of importance similar to current study is the objective of auditors in keeping audit reporting objectives achievable: Audit Transparency and Liquidation. It highlights important factors that affect the functions of CAATs. In order for a successful integration of both auditor's skill and CAATs to happen, a strong compatibility and technology's efficacy within a certain environment should be observed. (Salosagcol, 2018).

### ***Theoretical framework***

Escala (2021) explains "Theory of White Box Approach" as a test of information technology within the scope of Auditing. This approach allows auditors to view and test unaudited financial transactions using the implementation of artificial intelligence. Logical procedures and data calculations are performed through the use of audit software programs which is sometimes called as "White Box Testing". Moreover, this theory shows how audit tools are used to evaluate the design, implementation, and operations of IT controls under audit circumstances. It provides a detail analysis of computer configurations, vulnerability, and other information. However, limitations arise such as a need of further training to be an expert in order to fully utilize these tools in audit procedures.

Being a part of the audit completion stage, the output of this software provides great help to auditors, management, and the whole organization undergoing audit stage. Particularly, the audit reports made by audit practitioners are presented to audit engagement clients in providing a vital part to management's decision-making process if objectives are achieved through the help of Computer Assisted Audit Tools and Techniques (CAATs) as Artificial Intelligence in Audit.

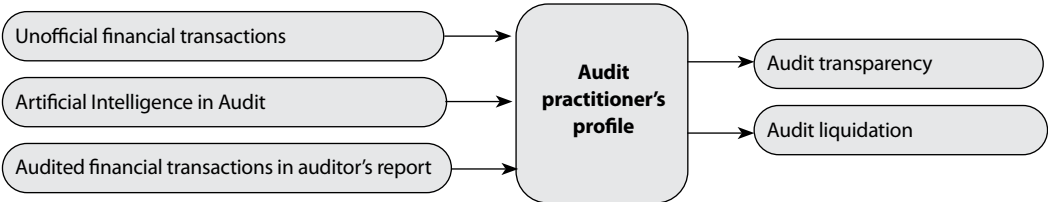
### ***Conceptual framework***

The conceptual framework of this study shows how the White box approach is applied in audit practice among audit practitioners. Occasionally, businesses will falsify their financial accounts in an effort to impress investors or conceal taxable income. Financial Management claims that even a business that is completely ethical occasionally produces inaccurate reports. It is not simply an issue of making mistakes: you are not using your bookkeeper's reports very much if you do not read or analyze them (Sherman, 2020). As a result, most of the business entities today apply audit software programs to help auditors make audit reports. Information technology used in auditing activities is referred to as Computer Assisted Audit Tools and Techniques (CAATs). The definition of CAATs is the use of tools and processes for data retrieval and analysis while auditing computer applications. The CAATs is a tool and technique used to evaluate the internal workings of a computer application that processes data, both directly and indirectly (Susanto & Bong, 2018).

Even while large businesses frequently employ automated systems to track and record data, according to Risk Management, the systems can nevertheless produce unreliable reporting. Errors and inconsistencies are caused by many people entering the same data multiple times, often in different systems. It's not always simple to locate the data's origin and con-

firm its accuracy (Sherman, 2020). Hence, the researchers determined CAATs' effectiveness by measuring its function in providing transparency and liquidation to audit engagement clients.

**Figure 1: Conceptual framework of the study**



## Methods

This study utilized a descriptive quantitative research design to evaluate the efficacy of artificial intelligence in enhancing audit transparency and liquidation processes. The methodology specifically examined how factors like encountered problems and perceived advantages of Computer-Assisted Audit Tools and Techniques (CAATs) influence audit outcomes. This approach enabled a systematic investigation into the relationships between AI implementation and audit quality.

Data collection involved a purposively selected sample of thirty audit practitioners from Metro Manila who had professional experience with audit software. Researchers employed an online survey distributed through Google Forms, which incorporated a Likert scale to measure respondents' perceptions and experiences. The survey instrument contained sections directly addressing the research problem and was validated prior to administration to ensure reliability and relevance.

Statistical analysis included frequency and percentage distributions to summarize demographic characteristics and software usage patterns. Weighted means calculated average assessment scores for software performance across key dimensions including consistency, transparency, and security. Additionally, an independent samples t-test was conducted to determine whether significant differences existed in assessments between Certified Public Accountants and non-CPA practitioners, providing insights into how professional qualifications might influence perceptions of AI efficacy in auditing.

## Result and Discussion

### *Demographic profile of respondents*

The survey respondents were predominantly young professionals, with 80% being 27 years old or younger. This may reflect a broader industry trend toward younger auditors or could indicate that the study captured fewer experienced practitioners. Female participants slightly outnumbered males, comprising 53.33% of the sample. Educationally, most respondents held bachelor's degrees (76.67%), with a smaller proportion having graduate or professional degrees (23.33). Despite this, two-thirds of participants were Certified Public Accountants, confirming their professional standing.

Regarding technology adoption, SAP Audit Management was the most widely used platform, with half of the auditors reporting its use. Aura followed at 33.33%, while Caseware

and eAudit showed lower adoption rates of 10% and 6.67% respectively. This pattern suggests that SAP and Aura currently lead the audit technology market among Metro Manila firms, with more specialized tools maintaining a limited presence.

**Table 1: Demographic profile of respondents**

Items	Descriptions	Frequency	Percentage
Age	20 – 23	14	46.67%
	24 – 27	10	33.33%
	28 – 31	5	16.67%
	32 and above	1	03.33%
	<b>Total</b>	<b>30</b>	<b>100%</b>
Gender	Male	14	46.67%
	Female	16	53.33%
	<b>Total</b>	<b>30</b>	<b>100%</b>
Education	Bachelor's Degree	23	76.67%
	Graduate or Professional Degree	7	23.33%
	<b>Total</b>	<b>30</b>	<b>100%</b>
Professional title	CPA	20	66.67%
	Not CPA	10	33.33%
	<b>Total</b>	<b>30</b>	<b>100%</b>
AI used by Audit practitioners	EAudit	2	6.67%
	Aura	10	33.33%
	Caseware	6	10.00%
	SAP Audit Management	15	50.00%
	<b>Total</b>	<b>30</b>	<b>100%</b>

### ***Descriptive analysis***

Audit practitioners view software performance positively. The overall weighted mean for consistency was 3.05. Transparency scored slightly higher at 3.10. Vulnerability and security received a 3.08 mean. These scores all fall within the "Agree" interpretation range. The highest agreement was for time-saving automation. This item scored 3.40 for system-generated transactions. Easy access to audit documentation also scored highly at 3.27. The lowest agreement concerned risk reduction and policy adaptation. This item received a mean score of 2.63. Practitioners agreed software provides visible transaction trails. They also noted increased confidence in data inputs. The tools help verify and authorize transactions efficiently. Task segregation is easily facilitated with programs. Respondents believe software reduces security breach consequences. Data sensitivity is monitored throughout procedures. Recovery controls provide adequate backup protection. Most feel CAATs help eliminate high-cost vulnerabilities. The results show consensus on software's supportive role. It aids in achieving audit transparency and liquidation. The tools enhance the overall quality of engagements.

**Table 2: Consistency of performance, transparency, and vulnerability and security of audit Ssoftware programs**

Item	Consistency	Mean	Interpretation
<b>Consistency of performance of audit software programs</b>	Audit software determines potential issues while performing audit procedures.	3.07	AGREE
	Audit software enhances auditor's response to contingencies.	3.03	AGREE
	Inherent risks on operations may be reduced and accounting policies are adapted.	2.63	AGREE
	Application controls (Input, Processing, and Output) help to achieve financial reporting objectives.	3.13	AGREE
	System generated transactions (e.g., automatic interest calculation) saves time for other audit tasks.	3.40	STRONGLY AGREE
	<b>WEIGHTED MEAN</b>	<b>3.05</b>	<b>AGREE</b>
<b>Transparency of audit software programs</b>	During audit, software programs provide assurance of visible transaction trails.	2.93	AGREE
	Audit software programs increase auditor's confidence in relation to data inputs.	3.13	AGREE
	Transactions are verified and authorized during audit examination of evidence.	3.03	AGREE
	Segregation of auditor's tasks are easily facilitated with the use of audit programs.	3.13	AGREE
	Documentation and validity of audit reports can be accessed by responsible officers.	3.27	STRONGLY AGREE
	<b>WEIGHTED MEAN</b>	<b>3.10</b>	<b>AGREE</b>
<b>Vulnerability and security of audit software programs</b>	Audit software programs reduce potential consequences of security breach.	3.03	AGREE
	Data's sensitivity is monitored throughout audit procedures.	3.07	AGREE
	Data recovery controls in case of lost provides backup for audit programs	3.17	AGREE
	Vulnerability of incurring high costs during audit are eliminated through implementation of CAATs.	3.03	AGREE
	<b>GENERAL MEAN</b>	<b>3.08</b>	<b>AGREE</b>

## Inferential statistical analysis

Assessment of audit software programs and profile of audit practitioners: The independent samples t-tests, reveals that there are no statistically significant differences in the assessment of audit software programs based on the demographic profiles of the practitioners. With all computed p-values - comparing age groups (.1057), gender (.1020), educational attainment (.1030), and CPA status (.1025) - exceeding the standard alpha level of 0.05, the null hypothesis is accepted for each category. This indicates that perceptions of software consistency, transparency, and security are consistent across diverse demographic segments; factors such as professional certification, age, sex, or academic background do not systematically influence how auditors evaluate the efficacy of artificial intelligence tools in their practice. The results emphasize a unified positive assessment of CAATs, suggesting that the perceived benefits of AI in enhancing audit quality are broadly shared among practitioners regardless of individual characteristics.

**Table 3: Assessment of audit software programs and profile of audit practitioners (T-Test)**

Audit practitioner's profile	Classification	Total Mean	p-value
Age	20 to 23 years old	3.10	.1057
	24 to 27 years old	2.95	
	28 to 31 years old	3.17	
	32 years old and above	3.48	
Gender	Male	2.94	.1020
	Female	3.20	
Education	Bachelor degree	3.06	.2030
	Profession degree	3.12	
Title	CPA	3.08	.1025
	Non-CPA	3.09	

Note:  $H_a \mu \neq 0$  – Accept the Null Hypothesis

Assessment of audit software programs and Artificial Intelligence Software commonly used in Audit practice (T-Test): The t-test analysis shows no significant differences in software assessments. This is based on the type of AI tool used. All p-values exceed the 0.05 significance threshold. Consistency scores had a p-value of .1012. Transparency comparisons resulted in a p-value of .1110. Vulnerability and security analysis showed a p-value of .1030. These results indicate that perceived software performance is consistent. It does not vary significantly between different AI applications. Users of SAP, Aura, Caseware, and eAudit reported similar experiences. They agreed on the software's consistency, transparency, and security. The null hypothesis is therefore accepted. Auditor opinions are not influenced by the specific brand of software. The positive assessment of CAATs is universal across platforms.

**Table 4: Assessment of audit software programs and Artificial Intelligence Software commonly used in Audit practice (T-Test)**

Assessment	Artificial intelligence software	Total Mean	p-value
	SAP Audit Management	3.00	.1012
	Aura	3.20	
	Caseware	3.04	
	eAudit	2.90	
	SAP Audit Management	3.08	.1110
	Aura	3.20	
	Caseware	3.35	
	eAudit	3.70	
	SAP Audit Management	3.01	.1030
	Aura	3.25	
	Caseware	3.25	
	eAudit	2.89	

Note:  $H_a \mu \neq 0$  – Accept the Null Hypothesis

Problems frequently encountered while using audit software: The analysis of encountered problems reveals that technical and human factors are the primary challenges in audit software implementation. System data processing issues were the most frequent problem, representing 30% of all reported difficulties, indicating significant technical limitations in handling complex data workflows. Auditor skill inadequacy followed closely at 25%, highlighting a critical gap in practical training and technical proficiency among practitioners. The lack of a clear audit trail constituted 23% of problems, potentially compromising transparency and verification processes. Software compatibility issues accounted for 15% of challenges, suggesting integration difficulties with existing systems. Information security concerns represented the smallest proportion at 7%, indicating relative confidence in security protocols.

**Table 5: Problems frequently encountered while using audit software**

Problems encountered	Frequency	Percentage
System data processing	12	30
Auditor's inadequacy of skill	10	25
Lack of audit trail	9	23
Incompatible software program	6	15
Information security	3	07
<b>Total</b>	<b>30</b>	<b>100</b>

**Discussion**

The findings of this study align significantly with existing literature on the integration of AI and CAATs in auditing, while also highlighting areas requiring further attention. The strong positive perception of audit software’s consistency, transparency, and security (weighted means: 3.05–3.10) supports prior assertions that CAATs enhance audit quality, efficiency, and reliability (Escala & Bercasio, 2021; AICPA, 2022). The high agreement on time-saving automation and improved documentation access corroborates Carpenter and McGregor’s (2020) findings on the operational benefits of emerging audit technologies.

However, the persistent challenges related to system data processing (30% of reported issues) and auditor skill inadequacy (25%) resonate strongly with Bradford and Henderson’s (2017) observation that non-IT auditors often feel overwhelmed by audit software. This underscores the critical need for specialized training, as emphasized by Al-Hattami et al. (2020), to bridge the gap between theoretical knowledge and practical application.

The lack of significant differences in software assessments across demographic groups and software types suggests a universal recognition of AI’s value, consistent with Salosagcol et al.’s (2021) view that CAATs offer generalized benefits regardless of firm size or auditor background. However, the relatively lower score on risk reduction (mean: 2.63) indicates that AI’s role in adaptive policy implementation remains limited, echoing Shapiro’s (2021) caution about the functional limitations of AI and the need for human oversight.

In conclusion, while the study confirms the transformative potential of AI in auditing - as

noted by Kokina and Davenport (2017) - it also validates concerns raised in the literature regarding technical barriers and skill gaps that must be addressed to fully realize this potential.

## Conclusion

This study aimed to evaluate the efficacy of artificial intelligence, particularly through the White Box Approach, in enhancing audit transparency and liquidation among practitioners in Metro Manila.

This study employed a descriptive quantitative design, collecting data from 30 audit practitioners in Metro Manila via an online survey. The research provided a detailed analysis of participant demographics, software preferences, evaluations of AI tools, and common implementation challenges.

The results indicate that practitioners generally perceive AI software favorable, especially regarding its consistency, transparency, and security. SAP Audit Management was the most frequently used application, with Aura and Caseware also being common. Evaluations of the software's benefits were consistent across different user demographics and software brands, suggesting a share recognition of AI's value in auditing. Despite this consensus, respondents reported significant practical difficulties, primarily slow system processing and a widespread lack of technical proficiency, highlighting a disconnect between technology adoption and user capability.

To address these issues, the study proposes several recommendations. Software developers are encouraged to enhance the data processing capabilities of audit applications. Concurrently, audit firms and professional bodies should institute ongoing training and certification programs to bolster practitioners' technical skills. Organizations are advised to prioritize software compatibility and foster clear communication among all parties involved to reduce security and operational risks.

In summary, while AI substantially improves audit transparency and operational efficiency, achieving its full potential requires target software enhancements, comprehensive practitioner training, and strengthened organizational support. Future research should investigate the long-term effects of AI integration and expand to include varied geographic and industrial settings.

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### ***Authors' contribution statement***

Isaias L Borres wrote the article; Ramon Daludado collected the data and Emilio Lobederio analyzed the data.

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### ***Declaration of conflicting interest***

The authors declare no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

## Appendix 1: Plagiarism and AI detection test report

### Isaias L Borres

## The Efficacy of Artificial Intelligence Using White Box Approach in Audit Transparency and Liquidation among Audit...

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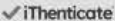
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# Moving Training to Online Platform: A Case of Nepal Administrative Staff College during the COVID-19 Pandemic and Beyond

*Dr. Shyan Kirat Rai\**

\* Deputy Director of Studies,  
Public Service Training  
Department, Nepal  
Administrative Staff College

\*Corresponding Author<sup>1</sup> Email:  
shyankirat@gmail.com

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## Abstract

*This study examines the transition to online training at the Nepal Administrative Staff College (NASC) during the COVID-19 pandemic. Using a mixed-methods case study approach, the research collected quantitative data through questionnaires from 90 training participants and qualitative insights from 15 follow-up interviews. Data analysis employed descriptive statistics for quantitative responses and thematic analysis for qualitative feedback. Findings reveal that while online platforms successfully reached 5,295 participants and enhanced digital literacy, significant challenges emerged including internet instability and reduced interpersonal interaction. The study concludes that online training serves as a crucial alternative during crises but cannot fully replace traditional methods. It recommends NASC develop a blended learning model that strategically combines both approaches to create a more resilient and effective training system for Nepal's public sector.*

**Keywords:** COVID-19 Pandemic, Digital Technologies, Online Work/Training, NASC

## Introduction

The COVID-19 pandemic brought unprecedented disruption to almost every sector of society, and education and training institutions were among the most affected. The sudden lockdowns and restrictions on physical gatherings made it impossible to continue face-to-face training activities, compelling organizations around the world to adopt online alternatives. Globally, this transition to online learning during the pandemic was characterized by both opportunities and challenges. Dhawan (2020) stated that the pandemic accelerated the digital transformation of educational and training systems, compelling institutions to innovate and adapt quickly. Similarly, Adedoyin

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and Soykan (2020) observed that although online education facilitated access and continuity, it also exposed inequalities in technological resources and digital literacy.

In the context of developing countries like Nepal, the situation was more complex. Limited internet infrastructure, inconsistent power supply, and varying levels of digital competence among participants created barriers to effective online learning. Nonetheless, the crisis became a catalyst for change, prompting institutions like NASC to explore new modalities of training delivery through digital platforms such as Google Meet, Zoom, and Google Classroom.

The problem faced by NASC during the pandemic was not merely technological but also institutional. As a public training body, it had to maintain the quality, inclusiveness, and effectiveness of its programs while adapting to a new mode of delivery. The central challenge lay in ensuring that online training achieved the same learning outcomes as face-to-face sessions, despite the lack of physical interaction and experiential learning components. Trainers also had to adapt their pedagogical approaches to virtual environments, while participants had to familiarize themselves with online tools and self-directed learning methods. Moreover, ensuring equitable participation of officials from remote areas posed additional difficulties, as access to stable internet connectivity varied widely across regions (Koirala et al., 2021).

In response to these challenges, NASC developed and implemented a series of online training programs designed to replicate the structure and objectives of its conventional training. The institution introduced digital learning management systems, conducted online orientations, and provided technical support to trainers and trainees. These efforts not only sustained the learning process during the crisis but also contributed to building digital competence among civil servants. According to Khatri et al. (2023), such initiatives marked a transformative phase in Nepal's public sector training system, setting the foundation for blended and hybrid learning models in the post-pandemic era. The experience also demonstrated the resilience and adaptability of NASC as an institution committed to maintaining professional development even in adverse circumstances.

The main objective of this study is to examine how NASC successfully transitioned its training programs to an online platform during the COVID-19 pandemic and how participants perceived and experienced this new learning environment. Specifically, the study aims to identify the factors that facilitated or hindered the effectiveness of online training, assess participants' satisfaction and readiness, and explore the institutional strategies that supported this transformation. By analyzing these dimensions, the study provides insight into the broader question of how digital learning can be effectively institutionalized in public sector training in Nepal.

The significance of this study lies in its practical and academic contributions. On a practical level, it offers lessons for educators and training institutions seeking to design resilient and inclusive training systems in the face of crises. The experience of NASC illustrates that with proper planning, leadership, and digital infrastructure, online training can serve as a viable and effective alternative to traditional training. On an academic level, the study adds to the growing body of literature on digital education in developing countries, where contextual factors such as infrastructure, institutional culture, and digital literacy play a crucial role. It

also extends understanding of how public institutions can leverage technology for sustainable capacity building beyond the pandemic context (Ali, 2020; Greenhow et al., 2020).

Furthermore, the research highlights the importance of institutional readiness and leadership commitment in the successful implementation of online learning. As noted by König et al. (2020), the effectiveness of digital training depends not only on technology but also on the ability of institutions to create supportive environments that encourage participation and engagement. NASC's experience highlights how organizational innovation, combined with the dedication of trainers and trainees, can transform a crisis into an opportunity for digital advancement.

## Literature review

### *Background of COVID-19*

The world was at its ongoing pace of economic, social, and political development with a new upcoming year 2020 just few days ahead. In 31 December 2019 Wuhan Municipal Health Commission, China reported cluster cases of pneumonia in Wuhan, Hubei province. In two weeks' period of reporting, inspection, and study the researchers identified a novel coronavirus. The World Health Organization (WHO) declared a Public Health Emergency of International Concern (PHEIC) on 30 January 2020, and later declared pandemic in 11 March 2020 (Timeline of WHO's Response to COVID-19, 2021). Table 1 shows the timeline incidents and actions performed by WHO.

**Table 1: WHO response to COVID-19**

Date	Key activities and events
31-12-2019	The Wuhan Municipal Health Commission in China reported a cluster of pneumonia case. A novel coronavirus was later identified as the cause.
04-01-2020	The WHO announces one social media that there is a cluster of pneumonia cases in Wuhan, with no deaths reported.
05-01-2020	The WHO published its first disease outbreak news report on the new virus. This report included a risk assessment, advice, and information from China regarding the situation in Wuhan.
10-01-2020	The WHO issues comprehensive technical guidance to all countries on detecting, testing, and managing potential cases. The organization also published infection prevention and control for health workers, based on known modes of transmission for similar respiratory virus.
12-01-2020	China publicly shared the genetic sequence of the COVID-19 virus.
13-01-2020	Health officials confirmed a case of COVID-19 in Thailand, representing the first officially recorded case outside of China.
22-01-2020	WHO mission to China concluded that there was evidence of human-to-human transmission occurring in Wuhan.
20-01-2020	The WHO Director-General declared the outbreak a Public Health emergency of International Concern (PHEIC) following advice from the Emergency Committee. This declaration was made when 7,718 cases were confirmed globally, with 82 cases outside of China. The global risk was assessed as high.
22-01-2020	The WHO mission to China states there is now clear evidence of human-to-human transmission in Wuhan.
28-01-2020	The head of WHO travels to Beijing to meet with Chinese leaders, learn about their response, and offer assistance. They agree to send an international team of experts to China.

Date	Key activities and events
30-01-2020	WHO reconvenes the emergency committee and declares the outbreak a Public Health Emergency of International Concern (PHEIC). At this time, there are 7,818 confirmed cases, mostly in China, with 81 cases in 18 other countries.
03-02-2020	WHO releases a global preparedness and response plan to help countries with weaker health systems.
11-12 -02-2020	WHO holds a global research and innovation forum on COVID-19 with over 400 experts.
16-20 -02-2020	A joint WHO-China mission, with international experts, travels to Beijing, Wuhan, and other cities to study the situation and response.
11-03-2020	Due to the alarming levels of spread and severity, and concerned by the lack of action in many countries, the WHO characterized the COVID-1 outbreak as a pandemic.
13-03-2020	WHO launches the COVID-19 solidarity response fund to raise money from individuals and organizations.
18-03-2020	The WHO and partners launched the Solidarity Trial, a major international effort to conduct clinical trials that aims to generate robust data from around the world to find the most effective treatments for COVID-19.

Source: WHO Timeline - COVID-19, 2020

The symptoms of COVID-19 varied largely, from none to life threatening illness. The transmission of the disease occurred mainly when an infected person is in close contact with another person. People remained contagious for 20 days, and could be carrier of the disease without showing any symptoms. The recommended preventive measures were social distancing, wearing facemasks in public, hand washing with soap and use of sanitizers, covering one's mouth while coughing and sneezing, disinfecting surfaces, proper ventilation and air filtering, and monitoring and self-isolation for people exposed or symptomatic (Symptoms of Coronavirus | CDC, 2021). Social distancing, wearing masks, and regular use of sanitizer became the norm after the spread of COVID-19 throughout the world. The spread of COVID-19 affected the economy of almost all the countries of the world in a negative way. The educational and training institutions remain closed and the institutions had to take learning to the students' home through online platforms (Starkey et al., 2021). The analysis of Asian Development Bank (ADB) showed that COVID-19 pandemic affected almost every sector of Nepalese economy, shaving up to 0.13 percent off the gross domestic product and rendering up to 15,880 people jobless. It has been evident in many sectors like tourism and hospitality, trade and production, supply and health, and education and entertainment (COVID-19 and Its Effect on Nepal, 2020). The pandemic affected the poor and more vulnerable communities within many countries due to the rise in inequality. Many individuals around the world lost their jobs and there was rapid rise in homelessness and hunger. There was an urgent need to excel and share technological advancement, and collaborate with each other in the world to fight against the effect of pandemic (Goldin & Muggah, 2020). COVID-19 brought everything to halt, when the world was moving at its own pace with full of day-to-day activities. Industries and organizations had to slow down their productions and business activities. There was stillness in every sector. Use of technology allowed people to communicate and work remotely maintaining the social distancing and the danger of virus transmission.

## Pre and post COVID-19 situations in Nepal

Nepal is a low-income country where lack of proper and adequate health system is still a problem and the rapid increase in the number of new cases and death raised alarm to the government for imposing shut down in every sector including the crowded education institutions (Panthee et al., 2020). The educational institutions were not ready to take the teaching learning practices in online platform. It was a cultural shift to administer pedagogical instruments through online not only to the school going kids but to the adults attending colleges and universities, and professionals. The lockdown created an eerie situation restricting people from movement. The government halted all the transportation system to stop the spread of virus. We observed inhuman situations in Nepal, people walked to their homes along with their families for days due to the lack in coordination between the local level and provincial government (Prasai, 2020). The daily wages labors had to eat at roadsides with the support of various social organizations and people supporting the campaign. People faced psychological terror of COVID-19, the house owners tried to force the health workers and frontline workers out of the rent (Shrestha & Kunwar, 2019). The market price went high and there was rampant black marketing that affected the people. Everything seemed fine a day before the lockdown but from the day of lockdown people started doubting everything. The number of suicide rate increased seeking attention for the mental wellbeing of the people as the enclosed environment, uncertainty situation, and lack of economic activity created a lot of mental stress (Fegert et al., 2020). During the lockdown, people panicked and government was just a bystander to watch the suffering. The lockdown affected the social life of the people and surged the demand of online activity. As the length of the lockdown started to increase people started to shift the physical activities in the online platforms. They started to search for alternative way of utilizing the online platform to perform their tasks and for entertainment.

The most affected was education so most of the educational institutes initiated the online teaching methodologies. Therefore, majority of the educational institutions of city areas in Nepal started the online education system, despite their weak preparation and understanding. In a few weeks of time all the students and teachers were using the online platforms like Google Meet and Zoom for synchronous teaching and learning. Organizations started using Google Meet, Zoom, Microsoft Teams or other available online platforms to perform their back-office activities. Even though the government permitted work from home modality, most of the official procedures of Nepal is still paper based due to which there is demand of physical presence of service seeker and provider. The GoN have to address this issue so that people can demand and receive through the online platform. This demands a whole of a nation approach in the area of technology implementation in the organizational business process.

Though the government was trying its best to tackle the second wave of COVID, the steps taken from political and national level were not sufficient due to which the virus was spreading rapidly alarming the national health emergency (Kamat, R. K., 2021). Nepal Administrative Staff College (NASC), a national level autonomous training institution estab-

lished in 1982 to cater the need of training to the government and public institution officials (NASC, 2021), provides the trainings to the employees from the public institutions. On 20 March 2020, NASC halted the physical mode training as a precaution to safety measures of COVID-19. The government announced the complete lockdown from 24 March 2020, which kept on extending until 16 September 2020. In between the NASC management decided to shift in the online platform to communicate and work from remote. The technical unit of NASC, Centre for Knowledge Management and IT (CKMIT) supported in selecting suitable online platform and training other employees to use the system for online training purpose. Afterwards 78 days later, NASC resumed the previously halted programs in online modality from 8 June 2020, by training the participants and resource persons in using the system.

### **Social distancing and online learning**

Social distancing is maintenance of necessary physical distance between people from different households in order to prevent the dissemination of disease (Adedoyin & Soykan, 2020; Social Distancing, 2020). It is maintained by keeping at least 6 feet away from each other, avoiding gathering in groups, staying out of crowded places, following the directions of local authorities, using delivery services, and connecting virtually with loved ones (How to Social Distance During COVID-19, 2020). After the COVID-19, pandemic social distancing became a new normal. The authorities prohibited gathering issuing notices. This affected almost all the industrial and organizational activities where people need to be physically present to perform a task. Panic struck in the people and they personally started avoiding meeting each other to break the chain of contamination. People started using the online platforms to communicate with each other. The private and public organizations started using the available platforms like Google Meet, Microsoft Teams, Zoom, CISCO Webx, and others as video conferencing tools to maintain social distancing and work remotely. The online interaction with family members, friends, teachers, doctors, and counselors provided a sigh of relief and better mental mood during social distancing. One of the challenges of COVID-19 was to pacify the mental state of all the people brought due to the social distancing factor (Fegert et al., 2020). The challenge faced by most of the organizations during the pandemic situation was to start the halted business addressing the complexity caused by the pandemic situation (Mukhtar et al., 2020; Whitelaw et al., 2020).

Online learning is the use of Information and Communication Technologies (ICTs) to develop materials for educational purposes, instructional delivery and management of the program (Adedoyin & Soykan, 2020). There are mainly two types of online learning synchronous and asynchronous, but the efficiency and effectiveness of online learning depend on the comprehensive understanding of the organization in the benefits and limitations of the method. Online learning is not a new idea; in 1980s, there was the start of online university degree programs, during 1990 to 2000 there was moderate maturation in the system and after 2010, there is abundant online learning and training platforms (Todorova & Bjorn-Andersen, 2011). People view the online learning as a good alternative to have but not a serious



model of replacement for traditional teaching learning method. The global practice of social distancing to break the chain of COVID-19 severely affected the traditional teaching learning practice. But the availability of technology and online platforms quickly transferred the teaching learning into the online platforms increasing the distance learning mode (Adedoyin & Soykan, 2020). In online learning the learners can interact, collaborate, and take ownership of their learning at their own pace and time (Ali, 2020). The online learning environment will become learner controlled and the role of educator becomes more of a facilitator as ICT immersed learning leads to self-directed learning (Geng et al., 2019). The practices of online learning is necessary not only in pandemic situations but at normal situations too, for which preparations has to be done in terms of ICT infrastructures, teachers and students readiness, availability of online learning platforms, and sufficient policy support for execution (Adedoyin & Soykan, 2020; Ali, 2020; Todorova & Bjorn-Andersen, 2011).

## **Challenges and difficulties in COVID-19**

The challenge rose by COVID-19 was to perform task remotely for which most of the organizations were not ready besides the IT companies that was practicing the same beforehand too. In the context of various countries to address the challenge, there were difficulties like availability of internet, electricity, purchasing power of the people, and availability of electronic devices (Adedoyin & Soykan, 2020; Gberevbie, 2018). Above all the attitude of the people towards using the technology stood as a major challenge. Due to the crisis, the physical face-to-face classroom activities appeared in the online platforms. The universities, vocational colleges and public training institutions moved the formal trainings in the online platforms. The isolation due to practice of social distancing during the COVID-19 effected on the mental health of child and adolescents, issues like anxiety, lack of peer contact, and reduced opportunities for stress regulations were the major concerns (Fegert et al., 2020). The people working from home had to cope up with a new daily life routine with family members around and the constant threat of infection and news of death.

Training is a planned effort made by an organization to facilitate learning of job-related competencies, knowledge, skills and behavior by employees which helps for the growth and development of an organization as well as an employee. It helps to maintain and refresh existing work-related skills and acquire new ones in demand. NASC faced the challenges of reorienting the organizational business process and executing its trainings to the public officials during the time of pandemic. It was difficult to come out of the lockdown state and reset a new organizational business process in the new normal situation. NASC shifted its trainings to online mode in order to address the new normal situation after pandemic. The online training has its own benefits and limitations. The shifting of training into online platforms reduced the context and contact that is necessary to understand the training as a whole. This reduced the opportunity to build rapport and relationships. The lack of face-to-face interaction or limited amount of interaction discouraged learning from peers. There is lack of depth in learning through face-to-face interaction and challenging the ideas, which

is available in person. In addition, it is difficult to read the non-verbal communication in online, which an integral part of dialog, negotiation, is and mediation training (Matovik, 2020). There are technology challenges and barriers in implementing online learning like device issues, internet connectivity, technology cost, and lack of technology skills. There student faced problems like incompatible devices, sharing devices with other family members, unstable internet connection, restricted or unavailable internet connection, data costs, purchasing new devices, new programs or apps, inexperience with ICT skills or lack of ICT skills, and inadequate learning platforms (Rahiem, 2020). Inclusiveness is one of the advantages of online learning where the participants from remote areas, or physically challenged participants can participate. The pre-requisites of basic digital skills, electronic devices, and reliable internet infrastructure can limit the access significantly (Adedoyin & Soykan, 2020). Despite the challenges and limitations, NASC tried to get most out of the online training platform to provide the feeling of physical training through individual interactions, breakout groups, cases studies, and compensating the physical interactions with digital. NASC implemented synchronous training methodology where both the trainees and trainer had to be present online during training. This provides the opportunity of real time virtual interaction with availability of necessary technology infrastructure and readiness.

### **Digital technology to breaking the barrier of COVID-19**

After the COVID-19 pandemic official meetings, communications, socializing, teaching, and learning activities shifted to online platform (Matovik, 2020). Many countries around the globe came up with their own online systems for learning during the crisis so that there will not be any disruption in school education. The telecommunication companies supported government by providing low-cost data. In addition, educational institutions in many countries used the communication platforms like television, radios, YouTube, WeChat, WhatsApp, Facebook Messenger, and Viber to stay in communication with the students and impart learning (How Countries Are Using Edtech (Including Online Learning, Radio, Television, Texting) to Support Access to Remote Learning during the COVID-19 Pandemic, 2020). The field of education and training had to incorporate the development in the area of ICT in the new normal situation by involving the teachers and trainers, so that during the pandemic situation also the activities remains undisturbed (Greenhow et al., 2020; König et al., 2020). The technology is evolving in such a way that the adoption initiatives by individual and educational institutions can make a great difference in running the courses online.

The countries with wider internet access and safer internet servers have better infrastructure on energy and transport. They have stronger governance and human development indicators on health, nutrition, and social protection to cope up with difficult situation like pandemics (Jiang & Ryan, 2020). The authorities can use the digital platforms to provide trustworthy and timely information on COVID-19 maintaining social distance. Online platforms connected millions of students and workers to their schools and offices from home during the lockdown to contain the COVID-19. South Korean government used digital tech-

nologies in contact tracing: Global Positioning System (GPS) data from vehicles and mobile phones, cellphone masts, facial recognition technology, bankcard records, and Artificial Intelligence (AI) powered big data analytics to understand and manage the spread of the virus (Whitelaw et al., 2020). Mobile payment system was widely used in developing countries of Asia and Africa, which saw the uprising of digital technology to tackle the challenges of economic activity. Digital technology can be accounted for building more resilient societies in pandemic, as people can access the official information, enroll in e-courses, take online jobs, send mobile money, do online shopping, and receive telemedicine services – no matter where they live provided that they have the access of quality internet service (Jiang & Ryan, 2020). The advantages of online learning is it ensures learning, it is manageable, and the students can access teachers and teaching materials, reduces travelling time and resources, eases administrative tasks like recording and attendance, and encourage the students to perform self-learning activities. The limitations include difficulty in teaching practical subjects, imparting only the knowledge component, immediate face-to-face feedback is difficult, and the students could engage in other irrelevant online activates. The online sessions can be better through continuous faculty development, reduction of cognitive component and increment of interactivities during the session. Online learning encourages easily manageable student-centered learning during the period of pandemic too (Mukhtar et al., 2020). During the pandemic, the traditional education system adopted the online learning modality; many educational technology companies started their services to cater the need of the educational institution so that the teachers and students gets connected during the lockdown period bringing resilience in education system during pandemic (Dhawan, 2020).

The crisis developed by the COVID-19 pandemic provided an opportunity for the test of the potential online learning modality in mass. Along with its potential, it has limitations like the prerequisite of adequate digital skills, availability of computer equipment and internet connection to undertake online training, the difficulty of delivering traditional work-based learning online, and the struggle of the teachers used to classroom instructions. With high quality reskilling and upskilling opportunities online training can expand in training adults. The trainings should provide sustainable employment opportunities for job seekers and productivity gains for firms and the economy as a whole. The online training encourages the participants to develop and upgrade their basic digital skills. It requires motivation from personal level to participate in the online training as the statistics show that number of completions of online training is relatively low. There is also need of broadening the range of online course so that the trainee will have plenty of choices on the courses. There has to be a well-established digital infrastructure for equal opportunity of access. The teachers need trainings to understand the benefits and limitations, and use the online tools to impart their content. There has to be effective testing methods for the certification process to ensure quality and trust in the online training systems (The Potential of Online Learning for Adults: Early Lessons from the COVID-19 Crisis, 2020).

Whole world started using technology to stay virtually connected with the use of various internet and mobile technology. IT based organizations developed and provided services to bridge the gap of communication. There was rise of home delivery services where technology provided a common platform for the service seekers and providers to communicate. E-Commerce, online banking, and mobile banking activities increased and people started receiving services by staying at home. Many organizations started “Work from Home” where the employees had access to digital systems and online video conferencing tools to stay connected with the teams staying at various geographical locations to work in team. People and organizations started to use the available video conferencing platforms to stay connected and work in team. The online learning and training were also possible due to the availability of such platforms. The educational institutions started to use the platforms like Microsoft Team, Google Meet, ZOOM, and CISCO Webx to teach in the synchronous mode. NASC explored the potential of using the available digital tools to execute the remaining training programs. Use of technology for training was the only way to achieve the social distancing during the pandemic so that the officials can participate in the training program by staying at homes. The IT companies had products for video conferencing, which they tested and upgraded during the pandemic. The better performance of the systems and free availability of such systems encouraged the organization in developing countries to adopt the technology. Technology has helped to break the barrier of lockdown during the pandemic situation by bringing the teachers and students in an online platform but for this necessary resource, staff readiness, confidence, accessibility and motivation are necessary factors (Ali, 2020). Due to the state of lockdown, the demand of the online video conferencing and chat platform skyrocketed, and the constantly emerging technologies like Facetime, WeChat, WhatsApp, Skype, Zoom, Slack, and Google Meet served the purpose (Arshad, 2020). The COVID-19 incident highlighted the importance of online learning but the readiness at the operation level seemed weak in case of Nepal, this learning can be fruitful in making future decisions for developing online learning platforms where the Gen Z is already indulged into (Diyal & Pandey, 2024; Gharti, 2023).

### **Taking training to online platform at NASC**

Trainings provided by NASC has both the personal and organizational values and benefits. As the government-imposed lockdown, all the activities came to halt, NASC stopped the ongoing training programs and the future of the upcoming trainings were uncertain. Problem always comes with opportunities, so the pandemic was an opportunity to execute the training programs through the online platforms. GoN announced “Digital Nepal Framework” in 2019 with an objective to take all the government activities into digital platform to create a knowledge-based society (MoCIT, 2019). In the same framework, GoN has envisioned to develop an online training platform to increase the access of the training programs. It was time for NASC to reorient its business process with the technological interventions. There was an unknown situation and this was drawing everyone towards a different mental state. To stand up in the

new normal situation and perform the organizational activities NASC decided to perform the training using the online platform. NASC underwent various stages before starting the online training programs. First of all, the need of mindset and support from the leadership was required, as the implementation of online training would change the traditional training method. Leadership also needs to be reflective and embrace the online-learning technologies before any other disaster strikes (Todorova & Bjorn-Andersen, 2011). Despite the availability of technologies to support online learning and recurrence of disasters, leaderships never became serious in moving towards the online learning, which could have replaced the traditional need of face-to-face learning and a lot of innovation and development had been achieved till now (Dhawan, 2020). Once the leadership was convinced with the necessity of online training the second task was to choose from the existing online platform suitable to the nature of NASC's training. Then the training coordinators and management remodeled existing courses for the online modality maintaining the integrity of the course. Then NASC provided technical trainings to the trainers, coordinators, and trainees on using the system. After all these stages and trainings, the actual online training started at NASC.

The process of adaptation started with the use of online platforms among the management teams to perform the regular weekly meetings. After the management felt easy to use the system, they decided to take the training on the online platform. In physical training, trainers use different training tools and activities to keep the people engaged. This was a challenge for the trainers where they have to refine their training in such a way that they will not bore and impart the necessary knowledge and skills too. The technical team of NASC started exploring the existing online platforms and selected Google Meet and Google Classroom for long training programs and Zoom for short training programs. Google Meet and Zoom are video conferencing platforms where the trainers and trainees can communicate with each other using the meeting id created by the meeting manager. The Google classroom is an asynchronous digital platform where the trainer and trainee can communicate each other through messages, provide home assignments, share necessary files, and start a discussion forum. NASC also used the existing online document management system (DMS) ([www.dms.nasc.org.np](http://www.dms.nasc.org.np)) to share the necessary presentation slides and extra materials with the participants. The DMS requires a username and password to access the uploaded files.

NASC conducted 51 training programs using the online platforms during the fiscal year 2020/21 and 2021/22 to 5295 participants (NASC, 2021, 2022). CKMIT provided the trainings to the training coordinators, trainers and trainees on using the system. The orientation program helped them to understand the benefits and drawbacks of the online platforms. The training coordinators understood how to manage an online training using the available resources. The trainers practiced on maximum utilization of the online platform for delivering the training program maintaining sufficient virtual interaction with the participants. The trainees practiced on joining the online training sessions, interacting virtually with the trainers using chat or voice. They practiced to use the Google classroom platform to create discussion forum, upload in the assigned assignments, and interact with coordinators and

trainers. The technical team also provided the backend support on running the training program for few days after the start of the training programs. After that only during the time of emergency, the technical team provided the support. Once they received the training on utilizing the system and executed the training program, they were all confident and comfortable with the system.

Once NASC started delivering training through the online modality, other public training agencies also shifted their training programs to the online platform. The shifting did not require huge investment. At first as everyone was, working from home laptop and high-speed internet was enough to execute the online training programs. Once NASC lifted the work from home and the coordinators started to come to office, CKMIT set up training rooms using desktop systems and projectors. The speaker could view the participants in the front projection screen and the slide. The coordinator could stay in the training studio or in room to monitor and facilitate the training program. With the increase in the number of training programs, the bandwidth demand of the internet increased. Just before the spread of COVID-19 in December 2019, NASC or other training institutions in Nepal never thought of using online platforms for virtual training program despite the availability of technology. Just in a few months period after the pandemic every organization was looking for an alternative way to conduct day-to-day activities. Technology provided the solution. With the access of internet and availability of mobile devices, one could join an online learning platform. NASC was ready to explore the options and adopt the technological interventions in conducting the training program through online platforms. The desperate situation created by the pandemic forced the leadership of NASC to think about the alternate ways to keep going on the business. Change is difficult to implement both in the implementer and receiver side, but sometimes the situation is as such, there is no other way than to change. There could be situation where you change to survive or you perish. NASC decided to change and adopt technology in its business process so that it can carry forward the day-to-day activities and justify its existence. This has provided a new dimension to the trainings of NASC and has provided confidence to the management that in any case we could take the alternate route to perform the organizations' task. It is the era of technology and every organization has to incorporate technology in their business process so that the business will be automated, digitized, reengineered and innovated. The technological intervention in the existing business process will help to take the business and existence of the organization into next level. An online survey was conducted with the participants of the online training programs to get their feedbacks on the effectiveness of the online training programs.

## **Methods and Materials**

This study employed a mixed-methods research approach to comprehensively investigate the transition to online training at the Nepal Administrative Staff College (NASC) during the COVID-19 pandemic. A case study research design was utilized to conduct an in-depth analysis of this specific phenomenon within its real-world context i.e. NASC.

The research population consisted of public officials who participated in NASC's online training programs during the 2020/21 and 2021/22 fiscal years. The sampling unit was an individual training participant. To determine the appropriate sample size for the study, Slovin's formula was applied, which is commonly used when the population size is known:

$$n = \frac{N}{1 + Ne^2}$$

Where  $n$  is the sample size,  $N$  is the population size, and  $e$  is the margin of error. Given a population of 5,295 and a desired sample size of 90, the formula was rearranged to calculate the margin of error:

$$90 = \frac{5295}{1 + 5295e^2}$$

Solving this equation yielded:

$$e = \sqrt{\frac{57.8333}{5295}} \approx 0.1045 \approx 10\%$$

Thus, a sample size of 90 corresponds to a 10% margin of error, indicating that the selected sample can represent the population with an expected accuracy of  $\pm 10\%$ . A simple random sampling technique was used, where the survey was distributed to all potential participants, resulting in a sample size of 90 respondents for the quantitative component. For the qualitative data, a purposive sampling technique was used to select 15 participants for interviews to gather detailed feedback.

Data were collected from primary sources. Data was gathered using two main instruments: a structured online survey created via Google Forms and semi-structured interviews. The survey collected data on demographics, technical capacity, and participant experiences using Likert-scale and multiple-choice questions.

Quantitative data from the survey were analyzed using descriptive statistics, including frequencies, percentages, means, and standard deviations, to summarize the participants' responses and experiences. Qualitative data from the open-ended interview responses were analyzed thematically to identify recurring patterns, challenges, and perceptions regarding the effectiveness and limitations of the online training programs. This integration of quantitative and qualitative data provided a holistic understanding of the research problem.

## Results

The online google form was shared with the training participants of the online training programs. Ninety responses were received from the survey questionnaire. Among the respondents 77 are male and 13 are female. 40 respondents are currently working as section officer, 40 as under secretary and 7 as joint secretary.

**Table 2: Demographic profile of respondents**

<b>Number of responses</b>		<b>90</b>
<b>Gender</b>		
	Male	77
	Female	13
<b>Current Job Position</b>		
	Section Officer	43
	Under Secretary	40
	Joint Secretary	7
<b>Age Group</b>		
	30-40	46
	41-50	32
	51-58	12

Note: Survey data 2024

Table 3 shows the responses on eight questions from the participants mostly related on the technical aspects of the online training. The result shows a positive sign for the online training only indicating that the interruptions could be caused by weak infrastructure.

**Table 3: Responses on statement**

S.N.	Question	Response (%)	
		Yes	No
1	I have good internet connection facility.	95.5	4.5
2	I used mobile data for internet connection.	45.5	54.5
3	I have electronic device for internet browsing.	94.3	5.7
4	I accessed the virtual training through.      Smart phones Laptops Desktop	31.8 93.2 15.9	
5	I attended complete classes.	96.6	3.4
6	The video was clear.	96.6	3.4
7	The audio was audible.	98.9	1.1
8	There was interruption during the session.	67	33

Note: Survey data 2024

The percentage value of the responses shows that most of the participants have a good internet connection facility (95.6%). In terms of internet access, 45.5% of the participants use mobile data for internet connection. Most of the participants (94.3%) have electronic devices for internet browsing, where they use a mix of devices for internet access. Most of the respondents used laptops and smart phones compared to desktop for the access of the virtual training. Majority of participants (96.6%) attended the complete training. The video was clear to majority of the respondent (96.6%). The audio was audible to all the participants



(98.9%). The participants (33%) faced interruptions during the training sessions due to poor internet connections or power failures.

Table 3 shows the descriptive statistics of the survey responses obtained in the Likert scale that ranges from strongly agree (5) to strongly disagree (1). The survey captures the experience of the training participants on using the online platform Google Meet and Google Classroom to participate in the virtual training session. The mode, mean and standard deviation indicates that the participants felt easy to use and adapt to the online systems. This indicates that the government employee are ready to adapt the online training platforms that not only will be useful during the disaster situation but also can be supportive to the remote training while performing their job.

**Table 4: Responses on statement**

S.N.	Question	Options					Mode	Mean	Standard Deviation
1	I found Google meet easy to use.	5	4	3	2	1	5	4.55	0.5
2	I found Google classroom easy to use.	5	4	3	2	1	4	4.39	0.52
3	The Google classroom was interactive like classroom session.	5	4	3	2	1	4	3.89	0.87
4	I could interact with the resource person.	5	4	3	2	1	4	4.18	0.59
5	There was no difficulty in understanding the session.	5	4	3	2	1	4	4.17	0.61
6	The induction training of the virtual class helped me to use the system.	5	4	3	2	1	4	4.31	0.59
7	The coordinators were helpful in using the virtual class.	5	4	3	2	1	5	4.73	0.45
8	I encountered technical problems in joining the virtual class.	5	4	3	2	1	2	2.85	1.05
9	I took support of a technical person in joining the virtual class.	5	4	3	2	1	2	2.84	1.18
10	I felt comfortable with the virtual training classes.	5	4	3	2	1	4	4.29	0.65
11	Now I can attend any virtual training sessions.	5	4	3	2	1	4	4.43	0.56
12	Virtual training will save my time and effort.	5	4	3	2	1	5	4.42	0.60
13	Virtual training can substitute the existing traditional training methodology.	5	4	3	2	1	4	3.64	0.97

*Note: Survey data 2024*

## Interview responses

The participants were interviewed in person to get the feedback on the training program during and after the completion of the training program. The feedback from the interview provides their experience and personal thought on the online training program. Some of the

responses from the participants on how was their experience on the online training program are as following.

*"I am very much happy with the online training program that I could participate and finish the training program despite of being tested COVID positive."*

*"Unfortunately, I broke my leg during the training program, but I am thankful to NASC that I could complete the training through online resting at home."*

*"I was hospitalized as I tested positive for COVID, but I joined from hospital using mobile data and completed the training."*

*"I could perform the official tasks before and after the training program. It is possible only due to the online training modality."*

*"Not only I have gained knowledge on various topics but I have learnt how to use an online learning platform too."*

*"The lack of electricity, good internet connectivity, and sometimes physical disturbances hindered the training program otherwise it is good to have online training program."*

*"People from remote location can also join the program without travelling or leaving the office so that we can provide public service and attend the training as well."*

*"We did not have the experience of physical interaction but we learnt about and did the virtual interactions, which is the requirement of the current situation."*

*"The online training can reduce the cost of the training as well as it will increase the reach of the participants, but NASC needs to make the content and delivery as interactive as possible."*

*"As we are on the mode of on-the-job training, sometimes we are disturbed by unexpected incidents and responsibilities."*

*"The group work was done in online mode, so the direct interactions with the people and officials were not possible due to which we were forced to use the information available in web-sites. This might not have provided us with the actual scenario of local level or community."*

*"Though online virtual classes are effective and convenient to stay point of views but has a lot more limitations in learning and interacting process, difficult in active participation and focus on individual inter-participant interaction is also limited."*

*"Online training saves time and money; it should be made available at regular times after COVID too as we can participate the training program from our own offices."*

*"Online training is good for imparting the theoretical knowledge. Lack of good internet is a drawback."*

*"The length of online training has to be increased to ensure involvement of every participant and make the training interactive."*

The interview responses from the participants' hints that the training delivered in virtual modality was fruitful to them. Despite of various difficulties, they faced like being tested COVID positive or other health issues also they could participate on the training program remotely. They became aware of limitations of virtual training like availability of good internet access, compatible electronic devices, and a peaceful place without distraction. They expect NASC to make the virtual training content more participative.

Table 5 shows the Training Methodology Feedback, where most of the respondents' feel that the online training methodology used were effective to their learning.

**Table 5: Training methodology feedback**

Training Methodology	Effective	Effective to a large extent	Reasonably Effective	Ineffective
Online Lecture/Discussion	35.7%	50.0%	10.7%	3.6%
Online/Virtual Field work in ELG	46.4%	32.1%	17.9%	3.6%

*Note: Survey data 2024*

## Discussion

The journey of NASC into online training is a powerful testament to how a crisis can accelerate institutional change. Our findings reveal that the transition, while born of necessity, yielded significant and unexpected successes. The training of 5,295 officials demonstrates not just continuity, but a dramatic expansion of reach, a finding that resonates with Dhawan's (2020) observation that the pandemic forced a rapid digital evolution. This shift, however, was far from straightforward and mirrors the complex blend of opportunity and challenge highlighted in the literature (Adedoyin & Soykan, 2020).

The high levels of participant satisfaction with platform usability and the quality of audio/video are encouraging. However, the fact that 67% of participants reported interruptions, often linked to the use of mobile data, brings the literature's warnings into sharp focus. As Koirala et al. (2021) cautioned, the digital divide in Nepal is a tangible barrier. Our results confirm that while participants were willing and able, the underlying infrastructure—the "good internet connection" reported by 95.6%—was often fragile. This underscores Adedoyin and Soykan's (2020) argument that online learning can expose inequalities in technological resources, even among a relatively privileged group of public officials.

Furthermore, the experience with the "Engaging with Local Governance" module perfectly illustrates a key limitation. While the tasks were completed, participants consistently felt a lack of depth compared to physical fieldwork. This echoes the concern that online learning can reduce the opportunity for the rich, peer-to-peer learning and the nuanced understanding of ground realities that are hallmarks of traditional training (Matovik, 2020). The virtual breakout rooms, while functional, could not fully replicate the rapport built through direct interaction.

Ultimately, this study shows that NASC's story is not about online training replacing the physical classroom. Instead, it is about building resilience. The positive feedback and the newfound digital competence of staff create a compelling case for a blended future (Khatri et al., 2021). The pandemic was the push NASC needed to embrace the Digital Nepal Framework in practice, not just in policy. The challenge now, as Greenhow et al. (2020) suggest, is to leverage this hard-won experience. By thoughtfully integrating the strengths of both online and in-person methods, NASC can build a more flexible, inclusive, and robust training system ready for whatever challenges the future may hold.

## Conclusion

This research set out to document a story of forced innovation at the Nepal Administrative Staff College. The pandemic was a brutal disruptor, but the response from NASC's leadership, trainers, and participants was a powerful display of resilience. Thrown into the deep end, the institution managed not just to stay afloat but to navigate new waters, training thousands of officials through a screen when meeting in person was impossible.

The findings paint a picture of cautious optimism. On one hand, the success is undeniable. The sheer number of participants reached-over five thousand-would have been difficult to achieve under traditional models. Officials from remote areas, those who fell ill, and those balancing work duties found a lifeline in these online programs. They gained more than just the course content; they built a new layer of digital confidence, a skill that will serve them and the public they serve long into the future. This aligns with the global recognition that technology became an essential bridge across the chasm created by social distancing (Dhawan, 2020).

Yet, the experience was also humbling. The feedback from the field exercises in the governance module was particularly telling. While the tasks were completed, the participants knew something was missing. The crackle of a poor internet connection, the silence where a spontaneous question should have been, and the flat image of a community that should have been felt and experienced- these moments reminded everyone that a virtual room, no matter how well-managed, cannot fully capture the magic of human presence. The limitations Ade-doyin and Soykan (2020) warned about-the gap between access and true effectiveness-were felt in real time.

Therefore, the true lesson for NASC is not that one mode is superior to the other. The lesson is that preparedness requires both. The physical classroom, with its rich, unscripted interactions, remains irreplaceable for deep, experiential learning. But the online platform is a powerful tool for reach, resilience, and continuity. As we move forward, the goal should not be to choose one over the other, but to weave them together thoughtfully. By building on the digital foundation laid during this crisis, NASC can create a more flexible and robust training system-one that can withstand future shocks and extend the promise of professional development to every corner of Nepal's civil service, no matter the circumstances.

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## Appendix 1: Plagiarism and AI detection test report

### Shyan Kirat Rai

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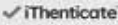
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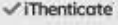
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# Indigenous Voices on “No Koshi” Movement

*Dr. Lal-Shyākarelu Rapacha,\**

\* Campus Chief, United College,  
Tribhuvan University

\* Corresponding Author<sup>1</sup> Email:  
Email: principal@united.edu.np  
& kiranti.rapachalal@gmail.com

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## Abstract

*This study explores the politics of naming and Indigenous recognition in Nepal through an analysis of the “No Koshi” movement following the renaming of Province No. 1 as Koshi Province. Grounded in critical toponymy and decolonial theory, the research aimed to examine how Indigenous communities interpret naming as a site of recognition, erasure, and resistance within Nepal’s federal restructuring. Guided by an interpretive philosophical position, this study followed a qualitative approach using an ethnographic research design. The data for the study came from multiple sources: 30 semi-structured interviews, 3 FGDs, 5 participatory observations, and secondary materials. All the collected data were carefully examined and interpreted through thematic analysis. The findings revealed six interrelated themes-highlighting that naming is both a symbolic and political act tied to collective memory, procedural legitimacy, protest, and aspirations for inclusive federalism. The study concludes that Indigenous voices were marginalized in the renaming process, undermining principles of Free, Prior, and Informed Consent (FPIC). It recommends institutional reforms to ensure participatory governance, cultural recognition, and equitable representation within Nepal’s federal framework.*

**Keywords:** Indigenous voices, “No Koshi” movement, Cultural Sovereignty, Nepal

## Introduction

On March 1, 2023, the Provincial Assembly of Nepal’s then–Province No. 1 adopted the name Koshi Province with the constitutionally required two-thirds majority. The decision immediately sparked protests across the eastern hills and Tarai, led largely by Indigenous (in Nepali termed as Adivasi Janajati) organizations who argued the hydronym “Koshi” erases territory-based Indigenous histories, languages, and political

claims long associated with names such as Kirat (orig. Oirat see Rapacha 2019 and 2018 and elsewhere) and Limbuwan (e.g., Kirat–Limbuwan Sangharsh Committee, The Kathmandu Post, 2023a; DRCN, 2023). These mobilizations-widely referred to by organizers and media as the “No Koshi” movement-link symbolic recognition (what the province is called) with long-standing struggles over autonomy, land, languages, cultures, and meaningful representation in Nepal’s federal order (IWGIA, 2024; Tamang, 2014/2015).

The naming controversy sits at the intersection of constitutional design and identity politics. Nepal’s 2015 Constitution created a federal republic and assigned provincial naming to each assembly, requiring a two-thirds vote (Government of Nepal, 2015; Constituent Project, n. d.). Yet, critics contend that procedural compliance did not amount to substantive consultation with the Indigenous constituencies numerically and historically embedded in the province, where Kirat-Rungku (Rai), Kirat-Köits (Sunwar/Mukhiya), Kirat-Yakthung (Limbu/Subba), Tamang, Magar and other Indigenous communities constitute sizeable shares of the population (FNCCI-Koshi, n.d.). The resulting contention highlights a core paradox of Nepal’s post-conflict federalism: a state that proclaims inclusion but struggles to institutionalize Indigenous self-identification at provincial scales (DRCN, 2023; IWGIA, 2024).

Understanding Indigenous perspectives is especially salient given the demographic and legal contexts. The Government of Nepal officially recognizes 59 Indigenous nationalities under the NFDIN Act, and census-based estimates place Indigenous peoples at roughly one-third of the national population (Indigenous Voice, n.d.; IWGIA, 2023). In Koshi specifically, publicly available profiles show double-digit provincial shares for Kirat-Rungku (Rai/Dewan formerly Yakkha also), Kirat-Köits (Sunwar/Mukhiya) and notable proportions for Yakthung (Limbu/Subba), among other Adivasi Janajati groups-an ethnic geography that underpins claims for names reflecting Indigenous histories such as Kirat or Limbuwan or Khambuwan or Köitswan (FNCCI-Koshi, n.d.). As protests escalated through 2023-including highways blocked and mass rallies in Biratnagar, Dharan, and Lalitpur -advocates framed “No Koshi” as a demand for recognition with consent, not merely renaming (Kathmandu Post, 2023a, 2023b; Setopati, 2023).

Beyond naming, the movement links to broader Indigenous agenda: protection of sacred landscapes, resistance to extractive or touristic projects perceived as dispossessive, and calls for meaningful participation in executive decision-making-as seen in parallel legal and political crises in the provincial government in mid-2023 (Nepal Live Today, 2023; Kathmandu Post, 2023c, 2023d). This article centers Indigenous voices within that conjuncture. Specifically, it asks, “How do Indigenous activists, elders, and cultural leaders interpret the stakes of “No Koshi”? What forms of history, place-attachment, and rights discourse are mobilized? How do these articulations envision a more inclusive federalism?”

Empirically, the study contributes a grounded account of Indigenous meanings and motivations that are often flattened in policy debates. Theoretically, it connects recognition politics and federal naming to scholarship on decolonial geography and participatory constitutionalism in South Asia. Practically, it informs ongoing conversations on inclusive provin-

cial toponymy, consultation standards, and mechanisms for consent in Nepal’s multi-level governance. By foregrounding Indigenous narratives, we aim to move beyond a binary of “for or against renaming” toward a more textured understanding of what recognition, autonomy, and belonging mean in contemporary “Koshi”- widely advocated to be as Kirat, reflecting its deep historical and civilizational roots.

## **Literature review**

### ***1. Federal restructuring, identity politics, and Indigenous movements in Nepal***

Research on Nepal’s post-2006 transformation shows that federal restructuring opened new terrains for identity claims while also institutionalizing procedures - such as supermajority rules for naming provinces - that can mute historically marginalized voices (e.g., Article 295(2) requiring a two-thirds vote of a provincial assembly). Classic syntheses by policy and election observers argued that identity-based mobilization would shape federal outcomes, with the eastern hills-home to Kirat-Rungku (Rai/Dewan formerly Yakkha also), Kõits (Sunwar/Mukhiya), Yakkha and Yakthung (Limbu/Subba) peoples-standing out for autonomy demands (e.g., Kirat Limbuwan) even before the 2015 Constitution was promulgated (Carter Center, 2013; International Crisis Group, 2010). Studies of the constitution-building process likewise trace how inclusive promises often narrowed in practice, leaving unresolved questions about recognition, language status, and sub-provincial autonomy that later reappeared in provincial naming disputes.

Parallel literatures on legal standards note that Nepal ratified ILO Convention No. 169 in 2007 and has endorsed UNDRIP 2007, establishing expectations for consultation and consent with Indigenous peoples in state decision-making. However, national bodies and civil society assessments highlight gaps between formal commitments and implementation, a tension that directly informs Indigenous critiques of top-down provincial naming (ILO, n.d.; UN, 2007; IWGIA, 2024). Conceptual and doctrinal work on Free, Prior and Informed Consent (FPIC) elaborates its linkage to self-determination and outlines practical protocols that are often absent from provincial-level processes in Nepal (Barelli, 2012; IWGIA, 2023).

### ***2. The “No Koshi” movement and contemporary documentation***

Focused analyses of the 2023–2024 “No Koshi” protests-organized largely by Indigenous networks in what is now Koshi Province-emphasize both symbolic and procedural grievances. Democracy Resource Center Nepal’s (DRCN, 2023) policy brief synthesizes interviews with movement actors, situating the agitation within longer genealogies of Kirat (Rapacha, 2018, 2019) and Limbuwan (orig. Yakthung Laje) claims and warning of governance risks if recognition deficits persist (DRCN, 2023). Reporting by human-rights and Indigenous organizations documents policing practices and episodes of violence; these include the widely reported killing of Padam Limbu (Lajehang) in Dharan, Sunsari and mass arrests in December 2023 - events that elevated protester calls for meaningful consultation rather than mere-

ly retroactive outreach (IWGIA, 2024; U.S. Department of State, 2024; LAHURNIP, 2025; Ninglekhu, 2024). News coverage provides contemporaneous accounts of road blockades, rallies, and coalition-building by groups such as the Kirat–Limbuwan Sangharsh Committee immediately after the provincial assembly adopted the name “Koshi” in March 2023 (Kathmandu Post, 2023a, 2023b).

Beyond the renaming itself, newer movement-facing commentary traces how “No Koshi” became an umbrella for broader Indigenous claims about land, sacred landscapes, and development pathways (e.g., contesting tourism megaprojects without consent), a frame that connects the naming dispute to FPIC and environmental governance (Ninglekhu, 2024). Notably, while media and NGO reports are rich, peer-reviewed scholarship dedicated specifically to “No Koshi” remains sparse—indicating a gap this study addresses by foregrounding Indigenous voices.

### ***3. Indigenous histories, ethnolinguistic geography, and Kirat/ Limbuwan scholarship***

Longer-arc scholarship on the eastern hills contextualizes why names such as Kirat and or Limbuwan carry political weight. Analyses of autonomy movements in the east predate federal restructuring and document institutional ruptures (e.g., the dismantling of Kipat ‘communal land tenure’) that reconfigured Yakthung (Limbu) political economy and identity (Hangen, 2010). Paired with rhetorical and movement analyses, these works show how Indigenous leaders mobilize rights discourse alongside historical memory to articulate claims over territory, culture, and representation (Lawoti & Hangen, 2013; Tamang, 2015).

A new micro-literature on Kirāti and Limbu toponymy—linking clan histories, settlement ecologies, and place-names—demonstrates how names are repositories of Indigenous social geography. Recent studies of Athrai and broader Kirāti toponyms (2024–2025) provide methodological templates (historical-linguistic and ethnographic) to read toponyms as claims to belonging and governance, resonating directly with the politics of provincial naming (Subba, 2025; Gautam et al., 2025).

### ***4. Critical toponymy and recognition politics***

Theoretical work in critical toponymy argues that place names are instruments of power that territorialize authority and encode dominant histories; renaming struggles therefore surface conflicts over who decides, whose pasts are honored, and how recognition is materialized (Rose-Redwood et al., 2010). Global syntheses and case studies—from colonial Nairobi to Antarctica—illustrate how naming operates across scales, while recent interventions push beyond a simple power/resistance binary to everyday, relational practices of naming (Giraut & Houssay-Holzschuch, 2022; Wanjiru-Mwita & Giraut, 2020). Cutting-edge theoretical proposals (Misco et al. 2025) explicitly tie decolonization to toponymic critique, offering conceptual tools for reading movements like “No Koshi” (Taylor & Francis Online).

Crucially for Nepal, emerging scholarship examines toponymic struggles under federal restructuring, arguing that names have become proxies for ethnic or Indigenous recognition,

belonging, and language rights, especially where constitutional procedure (two-thirds voting) is not paired with robust consent practices (Karki & Wenner 2020). This literature suggests that evaluating the legitimacy of provincial names requires attention to both (a) process (consultation/consent norms under ILO 169/UNDRIP) and (b) substance (the semiotics of Indigenous place-names and their historic geographies).

### **5. *Synthesis and identified gaps***

Across these strands, three gaps appear. First, while legal and policy texts foreground constitutional procedure, few studies assess these processes against FPIC standards from the perspective of affected Indigenous communities in Koshi. Second, most accounts are event-driven; systematic, qualitative documentation of Indigenous meanings attached to alternative names (e.g., Kirat, Limbuwan) is only beginning to emerge (Gautam et al., 2025; Subba, 2025). Third, cross-fertilization between critical toponymy and Nepal-specific Indigenous studies remains limited. This article addresses these gaps by centering Indigenous narratives about naming, authority, memory, and consent, and by situating those narratives within both Nepal’s federal architecture and global debates on decolonizing place-names (Wu & Young, 2022).

## **Method and Materials**

This study adopted interpretive philosophy based on the understanding that people create meaning through their experiences and interactions (Kvale & Brinkmann, 2015). To truly understand the “No Koshi” movement, this study focused on listening to how participants themselves interpret their struggle and symbols.

Consequently, a qualitative research approach was the only logical part forward. As Braun and Clarke (2006) argue, qualitative methods are designed for this kind of deep, contextual understanding. This approach was particularly adept at unpacking the power dynamics and historical memories that are woven into contested political symbols (Rose, 2016; Wu & Young, 2022).

With regard to research design, an ethnographic design was selected as the study involved sustained immersion in the “No Koshi” movement to properly center community narratives and oral histories (Bernard, 2017). This design also aligned with design of Nepali Indigenous studies (Subba, 2024; Tamang, 2015).

The study drew on both primary and secondary data to build a comprehensive picture. Primary data was collected through semi-structured interview, focus group discussions (FGDs), and participative observation, conducted between October 2023 and February 2024. First, semi-structured interviews were held with 30 individuals including Indigenous leaders, activists, cultural elders, and youth representatives from groups like kirat-Limbuwan Sangharsh Samiti and various Janajati federations. These conversations, which lasted between 45-90 minutes, were conducted primarily in Nepali, Yakthung Pa:n (Limbu), and Kirawa Yang (Bantawa), with translators assisting where necessary. The interview guides were flexible, following the ethnographic protocols suggested by Kvale and Brinkmann (2015) to en-

courage personal narratives while maintaining a coherent line of inquiry.

Second, three FDGs were organized in the towns of Dharan, Dhankuta, and Biratnagar, each involving eight to ten participants. These sessions were vital. They became spaces for collective reflection, where the symbolic weight of names like “Kirat,” “Limbuwan,” and “Koshi” was debated and defined by the community itself. The FDGs proved especially valuable for drawing out the perspectives of youth and women, whose voices are sometimes marginalized in more formal leadership settings.

Third, the research included participant observation at five separate protest events in Dharan and Biratnagar during November 2023. This was not a passive activity. It involved documenting the sights and sounds of the mobilizations – the specific slogans on banners, the rhythm of chants, and the emotional charge of speeches. This methods, well-established in the study of Nepali politics by scholars like Hangen (2010) and Lawoti and Hangen (2013), captured the performative and affective dimensions of the protest, elements that are often lost in the transcribed text of an interview.

After primary, secondary data was gathered through a review of news reports from sources like The Kathmandu Post and Setoapti, policy briefs from NGOs including the Democracy Resource Center Nepal and IWGIA, and official government documents such as the 2015 constitution. These materials helped to construct a timeline of events and to understand the state’s official response to the protests. Furthermore, the study engaged with existing scholarly work on Indigenous rights, federalism, and critical toponymy (Wu & Young, 2022; Misco et al., 2025; Carter Center, 2013) to situate its findings within a broader academic conversation.

Given the specific focus on the “No Koshi” movement, a purposive sampling technique was used to identify and recruit individuals with direct experience of the protests. This was supplemented with snowball sampling, where initial participants helped to connect the study with other community members, ensuring that grassroots voices beyond formal organizational structures were included. This technique is widely recommended for reaching marginalized populations where standard sampling frames for ineffective (Bernard, 2017).

In order to maintain ethical integrity, this study explicitly designed to adhere to the principles of Free, Prior and Informed Consent (FPIC), in line with international standards set by ILO Convention 169 (ILO, 1989) and the UN Declaration on the Rights of Indigenous Peoples (UN, 2007), which Nepal has ratified. Before any data collection, participants were thoroughly briefed on the study’s aims, assured of their anonymity, and informed of their right to withdraw at any time without consequence. Pseudonyms are used throughout this work to protect their identities. Acknowledging the real risks of surveillance and police reprisal for activists in Nepal (IWGIA, 2024), extra precautions were taken, including secure data storage and the omission of potentially identifying details. Ultimately, the methodology was shaped by the Indigenous research ethics championed by scholars like Smith (2012), which prioritize reciprocal, respectful, and relationally accountable engagement with communities.

All interviews and FDGs were recorded, transcribed, and translated into English. The

analysis was an iterative process. Using NVivo 12 software, the data underwent thematic coding. Initial codes were informed by the study’s theoretical interests – recognition, FPIC, critical toponymy. However, the process remained open to inductive codes that emerged directly from the participants’ own language and concepts, such as *aamru* (ancestral land) and *namrakhne ko adhikar* (the right to name). The analysis followed the systematic six-step framework for thematic analysis outlines by Braun and Clarke (2006), moving from data familiarization to the final reporting of themes. To bolster the validity of the findings, the emerging themes were constantly checked against the observation notes and secondary documents in a process of triangulation.

## Results

### ***1. Naming as Recognition and Erasure***

This was the first and most dominant theme emerging from the semi-structured interviews, focus group and discussions, participatory observations, and secondary data analysis. This theme captured how Indigenous participants interpreted the renaming of Province No. 1 as Koshi Province as both a symbolic act of exclusion and a continuation of historical marginalization. The data revealed that for Indigenous communities, names are not merely administrative levels but expressions of collective identity, memory, and sovereignty over ancestral territories.

During interviews, nearly all participants described the term Koshi as *“thoparieko naam”* – an imposed name disconnected from their cultural and historical roots. A limbu elder explained, *“Koshi is only a river, not our history. When they named our province after it, they washed away our identity.”* Similar sentiments were echoed in focus group discussions held in Dharan and Biratnagar, where participants argued that Kirat, Limbuwan, or Kōitswan would have represented their ancestral continuity and shared sense of belonging. The emotional tone of these discussions reflected a deep awareness that the provincial name was not a neutral choice, but a politically charged act that erased Indigenous narratives from official recognition.

Analysis of secondary sources, including NGO reports and policy documents, supported these findings, the DRCN (2023) and IWGIA (2024) both observed that the renaming process was conducted without meaningful consultation with Indigenous stakeholders, despite Nepal’s commitments to Free, Prior, and Informed Consent (FPIC) under ILO Convention No. 169 and the UN Declaration on the Rights of Indigenous Peoples (UNDRIP). The lack of consultation reinforced participants’ perceptions that state-led procedures prioritized legal formality over cultural legitimacy.

Triangulation of data across all sources thus revealed a consistent narrative: naming is inherently political. For Indigenous respondents, the choice of Koshi represented a deliberate of symbolic erasure, undermining their right to self-identification and recognition within Nepal’s federal structure. In contrast, Indigenous toponyms such as Kirat or Limbuwan were seen as carriers of history, spirituality, and collective memory. As one youth activist

summarized in a focus group, “To rename us without asking us is to erase us once again.”

In general, this theme illustrates that the controversy over the name Koshi extends beyond semantics. It reflects a struggle over whole histories are legitimized in the public sphere and whose voices are silenced in the processes of state formation. The act of naming, as interpreted through Indigenous perspectives, becomes both marker of exclusion and a site of resistance – linking cultural recognition to political self-determination.

## **2. Collective Memory and Historical Continuities**

Data from interviews, focus group discussions, and participatory observations revealed that Indigenous participants framed the “No Koshi” movement as an isolated reaction to provincial renaming, but as part of a long continuum of historical struggles against dispossession and cultural marginalization.

Elders and community leaders frequently recalled earlier events as the dismantling of the Kipat (communal land tenure) system, land alienation during the Rana regime, and discriminatory policies during the Panchayat era. These collective memories were narrated as precedents to the present act of exclusion symbolized by the name Koshi. One Kirat elder stated in an interview, “*When they removed Kipat, we lost our land. Now with ‘Koshi,’ they are taking even our name. Both are the story of loss.*”

Focus group discussions in Dhankuta and Dharan reinforced this statement. Participants described the No Koshi protest as a “*revival of unfinished history*,” connecting present grievances with ancestral resistance movements such as the Limbuwan movement and the Kirat Federation’s campaigns for autonomy. Youth participants also emphasized that the intergenerational transmission of these memories – through oral histories, folktales, and local rituals – has preserved a sense of continuity that sustains contemporary mobilization.

Participant observation during protest events revealed how historical memory was symbolically invoked in public spaces. Demonstrators displayed portraits of Indigenous ancestors and carried placards; dances performed during rallies served as embodied acts of remembrance. These performances fused political protest with cultural continuity, asserting that the denial of Indigenous naming rights is inseparable from the long history of territorial and cultural erasure.

Secondary data supported these interpretations. Reports by DRCN (2023) and scholarly analyses by Hangen (2010) and Lawoti & Hangen (2013) have documented how Indigenous struggles in eastern Nepal are rooted in memory and land-based identity. Triangulation of interview narratives with such sources confirmed that collective memory operates as both a repository of historical consciousness and a mobilizing resource for present resistance.

In essence, this theme shows that Indigenous opposition to Koshi is not merely reactive; it is historically grounded and culturally continuous. The act of recalling and reinterpreting past injustices reinforces the moral legitimacy of the movement, transforming remembrance into a political tool of decolonial resistance.

## **3. Consent, Exclusion, and Procedural Legitimacy**

This theme centers on participants’ perceptions that the provincial naming process lacked



genuine consultation and thereby failed to meet standards of Free, Prior, and Informed Consent (FPIC). Interviews and group discussions consistently revealed a deep sense of exclusion from the state’s decision-making mechanisms.

Although the two-third majority vote in the Provincial Assembly met constitutional requirements under Article 295 (2) of Nepal’s 2015 Constitution, most respondents questioned the democratic legitimacy of the process. A Sunwar youth activist remarked “They say it was legal, but who did they ask? We were never consulted. Without our voice, this democracy does not belong to us.” Such statements reflect a shared sentiment that compliance cannot substitute for participatory legitimacy.

Focus group participants emphasized that true recognition requires decision-making that is consultative, inclusive, and reflective of Indigenous worldviews. Women and youth participants in Biratnagar expressed frustration that their communities were merely “informed after the fact,” highlighting how consultation was reduced to tokenism. They contrasted this with international framework under ILO Convention No. 169 and UNDRIP (UN, 2007), both of which Nepal has endorsed but inadequately implemented.

Observation during protest gatherings further illustrated this perception of exclusion. Slogans such as “No Decision Without Us” and “FPIC and Our Rights” were common across protest sites. Activists repeatedly invoked the concept of “legitimacy with consent,” highlighting their demand for participatory governance.

Secondary sources confirmed these findings. Policy briefs by LAHURNIP (2023) and IWGIA (2024) reported that Indigenous communities were not meaningfully consulted before the provincial assembly’s decision, directly contravening the FPIC principle. The convergence of these multiple data sources – interviews, FGDs, observations, and documentary evidence – demonstrates that Indigenous dissatisfaction stems less from the legal naming outcome itself and more from the process through which it was reached.

In essence, this theme highlights a critical tension between constitutional procedure and Indigenous legitimacy. While the state upheld formal democratic norms, Indigenous peoples perceived the outcomes as undemocratic because it excluded their participation. The analysis reveals that for these communities, legitimacy is not derived from parliamentary arithmetic but from reciprocal consultation, cultural respect, and acknowledgement of their right to self-determination.

#### **4. Protest as Voice and Visibility**

Evidence gathered through semi-structured interviews, focus group discussions, participatory observations, and secondary data revealed that the “No Koshi” movement functioned not only as political resistance but also as a performative and symbolic expression of Indigenous identity and collective visibility.

Participants consistently described the protests as a vital means to “*speak when ignored*.” Interviews with youth activists and community leaders emphasized that the streets had become their “*only parliament*,” where they could express grievances that formal institutions had failed to acknowledge. A young participant from Dharan remarked, “*They did not*

*hear us in the Assembly, so we made them hear us in the streets.”*

Observational data from rallies in Dharan, Biratnagar, and Dhankuta further demonstrated that these protests were deeply cultural in form and meaning. Demonstrators wore traditional attire, carried chhyamsing (bamboo drums) and selinge (bells), and waved multi-colored Kirat, Limbuwan, and Janajati flags. Protesters performed Indigenous rituals and chants invoking ancestral spirits, transforming public spaces into arenas of cultural affirmation. Such performative actions turned protest sites into embodiments of what Wu and Young (2022) describe as “decolonial place-making” - reclaiming symbolic and physical spaces through Indigenous expression.

Focus group discussions revealed that participants viewed these performative elements as essential to asserting their visibility in a state system that has historically rendered Indigenous identities invisible. One FGD participant stated, “Our attire, our songs, our banners-they are not decoration; they are declaration.” The integration of cultural expression into political protest blurred the line between activism and ritual, embodying the Indigenous epistemology that politics and culture are inseparable.

Secondary documents, including reports from DRCN (2023) and Setopati (2023), corroborated these findings, noting that visual symbols such as the crossed-out “Koshi” banners and hashtags like #NoKoshi played a significant role in amplifying the movement’s visibility both locally and digitally. Digital media became a supplementary arena of protest, allowing Indigenous youth to connect across geographical boundaries and sustain collective momentum through online advocacy.

This theme thus demonstrates that the “No Koshi” movement transcended traditional forms of political mobilization. It combined cultural performance, spiritual invocation, and digital activism to articulate Indigenous presence and agency in public discourse. Protest, therefore, became not only a reaction to exclusion but also a creative act of reclaiming visibility, voice, and dignity within Nepal’s contested federal landscape.

## **5. Divergent Intra-Indigenous Perspectives**

The theme revealed that while Indigenous participants were united in their rejection of the name “Koshi,” they expressed differing preferences regarding alternative provincial names and representational strategies.

Interviews highlighted two major tendencies within the movement. The first group, comprising mostly leaders from Kirat federations and linguistic activists, supported the name “Kirat Province,” arguing that it would encompass the shared historical and cultural identity of various Kirati subgroups, including Yakthung (Limbu), Rungku (Rai/Dewan), Yakkha, and Kõits (Sunwar). They described “Kirat” as a unifying civilizational term that symbolizes ancestral continuity and collective belonging.

The second group, consisting primarily of Limbu intellectuals and activists, preferred the name “Limbuwan,” emphasizing its historical association with the Limbu homeland and its relevance to precolonial territorial boundaries. One participant asserted, “Kirat is our larger civilization, but Limbuwan is our home. It reminds us where we come from.”

Focus group discussions further revealed nuanced debates within these positions. Some participants advocated for inclusive naming that would acknowledge multi-ethnic coexistence in the region, while others insisted that historical names should take precedence as a corrective to centuries of erasure. A Tamang participant in Biratnagar expressed support for Indigenous naming but noted, “Whether it is Kirat or Limbuwan, the main issue is that our name should not be decided by others.”

Despite these internal variations, the thematic pattern revealed a strong overarching consensus: the rejection of “Koshi” as an imposed and culturally disconnected name. Observational data from joint rallies confirmed that, regardless of their preferred alternatives, diverse Indigenous groups marched together under the common banner of #NoKoshi. This unity amid difference illustrated what Tamang (2015) describes as “coalitional Indigeneity,” where multiple Indigenous identities converge around shared principles of recognition and self-determination.

Secondary analyses, including DRCN (2023) and IWGIA (2024), validated this finding by noting that intra-Indigenous diversity has not weakened the movement but rather enriched its representational legitimacy. The co-existence of differing views-Kirat, Limbuwan, Kōitswan-demonstrates the plural and dialogical nature of Indigenous politics in Nepal’s eastern hills.

In conclusion, this theme underscores that the “No Koshi” movement is both unified and diverse. While participants differ in preferred symbols and narratives, they collectively resist the homogenizing tendencies of the state. This pluralism within unity exemplifies a mature Indigenous consciousness-one that values diversity as strength and positions internal dialogue as a vital part of the struggle for recognition and equitable federalism.

## ***6. Toward Inclusive Federalism (Transitional Theme)***

Data drawn from semi-structured interviews, focus group discussions, participatory observations, and secondary sources revealed that Indigenous participants viewed the “No Koshi” movement as not only a contestation over naming, but also a broader political project envisioning a more inclusive, participatory, and just federal system in Nepal.

Across all data sets, participants emphasized that the struggle for recognition through naming was symbolic of larger structural concerns related to representation, resource distribution, and cultural autonomy. An Indigenous youth activist in Dharan summarized this connection succinctly: “Renaming is only the doorway. What we really want is a system that hears us, includes us, and respects our ways of living.” This perspective highlights how the act of naming is interpreted as both a cultural right and an entry point to institutional transformation.

Focus group discussions consistently reflected this integrative vision. Participants articulated that meaningful federalism should go beyond administrative restructuring to include mechanisms for Free, Prior, and Informed Consent (FPIC), Indigenous language recognition in provincial assemblies, and proportional representation in decision-making bodies. A women’s representative in Biratnagar explained, “If they can name our province without asking us, they can also make policies without us. Inclusion means participation from the

start, not after decisions are made.” This reflects a demand for procedural fairness as well as substantive justice.

Observations from protest sites further supported this interpretation. Demonstrations often carried banners not only rejecting “Koshi” but also calling for systemic reforms, such as “Federalism with Inclusion” and “Respect FPIC, Respect Constitution.” These public expressions signified that participants viewed the “No Koshi” struggle as part of a continuing effort to democratize Nepal’s post-conflict federal architecture and to align governance with the principles of multiculturalism enshrined in the Constitution.

Secondary data complemented these grassroots perspectives. Reports from DRCN (2023) and IWGIA (2024) similarly documented that Indigenous activists perceive the naming conflict as symptomatic of broader governance failures—particularly the gap between constitutional commitments to inclusion and their limited implementation in practice. These findings collectively underscore that the movement seeks not only the symbolic restoration of Indigenous names but also the substantive realization of participatory rights within the federal framework.

Overall, this theme bridges the analytical focus of the Results with the conceptual implications of the Discussion. It demonstrates that Indigenous participants interpret the “No Koshi” movement as both a protest against erasure and a vision for reform. Their narratives reveal a forward-looking aspiration: a form of inclusive federalism grounded in cultural recognition, equitable representation, and reciprocal consultation.

As the following Discussion section elaborates, these findings suggest that naming disputes in Nepal are not isolated identity conflicts but are deeply embedded in questions of democratic legitimacy, decolonization, and the pursuit of an inclusive state that acknowledges the plural sovereignties of its Indigenous peoples.

## Discussion

The findings of this study substantiate and deepen existing scholarship on Indigenous rights, critical toponymy, and Nepal’s post-conflict federal restructuring. Through six interrelated themes, the results demonstrate that the “No Koshi” movement is more than a symbolic resistance to an imposed provincial name—it is a decolonial struggle for recognition, memory, and participatory federalism.

The first theme, Naming as Recognition and Erasure, aligns with critical toponymic scholarship asserting that naming is a political act that legitimizes certain histories while marginalizing others (Rose-Redwood et al., 2010; Giraut & Houssay-Holzschuch, 2022). Participants’ characterization of “Koshi” as an imposed, ahistorical label echoes global findings that colonial or elite toponyms function as tools of symbolic domination (Azaryahu & Kook, 2002; Wanjiru-Mwita & Giraut, 2020). Their advocacy for Indigenous names such as Kirat and Limbuwan parallels Subba’s (2025) and Gautam et al.’s (2025) documentation of Kirati toponyms as repositories of ancestral geography and cultural continuity.

The theme of Collective Memory and Historical Continuities reinforces Hangen’s (2010)

and Lawoti and Hangen’s (2013) argument that Indigenous movements in eastern Nepal are grounded in historical struggles over land, language, and autonomy. Participants’ recollection of the loss of Kipat land tenure and other historical injustices situates the “No Koshi” protest within a continuum of resistance rather than a singular event. These lived memories function as what Tamang (2015) calls “historical consciousness,” where remembrance becomes a tool of decolonial resistance and moral legitimacy.

Similarly, Consent, Exclusion, and Procedural Legitimacy expands on Barelli’s (2012) and ILO (1989) discussions of Free, Prior, and Informed Consent (FPIC) by illustrating how legal compliance without consultation perpetuates exclusion. While the two-thirds vote in the Provincial Assembly satisfied constitutional formality (Government of Nepal, 2015), respondents emphasized that procedural legality failed to ensure participatory legitimacy, echoing DRCN’s (2023) critique of Nepal’s federalism as “procedural without inclusion.”

The theme of Protest as Voice and Visibility resonates with Wu and Young’s (2022) notion of “decolonial place-making.” Observations of Indigenous attire, flags, and chants show how public protest became a performative assertion of identity and visibility. This supports Alfred and Cornthassel’s (2005) view that Indigenous resurgence is both political and cultural renewal.

At the same time, Divergent Intra-Indigenous Perspectives affirm that Indigenous movements are plural yet cohesive. As noted by Tamang (2015) and Lawoti and Hangen (2013), internal diversity—such as preferences for Kirat, Limbuwan, or Kōitswan—does not fragment Indigenous politics but strengthens its democratic inclusivity.

Finally, the transitional theme Toward Inclusive Federalism reflects emerging debates on participatory governance and plural sovereignty (Karki & Wenner, 2020; Smith, 2012). Participants’ calls for FPIC-based decision-making, language recognition, and proportional representation align with IWGIA’s (2024) argument that genuine inclusion in Nepal requires institutional reform beyond symbolic gestures.

Overall, the results validate and extend the literature by grounding theoretical concepts of recognition, memory, and decolonization in the lived experiences of Nepal’s Indigenous peoples. The “No Koshi” movement, as revealed through these themes, transforms the politics of naming into a broader call for inclusive, dialogic, and participatory federalism.

## Conclusion

This study set out to examine how Indigenous communities in eastern Nepal interpret and respond to the renaming of Province No. 1 as Koshi Province, with particular focus on issues of recognition, legitimacy, and inclusion within Nepal’s federal system. Using data collected from semi-structured interviews, focus group discussions, participatory observations, and secondary sources, the study aimed to explore how the politics of naming reflects broader struggles over identity, history, and representation among Indigenous peoples.

The findings revealed six interrelated themes—Naming as Recognition and Erasure, Collective Memory and Historical Continuities, Consent, Exclusion, and Procedural Legitimacy,

Protest as Voice and Visibility, Divergent Intra-Indigenous Perspectives, and Toward Inclusive Federalism. Collectively, these results show that naming is not merely an administrative process but a deeply political and cultural act. Indigenous participants viewed the name “Koshi” as a continuation of historical erasure, while protests and collective memory served as tools of resistance and self-affirmation. Moreover, the study found that the absence of genuine consultation violated the principles of Free, Prior, and Informed Consent (FPIC), weakening the legitimacy of the naming process in the eyes of Indigenous communities.

Interpreting these findings within the frameworks of critical toponymy (Rose-Redwood et al., 2010) and decolonial theory (Alfred & Corntassel, 2005), the study supports the argument that Indigenous struggles for recognition are simultaneously cultural and political. The “No Koshi” movement embodies a demand for participatory federalism rooted in historical consciousness and inclusive governance, reinforcing earlier scholarship on identity, memory, and representation in Nepal (Hangen, 2010; Tamang, 2015).

The implications of these findings are both practical and theoretical. They call for institutional reforms that ensure Indigenous participation in decision-making, promote linguistic and cultural recognition, and strengthen procedural fairness in federal governance.

However, the study’s scope was limited to selected districts and participants, which may restrict the generalizability of its conclusions. Future research should incorporate broader regional perspectives and comparative studies across provinces.

In conclusion, this study contributes to the growing body of scholarship on Indigenous rights and federal restructuring in Nepal. By situating the politics of naming within the broader struggle for inclusive federalism, it underscores the enduring importance of recognition, dialogue, and participation in building a truly pluralistic nation.

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# Factors Contributing to Undergraduate Students' Underperformance in Terminal Exams: Evidence from United College

Dr. Binod Lingden<sup>1\*</sup>, Animon Rapacha<sup>2</sup>, Rabu Ranjit<sup>3</sup>

<sup>1</sup> Research Coordinator, United College, Tribhuvan University, Lalitpur, Nepal

<sup>2</sup> BBM Student, United College, Tribhuvan University, Lalitpur, Nepal

<sup>3</sup> Faculty Member, United College, Tribhuvan University, Lalitpur, Nepal

\*Corresponding Author<sup>1</sup> Email: binodlingden@united.edu.np

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## Abstract

*This study examines the factors contributing to undergraduate students' underperformance in terminal exams at United College, Lalitpur, Nepal, despite their success in board exams. Using a mixed-method approach, this study surveyed 228 students (76 each from BBM, BCA, and BBS programs) and interviewed 20 underperforming students from United College, Lalitpur, Nepal. Data analysis was done using correlation, regression, and thematic analysis. This study found that career misalignment i.e. students studying subjects that don't match their interest ( $\beta = 0.130$ ,  $*p^* = 0.043$ ), social adjustment difficulties ( $\beta = 0.176$ ,  $*p^* = 0.012$ ), and personal issues ( $\beta = 0.125$ ,  $*p^* = 0.042$ ) were the main reasons for low exam scores, while academic factors ( $\beta = -0.014$ ,  $p = 0.830$ ) and external factors ( $\beta = -0.057$ ,  $p = 0.378$ ) showed negligible impact. To address these issues, the study recommends career guidance, mental health support, and peer mentoring programs to improve motivation, social connections, and academic resilience. The findings highlight the need for colleges to focus not just on academics but also on personal and social factors affecting students' exam performance.*

**Keywords:** Career factors, Personal factors, Social-adjustment factors, Mixed-method research, Terminal exam, Underperformance

## Introduction

Strong academic performance not only opens doors to better career opportunities but also fosters students' confidence and motivation for future success. However, educational institutions around the world still face a common question: why do many students do well in board/final exams but struggle with terminal exams? (Yorke, 2001). This gap between board and terminal/

routine exam performance reveals a crucial insight – exam scores depend on more than just intelligence or effort (Biggs & Tang, 2011). When the same students excel in board exams but falter in others, it suggests deeper factors are at play: how exams are designed, how students prioritize them, and what competing demands they're balancing. Understanding these hidden influences could help educators support students more effectively throughout their academic journey, not just during make-or-break board exams.

At United College, a curious academic pattern appears every year. Business (BBM/BBs) and computer (BCA) students score well in board exams but underperform on terminal exams. These internal exams, meant to track progress, instead reveal a gap between what students can do and what they actually achieve. Research shows students naturally prioritize high-stakes finals over routine term exams (Zimmerman, 2002). However, the reasons go deeper than simple priorities – many juggle classes with jobs and family duties, leaving energy for proper preparation.

This issue continues to escalate because the design of terminal exams creates additional challenges. Students often cover excessive material in limited time, forcing memorization over true understanding (Entwistle & Ramsden, 2015). When these exams count for just certain internal marks, students reasonably minimize effort (Kuh et al., 2008). The result is surface-level learning that disappears after test day – a lose-lose situation for both students and educators.

Beyond academics, college life brings non-academic challenges that disproportionately impact terminal exams. Students adjusting to new environments (especially those living away from home) face unique stresses (Tinto, 1993). Financial pressures and family responsibilities constantly compete for attention (Astin, 1999). Some realize too late they've chosen mismatched majors, draining motivation (Lent et al, 1994). Others battle exam anxiety that clouds performance when it matters most (Bandura, 1997). These personal factors explain why the same students excel on board but struggle in the terminal exam.

Researchers claimed five interconnected performance barriers – weak academic habits like poor time management (Hartwig & Dunlosky, 2012); career misalignment from choosing wrong majors (Lent et al, 1994); social isolation in college environment (Astin, 1999); personal struggles with stress/confidence (Bandura, 1997); and external pressures like employment (Stinebrickner & Stinebrickner, 2003). These rarely operate along – a working student in the wrong major faces compounded disadvantages.

To address this, the study aims to identify the key factors contributing to underperformance in terminal exams among students at United College, despite their success in final board exams. By understanding these challenges, the research seeks to provide practical strategies to support students throughout the academic term. The findings are expected to help faculty members and administrative staff provide timely support, boost student confidence and engagement (Pintrich, 2003), guide the development of targeted academic programs, and enhance overall understanding of how different exam formats impact student performance.

## Literature Review

Academic performance in terminal exams doesn't just measure intelligence – it reflects how well students navigate a web of challenges. At its core, performance shows whether students meet learning goals through tests, assignments, and exams (Graham & Weiner, 1996). Terminal exams, held at each semester or interval, test both understanding and retention of course material. However, scores don't just depend on studying – teaching quality, curriculum relevance, and access to resources matter just as much (Biggs & Tang, 2011). When teaching methods align with assessment and learning goals, students engage more deeply (Biggs, 1999).

In addition to these academic elements, career confusion hits grades harder than many realize. Students with clear career goals study with purpose, while those unsure about their majors often lose motivation (Lent et al, 1994). It's not laziness – when coursework feels disconnected from future aspirations, effort naturally drops (Vansteenkiste et al., 2004). Mental health plays an equally crucial role. Anxiety and depression don't just cause emotional distress – they directly impair concentration and memory (Eisenberg et al., 2007). A student might know the material but still underperform because stress captures their ability to recall information during exams.

Social connections act as hidden grade-boosters. Students who feel they belong in college outperform those who feel isolated (Tinto, 1993). Peer support and faculty relationship reduce stress and keep students engaged (Astin, 1999). But for those balancing jobs or family care, social integration becomes a luxury. External/other factors such as financial stress, family responsibilities, and part-time work also play a role. Students juggling jobs or caregiving duties often find it difficult to manage their time effectively, which can reduce the amount of attention they give to their studies (Robotham, 2009; Choy, 2001).

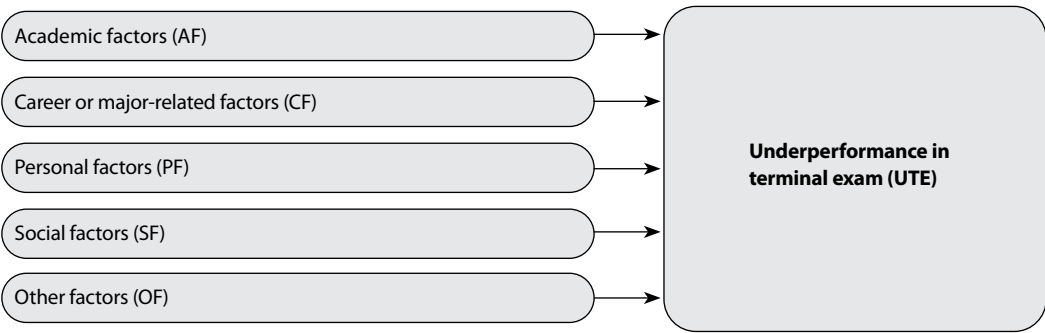
Research shows that academic underperformance is rarely caused by a single issue – instead, it's the result of multiple, interconnected barriers. Students who feel socially isolated in academic settings are more likely to struggle (Tinto, 1993). Similarly, those who doubt their ability to succeed often disengage from challenging subjects early on (Robbin et al., 2004). Peer influence also plays a key role; students surrounded by motivated classmates tend to perform better (Pascarella & Terenzini, 2005). Beyond social factors, external pressures such as part-time jobs can drastically cut into study time (Stinebrickner & Stinebrickner, 2003) or family responsibilities (Choy, 2002), while common challenges like procrastination (Steel, 2007), disengagement (Choy, 2002), and mental health struggles (Eisenberg et al., 2009) further complicates academic success. While consistent attendance and developing self-discipline can markedly improve performance (Crede et al., 2010; Richardson et al., 2012).

Despite the breadth of existing literature, there remains a significant gap in understanding why students perform poorly on terminal exams although they often score well on-board exams. This gap is also noticeable at United College, where students in programs such as BBM, BCA, and BBS tend to show this pattern. Most studies explore academic success in a general sense. The problem of terminal exam underperformance remains unexplored. The

causes are likely specific to the college’s context. The terminal exams format may be a factor. Students may also perceive these exams as less important. Furthermore, academic and personal pressures during the term can interfere with preparation. For instance, students may not study effectively due to low self-belief. They may also lack motivation if they do not see the materials’ relevance. External environmental factors play a major role. Financial difficulties can drain mental energy. Insufficient support from family or peers further exacerbates these challenges. This unexplored area calls for a deeper and more focused investigation.

To address this gap, the study employs Bandura’s (1986) Social Cognitive Theory (SCT) to investigate the factors contributing to undergraduate underperformance in terminal exams at United College. The SCT framework, which conceptualizes learning as a triadic interaction between personal, behavioral, and environmental factors (Bandura, 1997), is ideal for examining how specific determinants – academic, career-related, personal, social, and other factors – collectively predict outcomes. By applying this integrated model, this study aims to identify which factors are most responsible for exam under performance thereby elucidating their complex interactions.

**Figure 1: Conceptual framework of the study**



**Table 1: Operational definitions**

Indicators	Descriptions based on this study
Academic factors (AF)	Factors related to the teaching-learning environment, including students’ study habits, time management, perceived quality of lectures and teaching methods, curriculum clarity, and access to learning resources.
Career or major-related factors (CF)	Factors streaming from a misalignment between a student’s chosen academic program and their personal interests, skills, or long-term career aspirations, leading to a lack of motivation and engagement.
Personal factors (PF)	Internal psychological and emotional states of the student, including mental health challenges (e.g., anxiety, depression, stress), self-efficacy, confidence, and personal issues that impair concentration and exam preparation.
Social factors (SF)	Challenges related to a student’s social integration and adjustment within the college environment, including feelings of isolation, lack of a peer support network, and absence of mentorship, which affect academic focus and motivation.
Other factors (OF)	External pressures and responsibilities outside of academia that compete for a student’s time and mental energy, such as part-time employment, family caregiving duties, and financial difficulties.

### **Hypotheses of the study**

- H1. Academic factors contribute to underperformance in terminal exams.
- H2. Career and major-related factors contribute to underperformance in terminal exams.
- H3. Personal factors contribute to underperformance in terminal exams.
- H4. Social adjustment factors contribute to underperformance in terminal exams.
- H5. Other factors contribute to underperformance in terminal exams.

### **Methods and Materials**

This study adopted a mixed-method research approach to understand the factors contributing to underperformance in terminal exams at United College. For that, convergent parallel mixed-method design was adopted. This allowed both quantitative and qualitative data to be collected at the same time. The goal was to ensure a complete and balanced analysis. This approach supported thorough triangulation of findings (Creswell & Clark, 2018).

The total population included 503 undergraduate students enrolled in BBM, BBS, and BCA programs. For the population of 550, the Krejcie and Morgan (1970) table recommends a sample size of 226. This study employed a sample of 228 students, adding two extras to account for potential non-response error. To ensure equal representation, 76 students were selected from each of the BBM, BBS, and BCA programs using stratified random sampling. The sample size was determined by applying the finite population correction formula:  $n = \frac{Z^2 * p(1 - p)}{E^2}$ . The calculation used a 95% confidence level ( $Z = 1.96$ ) and a margin of error ( $E = 0.05$ ). A conservative estimated population ( $p$ ) of 0.5 was assumed for this calculation (Israel, 1992).

Quantitative data were gathered using a structured questionnaire. The questionnaire consisted of closed-ended items. These were rated on a five-point Likert scale. The scale ranged from “Strongly Disagree” to “Strongly Agree.” Items measured were academic, personal, social, career-related, and external factors impacting academic performance. The questionnaire administration used drop-off- and pick-up methods.

Qualitative data were collected through interviews. These were semi-structured in format. A total of 20 underperforming students in terminal exams were interviewed. This was done during scheduled breaks in the academic timetable. This process helped ensure high response rates and timely data retrieval.

To ensure the reliability and validity of the survey instrument, the researcher employed several established psychometric tools. Internal consistency was measured using Cronbach's alpha, with a threshold of  $\alpha \geq 0.70$  considered acceptable (Field, 2013). Content validity was established through a thorough review of literature and expert evaluation of the questionnaire items. Furthermore, construct validity was assessed using both convergent and discriminant validity criteria, guided by principles outlined in methodological literature on scale development (Braun & Clarke, 2006).

Quantitative and qualitative data were analyzed separately. Integration occurred only during the interpretation stage. Quantitative data were analyzed using descriptive statistics (frequency and percentage) to summarize the basic demographic information of respondents. While, inferential statistics such as correlation, regression, and hypothesis test were

used to analyze and test the key predictors of underperformance (Field, 2013). Qualitative data from the interview were analyzed using thematic analysis. This involved systematic coding of the transcripts. Recurrent themes were identified. These themes reflected students’ view and experiences about terminal exam performance (Braun & Clarke, 2006).

Both data sets were then integrated. This provided a complete understanding of how different factors influenced outcomes of terminal exams. These included academic, personal, social, career-related, and external factors. Ethical considerations were rigorously observed throughout the study. Informed consent was obtained from all participants after providing clear explanations regarding the voluntary nature of participation, the confidentiality of responses, and the right to withdraw at any point without any academic repercussions.

Results

Demographic information of respondents

A total of 228 undergraduate students from United College took part in the study. Most of them were female, making up 62% of the respondents. Male students made up the remaining 37.5%. This shows that more female students participated than male students. Regarding age distribution, the largest cohort consisted of 19-year-olds, representing 30.5% of the respondents, followed by those aged 22 (24%), 20 (20.5%), and 21 (19.5%). A smaller segment, 5.5%, were aged 23 and above, reflecting a predominantly younger demographic characteristic of undergraduate populations. In terms of academic programs, students enrolled in the BBM program constituted the largest group, accounting for 45.5% of the sample, followed by BCA students at 30%, and BBS students at 24.5%.

Reliability and validity test

Table 2 presented the reliability and validity metrics for the five constructs used in the study. All constructs demonstrated strong internal consistency, with Cronbach’s Alpha values exceeding the 0.70 threshold. Composite Reliability (CR) scores were also high, indicating good scale reliability. Average Variance Extracted (AVE) values were above 0.50, confirming adequate convergent validity. The diagonal values represented the square roots of AVE, which were greater than the inter-construct correlations, supporting discriminant validity. These results confirmed that the measurement model is both reliable and valid, ensuring that the construct accurately captures the intended factors influencing academic underperformance.

Table 2: Reliability and validity test

Construct	Cronbach Alpha	CR	AVE	1	2	3	4	5
Academic factors	0.733	0.861	0.621	0.788				
Course-related factors	0.847	0.898	0.679	0.512	0.824			
Personal factors	0.889	0.799	0.634	0.411	0.417	0.796		
Social factors	0.834	0.869	0.671	0.391	0.499	0.387	0.819	
Other factors	0.862	0.813	0.683	0.426	0.456	0.399	0.561	0.826

Note: Survey data 2025



### Quantitative analysis

Correlation analysis showed clear links between several predictors and underperformance in terminal exams (UTE). Career or major-related factors (CF) had a moderate positive correlation with UTE ( $r = 0.230$ ,  $p = 0.001$ ). This suggests that stress or misalignment with career goals may contribute to poor academic performance. Personal factors (PF), such as mental health issues, also showed a significant positive correlation ( $r = 0.219$ ,  $p = 0.002$ ). Social factors (SF) had a similar positive relationship ( $r = 0.237$ ,  $p = 0.001$ ), pointing to the impact of poor social adjustment. These results imply that non-academic pressures strongly affect performance. On the other hand, academic factors (AF) had a weak, non-significant correlation with UTE ( $r = 0.126$ ,  $p = 0.076$ ). External factors (EF) showed no meaningful connection ( $r = -0.27$ ,  $p = 0.703$ ).

**Table 3: Correlation between independent and dependent variables**

	Correlations					
	AF	CF	PF	SF	OF	UTE
AF	1					
CF	.378**	1				
PF	.186**	.283**	1			
SF	.346**	.239**	.186**	1		
OF	.123	.065	.037	.108	1	
UTE	.126	.230**	.219**	.237**	-.027	1

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

Note: Survey data, 2024

The regression model showed a weak-to-moderate ability to predict underperformance in terminal exams (UTE). The R-value was 0.333, suggesting only a modest link between the combined predictors and UTE. These predictors included academic factors (AF), career/major (CF), personal factors (PF), social factors (SF), and other external factors (OF). The  $R^2$  value was 0.111, meaning the model explained just 11.1% of the variation in exam underperformance in the terminal exam. The adjusted  $R^2$  dropped to 0.088, showing even lower accuracy when accounting for the number of predictors. The standard error was 0.641, which suggests a moderate level of prediction error. Among all variables, career-related, personal, and social factors were found to be significant contributors to underperformance. However, the low  $R^2$  shows that most of the variation – around 88.9% - remains unexplained. This means that many other factors likely influence exam results.

**Table 4: Model summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.333a	.111	.088	.64056

a. Predictors: (Constant), OF, PF, SF, CF, AF

b. Dependent variable: UTE

Note: Survey data, 2024

The ANOVA results show that the combined effect of academic (AF), career-related (CF), personal (PF), social (SF), and other external (OF) factors significantly predicts underperformance in terminal exams. The F-value was 4.843, with a p-value less than 0.001, confirming the model is statistically significant. Even though the overall explanatory power is low ( $R^2 = 0.111$ ), the results still show a meaningful relationship. The regression mean square was 1.987, which is much higher than the residual mean square of 0.410. This means the combined predictors have a clear impact. While the effect size is small, the significance of the model cannot be ignored. Among all variables, career-related, personal, and social factors were the more important individual predictors. These results suggest that helping students with career choices, mental health, and social adjustment could improve terminal exam performance.

**Table 5: ANOVA**

	Model	Sum of Squares	df	Mean Square	F	Sig.
1	Regression	9.937	5	1.987	4.843	.000b
	Residual	79.602	194	.410		
	Total	89.539	199			

a. Dependent Variable: UTE

b. Predictors: (Constant), OF, PF, SF, CF, AF

Note: Survey data, 2024

The regression results show that three factors clearly contribute to students' underperformance in terminal exams. Career-related issues had a significant effect (CF:  $\beta = 0.130$ ,  $p = 0.043$ ). Personal problems also mattered (PF:  $\beta = 0.125$ ,  $p = 0.042$ ). Social adjustment had the strongest impact among the three (SF:  $\beta = 0.176$ ,  $p = 0.012$ ). These results support the second, third, and fourth hypotheses. On the other hand, academic factors (AF:  $\beta = -0.014$ ,  $p = 0.830$ ) and other external factors such as family or financial stress (OF:  $\beta = -0.057$ ,  $p = 0.387$ ) didn't show any meaningful effect, so the first and fifth hypotheses were rejected. The constant value ( $\beta = 1.633$ ,  $p < 0.001$ ) shows that even without these factors, underperformance still exists. This means other reasons may also play a role. In general, non-academic issues such as career confusion, personal issues, and social struggles seem to have a more critical role than traditional academic challenges in explaining terminal exam underperformance.

**Table 6: Coefficients**

	Coefficients <sup>a</sup>					
	Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.633	.328		4.973	.000
	AF	-.014	.067	-.016	-.214	.830
	CF	.130	.064	.154	2.040	.043
	PF	.125	.061	.146	2.048	.042
	SF	.176	.070	.186	2.531	.012
	OF	-.057	.065	-.060	-.883	.378

a. Dependent Variable: UTE

Note: Survey data, 2024

### **Theme 1**

Students pointed to academic challenges as a main reason for their underperformance. They often felt overwhelmed by the sheer amount of coursework and struggled with the abstract nature of theory-heavy subjects. A common complaint was the fast pace of lectures, which often felt rushed and disconnected from real-world applications. Poor study methods were a significant issue. Students crammed right before exams, which increased their stress and hindered retention. Uncertainty about exam content also created anxiety. Without clear guidelines, they struggled to focus their preparation effectively. One student shared, *"I try to study everything at once before exams, but the material is too dense and I end up retaining nothing."* Another stated, *"Without clear guidelines on what will be tested, I waste time studying irrelevant topics."*

### **Theme 2**

Students reported a major lack of connection to their academic programs. Students felt trapped in a major that did not align with their personal interests or career aspirations. This mismatch resulted in low motivation and a clear decline in academic effort. Several students revealed they selected their program due to external pressure or limited choices, not genuine passion. Anxiety about life after graduation compounded the problem. Concerns over future employment and career uncertainty constantly distracted them from their studies. The core issue extended beyond difficult coursework; it was a deeper feeling of being on the wrong path. One participant stated, *"I can't focus on one exam when I'm constantly worrying about whether this degree will lead to a job I actually want."* Another admitted, *"I choose this major for my parents, not for me – that's why I can't bring myself to study properly."*

### **Theme 3**

Students described how social adjustment impacts their academic performance. Students felt lonely and lacked a reliable support network. The transition to college life was difficult, especially without forming strong friendships. This isolation reduced their motivation and made academic stress harder to manage. Facing coursework and exams alone felt more challenging. Those struggling socially often felt detached from both their peers and the learning environment. This disconnection eroded their confidence and hindered engagement. One student noted, *"Eating alone in the cafeteria every day makes me feel invisible."* Another shared, *"When I struggle with coursework, I have no one to turn to for help."*

### **Theme 4**

Students identified personal challenges as major barriers to their success. They reported struggling with anxiety, depression, and high stress. These issues made it difficult to concentrate, remember information or maintain motivation. Mental health challenges frequently led to rushed studying and poor exam results. A harmful cycle often developed. Poor mental health led to procrastination, which then increased stress as deadlines approached. This made academic success even harder to achieve. One student explained, *"My anxiety makes it*

*impossible to focus during exams – I blank out no matter how much I’ve studied.”* Another stated, *“I keep delaying studying until it’s too late, then panic the night before.”*

### **Theme 5**

Students reported that external duties greatly hindered their academic success. Many balanced their part-time jobs with their studies. Financial needs forced some to prioritize work over attending classes or studying. Others managed significant household chores, which left them too tired to focus on coursework. These outside responsibilities disrupted consistent study habits. Students felt pulled between their education and real-world demands. This conflict resulted in increased stress, missed assignments, and inadequate exam preparation. For many, the challenges were about survival, not just grades. Juggling multiple roles drained their time and energy. One student stated, *“Working 30 hours weekly means I’m always behind on coursework.”* Another shared, *“Caring for my younger siblings leaves me no quiet time to study at home.”*

**Data integration** – The quantitative data found academic factors were not a significant predictor of underperformance in the terminal exam ( $\beta = -0.014$ ,  $p = 0.830$ ). However, the students' interview told a different story. They consistently described feeling overwhelmed by heavy workloads and complex theory. Many struggled with fast-paced lectures and unclear expectations. This suggests that academic difficulties, while not directly linked to poor exam results in the numbers, may still contribute indirectly. This issue could combine with other problems such as poor time management or mental health challenges to affect performance. The students' experiences highlight the need for better teaching approaches and more academic support services to help manage their studies more effectively.

Career-related factors (CF) clearly showed up as a strong predictor of students' underperformance, both in the numbers and in their own words. Statistically, CF had a moderate positive correlation with poor exam results ( $r = 0.230$ ,  $p = 0.001$ ) and a significant regression coefficient ( $\beta = 0.130$ ,  $p = 0.043$ ). Many students shared feelings of frustration with their chosen majors and worries about future prospects. This dissatisfaction made them choose majors and worries about future job prospects. This dissatisfaction made them less motivated and less engaged in their studies, which impacted their terminal exam performance.

Social factors (SF) were another key influence. The data showed a significant link to performance ( $r = 0.237$ ,  $p = 0.001$ ;  $\beta = 0.176$ ,  $p = 0.012$ ). Students described feeling lonely, lacking friendship, and missing mentorship, which damaged their emotional health and academic focus. They responded being socially isolated made it hard to stay motivated or reach out for support. The strong match between qualitative and quantitative data highlights the need to build more welcoming and supportive college communities, where students feel connected and resilient.

Personal factors (PF) such as anxiety, depression, and poor time management also played a significant role ( $r = 0.219$ ,  $p = 0.002$ ;  $\beta = 0.125$ ,  $p = 0.042$ ). Students responded openly about how mental health struggles and procrastination interfered with their ability

to prepare well for exams. Last minute cramming and anxiety on exam day were common themes, showing how emotional distress can seriously damage performance. These findings suggest that offering mental health support and teaching better time management could really help students improve.

On the other hand, other external factors (OF), such as part-time work or family caregiving, didn't show a significant impact in the underperformance ( $r = -0.027$ ,  $p = 0.703$ ;  $\beta = -0.057$ ,  $p = 0.378$ ). Still, responses of students painted a different picture. For some, juggling jobs or family duties made it difficult to focus on college or study. While these pressures might not affect enough students to show up statistically, they deeply affect those who experience them. This difference shows that qualitative methods are useful for uncovering subtle reasons that affect students' performance.

## Discussion

The findings of this study both support and refine the existing literature on factors contributing to underperformance in terminal exams among undergraduate students. Prior work has focused on academic, personal, and contextual factors. Yet the findings show that non-academic challenges - like lack of career clarity, social disconnection, and mental health struggles - often play a larger role. This insight forces us to rethink the assumption that academic issues are the main culprits. Instead, exam outcomes are shaped by a web of life pressures that go beyond the classroom.

First, career-related factors (CF) had a clear and sizable impact. The data show a moderate positive correlation with underperformance ( $r = 0.230$ ,  $p = 0.001$ ) and a statistically significant regression coefficient ( $\beta = 0.130$ ,  $p = 0.043$ ). Students frequently described feeling misaligned with their majors. They reported emotional disengagement when they didn't see how their studies fit their future goals. These qualitative insights parallel earlier findings that academic motivation falls when coursework feels irrelevant (Lent et al., 1994). The link between motivation and the sense of future purpose is well documented (Vansteenkiste et al., 2004).

Personal factors (PF), like anxiety, depression, and poor time management, also had strong effects. This study found a significant correlation ( $r = 0.219$ ,  $p = 0.002$ ) and regression coefficient ( $\beta = 0.125$ ,  $p = 0.042$ ). Students spoke candidly of emotional burnout, procrastination, and the pressure of last-minute study. These accounts echo research showing how psychological stress and mental health issues disrupt concentration and lower academic performance (Eisenberg et al., 2009). The cognitive toll of anxiety and depression makes studying harder, just as models of mental load suggest. It's clear that emotional health is not optional - it's central to exam success.

Social adjustment (SF) also mattered. The statistics showed a strong correlation ( $r = 0.237$ ,  $p = 0.001$ ) and regression coefficient ( $\beta = 0.176$ ,  $p = 0.012$ ). Many students responded that feeling isolated or lacking peer support hurt both their motivation and their academic performance. This matches the broader literature that a sense of belonging is vital for per-

sistence in college (Tinto, 1993; Pascarella & Terenzini, 2005). A supportive peer network can offer both emotional comfort and practical study assistance. Without that, students feel adrift and underperform.

Unexpectedly, academic factors (AF) - like teaching quality, curriculum clarity, and learning resources - showed virtually no statistical effect ( $\beta = -0.014$ ,  $p = 0.830$ ;  $r = 0.126$ ,  $p = 0.076$ ). Students did mention fast-paced lectures and vague exam formats. But these concerns didn't predict poor outcomes in the data. Perhaps these issues are widespread and affect many students, not just those who underperform. Or maybe academic frustrations matter only when paired with emotional or motivational challenges. This finding challenges the common emphasis on instructional design as the key to learning, and suggests a more nuanced view is needed (Biggs & Tang, 2007).

External factors (OF), such as holding jobs or caregiving, also did not show significance in the quantitative model ( $\beta = -0.057$ ,  $p = 0.378$ ;  $r = -0.027$ ,  $p = 0.703$ ). Yet students' stories revealed serious burdens when juggling outside responsibilities. These pressures may not register as direct predictors in surveys, but they clearly impose time and energy constraints. This suggests external factors may operate indirectly—by affecting mental health or limiting study time—making them harder to detect in standard models (Choy, 2001; Stinebrickner & Stinebrickner, 2003).

Taken together, the results lead to an important insight: terminal exam underperformance cannot be explained by academic difficulties alone. Personal well-being, clarity about one's path, and social integration appear to matter more. That aligns with broader findings that non-cognitive traits - like self-regulation and personality - often predict academic outcomes better than educational structure (Richardson et al., 2012). Furthermore, the modest  $R^2$  value (0.111) shows that many different and connected factors influence performance. There is no one-size-fits-all answer.

Reflecting on these findings, colleges need to adopt holistic strategies. Career support, mental health resources, and social engagement opportunities should be integrated into academic support services. For instance, career counseling could boost engagement by helping students align their studies with their aspirations. Counseling services should offer accessible mental health care and time-management training. Peer mentorship programs can reduce isolation and strengthen belonging. Future research should continue blending numbers with narratives to capture the full experience of students.

## Conclusion

This study demonstrates that underperformance in terminal exams of undergraduates represent a complex challenge. Non-academic factors particularly influence outcomes. Career uncertainty, social difficulties, and mental health issues emerge as significant predictors. These factors frequently outweigh purely academic considerations.

Grounded on Social Cognitive Theory (SCT), this study employed a mixed-methods research approach at United College. Quantitative data collection utilized structured ques-

tionnaires measuring academic, career-related, social personal, and other factors. These were analyzed using correlations and regressions. Qualitative data were obtained through semi-structured interviews who performed differences in their terminal and board exam scores. This helped reveal their personal experiences and feelings about their struggles.

Quantitative results revealed that career-related, social, and personal factors significantly predicted underperformance. While, academic and other factors demonstrated weaker or non-significant effects. Qualitative narratives reinforced these findings, illustrating how career dissatisfaction, social isolation, and mental health struggles hindered exam preparation and motivation. Although academic challenges were noted, their impact appeared mediated through other variables.

To address underperformance in terminal exams, institutional responses should develop comprehensive support programs. Effective strategies must extend beyond academic assistance. Career counselling services address directional uncertainty. Mental health support mitigates psychological barriers. Social inclusion initiatives combat isolation. Practical skill development enhances time management and stress reduction capabilities. These combined interventions create supportive environments targeting root causes. Such holistic approaches ultimately foster improved academic performance and student well-being.

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### ***Authors' contribution statement***

Dr. Binod Lingden wrote the article. Ms. Animon Rapacha collected the data. Rabu Ranjit developed the outlines and reviewed the final draft.

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### ***Declaration of conflicting interest***

Authors declare no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

## Appendix 1: Plagiarism and AI detection test report

Binod Lingden

Factors Contributing to Undergraduate Students' Underperformance in Terminal Exams.doc

Tribhuvan University

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# Factors influencing Students' Preferences for Colleges Affiliated with Foreign Universities Compared to Nepalese Universities

*Mahesh Aryal Chhetri<sup>1\*</sup>, Rojina Ranjitkar<sup>2</sup>, Supriya Shrestha<sup>3</sup>, Manuska Upreti<sup>4</sup>, Nirajan Joshi<sup>5</sup>*

- <sup>1</sup> Graduate Program Director, United College, Tribhuvan University, Lalitpur, Nepal  
<sup>2</sup> Faculty Member, United College, Tribhuvan University, Lalitpur, Nepal  
<sup>3</sup> MBS Student, United College, Tribhuvan University, Lalitpur, Nepal  
<sup>4</sup> BBM Student, United College, Tribhuvan University, Lalitpur, Nepal  
<sup>5</sup> BBS Student, United College, Tribhuvan University, Lalitpur, Nepal

\*Corresponding Author<sup>1</sup> Email: mahesharyal@united.edu.np

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## Abstract

*This study examines factors influencing Nepalese students' preferences for Colleges affiliated with foreign universities compared to Nepalese universities. Using a qualitative phenomenological approach, 27 students from foreign universities affiliated colleges in Lalitpur district were interviewed to explore their motivations and experiences. Findings reveal that students prioritize colleges affiliated to foreign universities over national universities due to their internationally recognized degrees, rigorous curricula, and faculty expertise, alongside access to global internships and alumni networks. In contrast, national universities are criticized for outdated infrastructure, limited resources, and weak industry linkages. While cost remains a consideration, scholarships and family support enable students to justify higher tuition fees for long-term career benefits. This study recommends that Nepalese universities modernize curricula, strengthen industry partnerships, and improve student services to remain competitive.*

**Keywords:** *Higher education, Student preferences, Foreign-affiliated colleges, National universities, International exposure, Academic quality*

## Introduction

The choice of where to study is one of the most important decisions a young person can make. In Nepal, this decision is increasingly clear for many. Students are actively choosing colleges affiliated with foreign universities over Nepalese universities. This is not a random trend. It is a direct response to the different qualities of education on offer (Khadka, 2022). Foreign-affiliated colleges are seen as a gateway. They provide a globally recognized qualification without always requiring

students to leave home. This is a powerful draw. In today's competitive world, a degree with international value is a strong currency (Chhetri, 2023). It signals to employers that a graduate has met certain global standards.

The teaching and learning environment are major factors. These colleges often use modern teaching methods. They focus on practical application, case studies, and student participation. Rote memorization is less common. The goal is to develop critical thinking and problem-solving skills (Sapkota, 2020). This is what modern workplaces demand.

Furthermore, the curriculum is frequently updated. It is often designed in partnership with international industry experts. This means students learn current, relevant knowledge and skills. They are not studying outdated material from old textbooks. This alignment with global industry needs is a huge advantage. The physical environment also matters. Foreign-affiliated colleges often have better infrastructure. This includes well-equipped labs, modern libraries with digital resources, and reliable internet access. These facilities create a more effective and engaging learning experience. They are simply more conducive to learning.

In contrast, national universities face significant challenges. Students and parents often perceive them as outdated. Common complaints include old curricula, overcrowded classrooms, and insufficient resources. Bureaucratic delays and frequent strikes disrupt the academic calendar. This creates uncertainty and frustration (Rai, 2021). Many feel these institutions are not preparing them for the modern economy.

The faculty is another point of comparison. Foreign-affiliated colleges often bring in international lecturers. They also invest in training their local faculty. This exposure to different teaching styles and global perspectives enriches the learning experience. It is less common in the traditional university system (Joshi, 2024).

There is, of course, an economic aspect. Foreign-affiliated programs are more expensive. But for many families, this is seen as a worthwhile investment. They are paying for better quality, better opportunities, and a more secure future. The high demand shows that many believe the return on investment is justified (Sharma & Bhandari, 2021).

This trend has serious implications for Nepal. It risks creating a two-tier education system. One tier is for those who can afford a global education. The other is for those who cannot. This could increase social inequality. It also represents a form of brain drain within the country's own borders (Yadav, 2022). The nation's top talent is siphoned away from its national institutions.

Ultimately, the student shift is a market response. It is a clear signal that national universities are not meeting student expectations. Students are voting with their feet. They are choosing institutions that offer global recognition, modern skills, and a clear path to a career. For Nepal's higher education system, this is a critical wake-up call.

This study aims to investigate the precise factors driving student preference for colleges with foreign-affiliated universities over national universities in Nepal. Findings of the study will be synthesized into a set of actionable recommendations for educators. These evidence-based insights are intended to provide a clear roadmap for reform. The ultimate goal is to provide a framework for national universities to bridge the competitive gap, retain do-

mestic talent, and better align their offerings with the aspirations of Nepalese youth and the demands of the global economy.

## Literature review

National universities traditionally serve as the foundation of higher education systems, providing accessible education and fostering national identity. However, in many nations, they often face challenges related to outdated infrastructure and bureaucratic inefficiencies (Altbach & Knight, 2007). In response, colleges affiliated with foreign universities have emerged, offering internationally recognized degrees and curricula aligned with global standards without requiring students to study abroad (Wilkins & Huisman, 2012; Healey, 2015). Key factors influencing student preference for these institutions include perceptions of superior academic quality, enhanced career opportunities, international exposure, and stronger industry connections, which are often perceived as lacking in national universities (Mazzarol & Soutar, 2002; Bodycott, 2009).

Mazzarol and Soutar (2002) emphasize that perceived quality of education plays a vital role in influencing students' decisions to pursue studies abroad. They found that international institutions are frequently regarded as offering better academic rigor, exemplary faculty, and enhanced learning environments compared to national universities.

Waters (2006) explores diaspora influences, showing that migrant families disproportionately favor foreign-affiliated colleges due to perceived migration advantages. Degrees from these institutions are seen as easing visa approvals or employment abroad, whereas national university degrees may not carry the same weight internationally.

Altbach and Knight (2007) highlight that institutional reputation and global recognition significantly shape students' preferences for foreign-affiliated colleges over national universities. They argue that students associate foreign collaborations with higher academic standards, modern curricula, and greater exposure to international perspectives, making them more attractive for career advancement.

Chen (2007) highlights that scholarship availability and financial incentives significantly influence student perceptions. Many foreign-affiliated colleges provide merit-based aid and partnerships with multinational corporations, making them more appealing despite higher tuition fees than national universities.

Yang (2008) points out that cultural exposure and global networking opportunities make foreign-affiliated colleges more appealing. Students believe that studying in such environments enhances their intercultural competence, language skills, and adaptability—qualities highly valued in today's globalized workforce.

Bodycott (2009) highlights that improved career prospects are a significant motivation for students choosing foreign universities. The study reveals that graduates from international institutions often experience better job placement rates and higher starting salaries, attributed to the global exposure and networking opportunities during their studies. This factor is critical in swaying students toward foreign universities in pursuit of enhanced professional opportunities.

Agarwal (2009) identifies a critical advantage for foreign colleges: strong industry links. These institutions maintain close ties with the global job market. Their curricula are frequently updated to reflect current trends. This focus provides students with practical, specialized skills. National universities often lack this responsiveness. Bureaucratic processes slow their adaptation to change.

Lim (2010) directly compares the student experience. Foreign-affiliated colleges consistently achieve higher satisfaction scores. This is due to superior campus facilities and digital resources. Their student support services are also more robust. National universities face different challenges. Overcrowding and chronic underfunding are common problems. These issues directly create negative perceptions among students.

Brooks and Waters (2011) examine the power of reputation. A university's image is heavily influenced by its alumni. Successful graduates create a compelling narrative for an institution. Their achievements make the school appear attractive and effective. This positive perception drives prospective students to apply. Reputation becomes a key factor in the decision-making process.

Wilkins and Huisman (2012) focus on employability. This is a decisive factor for many students. Graduates from foreign colleges are perceived to have an edge. They are thought to access better job opportunities and higher salaries. Their professional networks are also considered stronger. This perceived return on investment justifies the choice for many.

Beine, Noël, and Ragot (2014) analyze the financial aspect. Studying abroad is a significant financial undertaking. Students carefully weigh the high costs against potential benefits. The possibility of lucrative scholarships is a major draw. The long-term financial payoff is a powerful motivator. This cost-benefit analysis strongly influences the final decision.

Perkins and Neumayer (2014) look beyond academics. The desire for cultural experience is a significant driver. Students seek personal growth through international exposure. Living in a new culture fosters adaptability and broadens perspectives. This quest for development is a key reason for choosing a foreign institution.

Wu and Garza (2014) highlight the role of language. English proficiency is a highly valued global skill. Many students specifically seek out English-taught programs. This enhances their learning and future career prospects. For non-native speakers, this availability is a major attraction. It significantly boosts a university's appeal.

Healey (2015) contrasts teaching methodologies. Foreign-linked colleges are seen as more interactive. Their approach is student-centered and focused on engagement. The education is perceived as directly relevant to industry needs. This modern teaching style is a preferred choice for many learners.

Ziguras and McBurnie (2015) discuss regulatory environments. Foreign colleges are often viewed as more transparent. Their grading and accreditation processes seem clearer and fairer. National universities can face opposite perceptions. Some are seen as having politicized administration or outdated systems. These views can deter potential applicants.

Liu (2017) identifies social influence as a key factor. Choices are rarely made in a vacu-

um. Recommendations from peers and family carry immense weight. First-hand experiences shared by others are particularly persuasive. This social validation makes international education pathways seem safer and more attractive.

Zhai (2020) emphasizes the importance of support systems. The transition to university is challenging, especially abroad. Institutions that provide robust support are more attractive. This includes orientation programs and academic guidance. The perceived level of care can sway a student's final choice.

Naidoo (2020) highlights how the post-pandemic shift has made foreign-affiliated colleges more attractive. Students now prioritize hybrid learning, international accreditation, and flexible mobility. Traditional national universities often lack these features, making them less appealing.

Hou et al. (2020) examine quality assurance mechanisms. They find that students trust foreign-affiliated colleges more. This is largely due to dual accreditation from both home and host countries. This “double validation” signals higher academic standards. National universities, with only local accreditation, are seen as less rigorous.

Lau and Lin (2021) focus on graduate outcomes. Alumni from foreign-affiliated institutions report faster career progression. The study credits this to strong alumni networks and global brand recognition. These benefits outweigh the higher cost for many students.

Sapkota (2020) explores financial considerations. Scholarships and grants play a key role in student decision-making. Foreign-affiliated colleges often offer better financial incentives, such as reduced tuition and merit-based aid. In contrast, national universities can be more expensive with fewer funding options. This makes them less attractive to cost-conscious students.

Rai (2021) finds that students often view national universities as outdated. Weak infrastructure, limited curriculum innovation, and fewer academic resources create a negative image. Foreign-affiliated programs appear more modern and progressive, attracting students who value quality and relevance.

Sharma and Bhandari (2021) emphasize perceived academic superiority. International institutions are seen to offer better standards, top-tier resources, and advanced research opportunities. These features appeal to students aiming for competitive careers. Their global reputation adds to their desirability.

Marginson (2022) introduces a geopolitical dimension. In regions with diplomatic tensions, students may avoid Western-linked colleges due to visa concerns. In such cases, national universities seem like safer, more politically stable options.

Jon et al. (2023) study online narratives. Social media often portrays foreign-affiliated colleges as “innovative” and forward-thinking. In contrast, national universities are seen as “rigid” or “traditional.” These perceptions strongly shape student attitudes, especially among younger generations.

De Wit and Altbach (2023) raise concerns about degree inflation. Employers increas-

ingly favor foreign-linked qualifications. This creates pressure on students to choose affiliation over substance. National degrees are often perceived as less valuable, regardless of actual learning outcomes.

Chhetri (2023) focuses on career preparation. Foreign-affiliated colleges offer strong industry links and global networks. These connections lead to better internships and job opportunities. Students see them as essential for long-term success in the global job market.

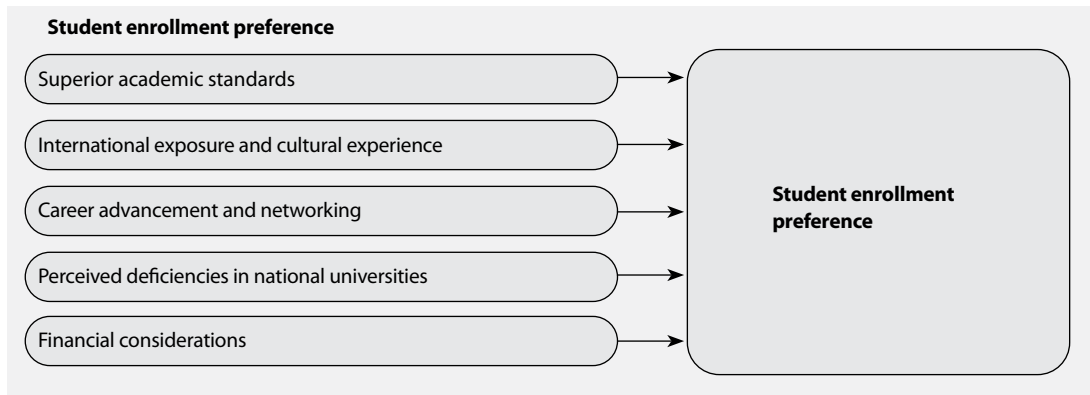
Joshi (2024) highlights the value of cultural exposure. Foreign-affiliated institutions provide international experiences and diverse learning environments. These are seen as enriching and professionally valuable. Students believe such exposure boosts employability and support personal growth.

Many studies examined at why students choose to study abroad (Mazzarol & Soutar, 2002; Altbach & Knight, 2007). But there is very little research on how students in Nepal choose between foreign-affiliated colleges and national universities within the country. A few studies talk about Nepalese students' interest in going overseas (Sharma & Bhandari, 2021; Khadka, 2022), but they don't focus on local options. This gap matters. Foreign-affiliated colleges are becoming more popular in Nepal, and they are changing how students make decisions. This study examines at why students are choosing these colleges over local universities. The conceptual framework guiding this study is grounded in an extensive empirical review of determinants that shape students' enrollment decisions. It integrates multiple dimensions identified in prior research, including perceptions of superior academic standards, access to international exposure, enhanced career advancement opportunities, and recognized deficiencies within national universities. By synthesizing these elements, the framework aims to capture the complex motivations and perceptions driving students' preferences.

**Table 1: Operational definitions of the study**

Constructs	Description based on the study
Superior academic standards	Refers to the perception that foreign universities affiliated colleges offer higher-quality education, internationally recognized degrees, experienced faculty, modern teaching methods, and updated curricula aligned with global trends.
International exposure and cultural experience	Encompasses opportunities for virtual interaction with international faculty and peers, participation in global classrooms, development of cross-cultural competencies, and access to worldwide academic and professional perspectives.
Career advancement and networking	Includes better internship placements, job opportunities, industry connections, career support services, and professional networking advantages linked to global recognition and institutional reputation.
Perceived deficiencies in national universities	Relates to student perceptions of outdated infrastructure, overcrowded classrooms, limited resources, bureaucratic inefficiencies, weak industry links, and insufficient academic or student support services.
Financial considerations	Involves the evaluation of tuition costs, availability of scholarships and financial aid, family support, and the perceived return on investment in terms of education quality and career prospects.
Student enrolment preferences	The ultimate choice to enroll in a foreign-affiliated college, resulting from the positive evaluation of its attributes such as academic quality, international exposure, career prospects, etc.



**Figure 1: Conceptual framework of the study**

## Methods and Materials

This study used a qualitative research approach. It sought to understand why Nepalese students choose foreign universities affiliated college in Nepal. A phenomenological research design was used. This helped explore students' personal experiences and decisions.

The study focused on foreign universities affiliated Colleges in Lalitpur district, Nepal. According to Ministry of Education, Science, and Technology, Nepal has 59 foreign universities affiliated Colleges (MoEST, 2022). Out of these, 9 are in Lalitpur District (MoEST, 2022). These 9 Colleges were chosen as the research sites.

The sample included 27 students (9 Colleges \* 3 students = 27 students). 3 students were selected from each of the 9 Colleges using quota sampling. This small size was enough for qualitative research. The goal was to get detailed insights, not broad generalizations. To justify, similar studies used the same approach with small sample sizes. Ghimire (2020) included 25 students from five universities. Khadka (2022) involved students from foreign-affiliated colleges. These studies showed that small groups can still provide meaningful and detailed insights.

Data was collected using semi-structured interviews. These were recorded and then written down word for word. Data was analyzed using thematic analysis to identify key patterns and themes. This method helped identify common ideas and experiences among the students. To ensure reliability, member checking was employed, allowing participants to verify their responses. Similarly, validity was strengthened through peer debriefing and member checking. The study's conceptual framework integrated factors such as academic standards, international exposure, career prospects, perceived deficiencies in national universities, and financial considerations. Ethical considerations included obtaining informed consent, ensuring confidentiality, and maintaining neutrality during interviews to uphold research integrity.

## Results

### *Demographic information of respondents*

Table 1 shows basic information about the 27 students in the study. More female students (59.26%) took part than male students (40.74%). This shows a slight gender imbalance in the sample. Most students were between 20 and 22 years old. The largest age group was 21 (33.33%), followed by 22 (29.63%) and 20 (18.52%). Only a few students were 19 or over 23. This suggests that most participants were typical university-age students in their early twenties. In terms of study programs, most students were enrolled in Business (40.74%) followed by IT (33.33%) and Art (25.93%) respectively. This distribution provided the diverse range of academic interests among the students. Of the 27 participants in the study, the majority (66.7%) were enrolled in Bachelor's degree programs.

**Table 2: Demographic information of respondents**

Title	Items	Frequency	Percentage
Gender	Male	11	40.74
	Female	16	59.26
	<b>Total</b>	<b>27</b>	<b>100</b>
Age	19	2	7.41
	20	5	18.52
	21	9	33.33
	22	8	29.63
	23 and above	3	11.11
	<b>Total</b>	<b>27</b>	<b>100</b>
Program	IT	9	33.33
	Business	11	40.74
	Arts	7	25.93
	<b>Total</b>	<b>27</b>	<b>100</b>
Level	Bachelor	18	66.7
	Master	9	33.3
	<b>Total</b>	<b>27</b>	<b>100</b>

Source: Field survey report, 2024

## Qualitative analysis

### *Theme 1*

In Nepal, students perceive foreign universities affiliated colleges offer better academic standards than colleges affiliated to national universities. These institutions are seen as more reputable because of their international recognition. The teachers often have global experience. Degrees from these Colleges are valued worldwide. Students think this helps with jobs abroad. Even in Nepal, such degrees stand out. National universities seem less appealing.

Foreign affiliated colleges feel more modern and global. Tuition fee is high, but seems as worth it. Better careers and global change matter more. Students want quality and recognition. That's why they prefer these colleges. The brand and network help too. In the end, it's about future success. One participant stated, *"Foreign-affiliated colleges are highly respected because their degrees are internationally recognized. The faculty often have international experience, which makes the education quality stand out."* Another noted, *"I chose a foreign-affiliated college for its global perspective and connections abroad, which I believe will give me a competitive job advantage."* A third shared, *"In Nepal, foreign degrees are seen as superior. Many friends from such colleges have secured good jobs locally and internationally, so I think it's worth the investment."* These responses highlight that perceived academic excellence, prestige, and global recognition are central reasons why students prefer foreign-affiliated colleges over national universities.

### **Theme 2**

For students in Nepalese foreign-affiliated colleges, international exposure through virtual connections with foreign students and faculty is a key part of their education. While most classmates are Nepalese, these virtual interactions broaden cultural awareness and help build global networks, offering advantages for future careers and further studies. Compared to national universities, foreign-affiliated colleges provide more opportunities to engage globally. One participant said, *"Though most classmates are Nepali, we interact with international students and faculty online. It's not just about a degree but gaining a wider perspective, which Nepalese universities can't offer."* Another noted, *"My college lets me connect virtually with students from abroad, opening doors to jobs, internships, and collaborations. It feels like being part of a global network."* A third shared, *"Interacting with the main campus overseas helps me develop a global mindset, which is crucial for my future. I get much more international exposure than I would at national universities."* These responses demonstrate that international exposure and global networking are key advantages motivating students to choose foreign-affiliated colleges over national universities.

### **Theme 3**

Students at foreign-affiliated colleges value career services highly. They seem them as better than in national universities. These colleges have global ties and strong reputations. This helps students find good internships. Job placement also seems more promising. Career support feels more organized and helpful. Students connect with global networks. They hear about jobs abroad more often. These links boost their confidence. Students believe they stand out in the job market. National universities don't offer the same support. That's why many prefer foreign-affiliated colleges. One participant shared, *"The career services at my foreign-affiliated college connect us with international companies for internships, something national universities don't offer. These internships build our resumes and open doors to global jobs."* Another said, *"My internships are with companies that have a global presence, which I couldn't get at a local university. This will help me when applying for jobs"*

after graduation.” A third noted, *“I chose a foreign-affiliated college for its network of international professionals. Alumni connections and virtual events with students abroad are invaluable for job opportunities.”* These responses show that career support, internships, and global networking are key reasons students prefer foreign-affiliated colleges, as these factors enhance their employability and access to international job markets.

#### **Theme 4**

Students opting for foreign-affiliated colleges often cite several shortcomings in Nepalese national universities. They point to outdated buildings and equipment. Classrooms are often overcrowded. Facilities are not well maintained. This makes learning hard and uncomfortable. There’s little access to modern tools. Students feel left behind in such settings. It hurts their motivation and focus. In contrast, foreign-affiliated colleges look more modern. They offer better spaces and resources. Students feel more supported there. The poor infrastructure in national universities is a central reason for the shift. One participant said, *“The infrastructure at national universities is outdated, with overcrowded classrooms and less-equipped libraries and labs compared to foreign-affiliated colleges.”* Another added, *“I visited a national university and was shocked by the poor maintenance. Foreign-affiliated colleges are much more modern, which influenced my choice.”* Students also point to outdated curricula that lack practical learning and global perspectives. A participant noted, *“The curriculum at national universities feels old-fashioned and doesn’t prepare us for global job markets like foreign-affiliated colleges do.”* Limited academic resources and less qualified faculty are further issues. One student mentioned, *“At national universities, it’s hard to access research materials or get academic guidance. Foreign-affiliated colleges offer better resources and more engaged faculty.”* Inadequate student support services, such as career counseling and extracurricular activities, are also criticized. A participant shared, *“There were no proper career services or counseling at my national university, unlike the comprehensive support in foreign-affiliated colleges.”* Lastly, students report faculty disengagement and administrative inefficiency, leading to low motivation and confidence. One remarked, *“Professors at national universities seem disconnected, and administration is slow, which made me lose confidence in the education quality.”* These perspectives underline that perceived deficiencies in infrastructure, curriculum, academic resources, and student support heavily influence students’ preference for foreign-affiliated colleges over national universities.

#### **Theme 5**

Students weigh both quality and cost when choosing between foreign-affiliated colleges and national universities in Nepal. Although tuition at foreign-affiliated colleges is higher, many see the investment as worthwhile due to better education quality, infrastructure, international exposure, and improved job prospects. One participant said, *“The fees are higher, but the education quality and career opportunities justify the cost.”* Another added, *“Graduates from foreign-affiliated colleges are more competitive, so despite higher fees, the degree is worth it.”* Scholarships also help reduce financial burdens. A student shared, *“Merit-based*

*scholarships made the costs more affordable and encouraged me to enroll.*" Family support plays a key role. One noted, *"My parents' financial help made attending a foreign-affiliated college possible, which I believe will benefit my future career."* While national universities are cheaper, students often feel they offer fewer opportunities. As one said, *"Though less expensive, national universities don't provide the same chances for growth and exposure."* This highlights that financial considerations—including tuition, scholarships, and family support—interact with perceptions of educational quality to shape students' preferences for foreign-affiliated colleges despite their higher costs.

## Discussion

This study supports extensive literatures that shows perceived academic quality as a major in students' educational choices (Mazzarol & Soutar, 2002; Altbach & Knight, 2007). In Nepal, this is especially clear. Students prefer foreign universities affiliated colleges because of their international recognition, structured programs, and well-qualified faculty. These factors create a strong sense of trust in the value of the degree. Even with higher tuition fees, students believe the long-term benefits are worth it. This matches findings by Sharma and Bhandari (2021) and Rai (2021), who note that Nepalese students see foreign universities affiliated colleges as more reliable and globally relevant.

International exposure also plays a key role. Students value the chance to interact with foreign faculty and peers virtually. These virtual experiences help build global awareness and create valuable networks. Yang (2008) and Joshi (2024) highlighted the growing importance of intercultural competence in higher education. Respondents in this study shared similar views. They responded such exposure made them feel more connected to the global community and better prepared to future opportunities abroad.

Career support services were another strong research behind students' preferences. Students felt foreign universities affiliated colleges provided better internship, job placements, and networking opportunities. This reflects Bodycott's (2009) and Chhetri (2023) findings that career-oriented services can shape institutional choices. Students in this study clearly valued these opportunities. They believed that these services helped them feel more confident about their career paths after graduation.

In contrast, national universities were often viewed less favorably. Students raised concerns about outdated infrastructure, crowded classrooms, and weak academic support. These issues align with critiques by Lim (2010) and Rai (2021). Poor learning environments and lack of student-focused services made these institutions less attractive, especially when compared to more modern and better-managed foreign universities affiliated colleges.

Cost, while important, was not seen as a barrier for most. Students acknowledged the high tuition fees of foreign universities affiliated colleges, but many still analyzed the cost as justified. They believed the education, exposure, and career prospects offered real value. Some relied on scholarship or family support, as noted in Sapkota's (2020) work. This confirms that cost is just one part of a more complex decision-making process (Chen, 2007; Beine et al., 2014).

In general, these discussions show that Nepalese students weigh academic quality, global exposure, career outcomes, infrastructure, and cost when choosing where to study. Foreign universities affiliated colleges meet more of these expectations which explains their growing appeal.

## Conclusion

The findings of this study demonstrate that Nepalese students' preference for foreign-affiliated colleges over national universities is driven by a combination of perceived academic superiority, international exposure, career advantages, and dissatisfaction with domestic institutions. Students see foreign universities affiliated colleges as offering higher standards. They trust the degree more because they are globally recognized. The courses are more structured. The teachers often have international experience. This builds a sense of prestige and value.

Students also like the global exposure these colleges provide. They get to connect with international teachers and students virtually. These experiences help them understand other cultures. They also build networks that can help later in their careers. National universities rarely offer such chances, which makes them less appealing.

Career opportunities are another strong reason. Students responded foreign universities affiliated colleges help with internships, job placements, and industry links. Many believe these chances improve their future job prospects – both in Nepal and abroad. Even though tuition is higher, students feel it's worth the cost. They see it as an investment. In contrast, national universities are seen as outdated. Poor infrastructure and weak student services push students away.

The study also highlights the role of financial considerations, revealing that while cost is a concern, scholarships and family support often enable students to pursue foreign-affiliated education, as they anticipate long-term returns in terms of employability and earning potential.

These findings highlight the need for change in Nepal's higher education system. National universities must improve. They need better classrooms, updated courses, and stronger ties with employers. Policy makers should prioritize academic quality assurance and encourage international collaborations to enhance the global standing of domestic institutions. At the same time, students and families should make informed decisions by carefully evaluating institutional strengths, financial feasibility, and long-term career outcomes. Ultimately, addressing these challenges will be crucial in retaining Nepal's talent and ensuring that its higher education system meets both local and global demands. Future research could further explore the long-term career paths of graduates from both types of institutions to provide deeper insights into the actual benefits of foreign universities affiliated education. By bridging existing gaps, Nepal can build a more robust and equitable higher education system that aligns with the aspirations of its students.

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### **Authors' contribution statement**

Mr. Mahesh Aryal Chhetri drafted the outline, abstract, and introduction. Rojina Ranjitkar authored the literature review and performed grammar checking. Supriya Shrestha developed the methods and materials section. Sunny Tandukar analyzed the data. Manuska Upreti prepared the results. Nirajan Joshi wrote the discussion. Anushka Mahat formulated the conclusion.

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### **Declaration of conflicting interest**


Authors declare no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.



## Appendix 1: Plagiarism and AI detection test report

# Mahesh Aryal Chhetri

## Factors influencing Students' Preferences for Colleges Affiliated with Foreign Universities Compared to Nepalese uni...

 Tribhuvan University

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
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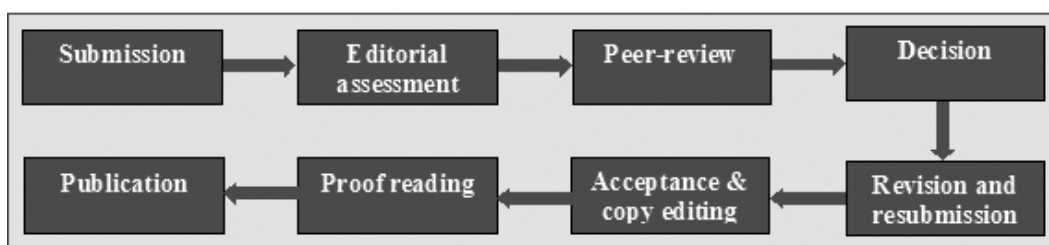
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- 1. Submission:** Author/s submit their manuscript to the *UJIS* through the journal's online submission system. The submission should adhere to the journal's guidelines regarding formatting, length, and content.
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• Author (s)	• Literature review	
• ABSTRACT	• Methods	
• Key words	• Result	
	• Discussion	
	• Conclusion	

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Preliminary section should include the following topics:

### Title

- The maximum length should be 100 characters.
- Title of the article should be brief-clear, concise and informative.
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- Second: Designation
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### Abstract

- Each manuscript must be conveyed by an informative abstract of 120 - 200 words.
- It should provide a brief summary of the research including the background, objective, methods, findings, and recommendation.
- Reference citations are not allowed in the Abstract of a manuscript.
- It should be written in italic.

### Key words

- Keywords should contain words that suggest what the topic is about.
- Four to eight key words should be provided at the bottom of the abstract.

## ***MAIN TEXT***

***Introduction:*** This section should give the reader about the background that puts the manuscript into context and allows readers outside the field to understand the purpose and significance of the study. It should start with the research background, offering context and highlighting the significance of the topic within the broader field. Next, present the problem statement, clearly articulating the specific issue or gap in knowledge that the research aims to address. Follow this by outlining the research questions, which guide the investigation and help focus the study. Conclude the introduction by stating the research objectives, detailing the goals the study seeks to achieve and how it intends to contribute to the existing body of knowledge.

***Literature review:*** This section should include comprehensive overview of all the knowledge available on a specific topic till date. Review the previous literature related to the research topic. The theoretical framework is then presented, detailing the relevant theories

and models that underpin the research. This foundation helps in identifying the research gap, highlighting areas where previous research has been insufficient or inconsistent. The conceptual framework outlines the key concepts and variables of the study and their relationships, providing a visual representation of the research structure. Finally, hypotheses formulation is based on the literature review, developing clear and testable hypotheses directly related to the research questions and objectives, grounded in the theoretical and conceptual frameworks.

**Methods:** This section details the research approach, research design, sampling design, data collection, and data analysis methods used in the study. The research approach outlines whether the study is qualitative, quantitative, or mixed-methods. The research design describes the overall strategy and structure of the study, including how the research questions are addressed. The sampling design explains the criteria and process for selecting participants or data sources, ensuring representativeness and relevance. Data collection methods are detailed, describing the tools, techniques, and procedures used to gather information. Finally, the data analysis section outlines the techniques and processes used to examine the collected data, ensuring that the analysis aligns with the research objectives and allows for valid and reliable conclusions.

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# Review of *UJIS-I*

Dr. Dasarath Neupane  
Nepal Philosophical Research Center  
Kathmandu, Nepal  
November, 2024

***Translanguaging in Higher Education:*** An Overview of Current Status in Nepal  
Strengths of the Article

***Thorough Exploration of Translanguaging:*** The article offers an in-depth analysis of translanguaging, incorporating multiple perspectives from educators, students, and scholars.

***Cultural and Contextual Relevance:*** It contextualizes translanguaging within Nepal's diverse linguistic landscape, making the findings applicable to multilingual settings.

***Pedagogical Innovation:*** Provides actionable recommendations, such as bilingual text creation and the use of dual-language materials, which are practical for classroom implementation.

***Student-Centric Focus:*** Highlights the benefits of translanguaging from students' perspectives, particularly in enhancing comprehension, retention, and engagement.

***Balanced Viewpoint:*** Discusses both the advantages and challenges of translanguaging, ensuring a holistic perspective.

***Integration of Sociocultural Dimensions:*** Acknowledges the role of sociocultural and geo-linguistic factors in language learning, enhancing the depth of the discussion.

***Global and Local Insights:*** Combines global research with localized examples, bridging theoretical and practical aspects of translanguaging.

***Encouragement of Multilingualism:*** Advocates for linguistic diversity in education, promoting inclusivity and broader cultural understanding.

***Call for Institutional Support:*** Highlights the need for policies and resources to support translanguaging, showing its practical importance in educational systems.

***Well-Organized Discussion:*** The article systematically addresses the pedagogical, cognitive, and institutional dimensions of translanguaging, making it accessible to a broad audience.

## Weaknesses of the Article

**Limited Empirical Evidence:** The article relies heavily on secondary research and anecdotal observations rather than presenting new, original data.

**Insufficient Implementation Strategies:** While providing recommendations, it lacks detailed, actionable steps for practical application in classroom settings.

## Decolonizing Nepal's Kiranti-Kõits Grammar and Lexicon

### Strengths:

***In-depth Historical Context:*** The article provides a comprehensive historical background, tracing the impact of colonization on the Kiranti-Kõits language over multiple eras, including the Gurkha conquests and the Rana regime.

***Focus on Decolonization:*** It effectively highlights the process of decolonization of the Kiranti-Kõits language by recovering and reclaiming lost linguistic features, positioning it as an important contribution to indigenous language revitalization.

***Reclamation of Linguistic Features:*** The article demonstrates a thorough process of reclaiming and rediscovering key linguistic features, such as auxiliary verbs, phonemes, and morphological elements, which were suppressed during colonization.

***Use of Linguistic Analysis:*** The paper employs morpho-phonemic analysis to examine the structure of the language, providing solid, academic methodologies for understanding language features and their evolution.

***Integration of Cultural Identity:*** The research ties language to cultural identity, using onomastics (clanonyms, toponyms, hydronyms) to illustrate how language shapes cultural and territorial sovereignty.

***Contemporary Relevance:*** The study is highly relevant to current global decolonization and identity movements, offering insights into how indigenous communities can reclaim their linguistic autonomy.

***Expands Academic Understanding:*** The paper contributes new perspectives to the field of linguistic studies by focusing on the Kiranti-Kõits language and its struggle against colonial linguistic imperialism.

***Focus on Indigenous Autonomy:*** It advocates for linguistic sovereignty, emphasizing that reclaiming and reviving indigenous languages is essential for the political and cultural autonomy of indigenous peoples.

***Support for Future Language Revival:*** The findings provide a foundation for language activists, linguists, and educators to continue efforts to revitalize and preserve indigenous languages in the face of ongoing threats.

***Engagement with Global Theories:*** The article engages with global decolonial and indigenous scholars like Ngũgĩ wa Thiong’o, connecting local linguistic struggles to broader theoretical frameworks and making the study part of a global discourse on language and identity.

Really a great attempt.

## **Challenges of Undergraduate Students in Speaking English at United College**

### **Strengths:**

***Clear Purpose:*** The aim of the study is clearly stated: analyzing the challenges undergraduate students face in speaking English at United College. This provides a focused research topic.

***Methodological Rigor:*** The study uses a quantitative research approach, which is appropriate for identifying correlations and statistical significance. The use of regression analysis enhances the depth of data interpretation.

***Relevant Variables:*** The identification of key factors like fear of making mistakes, vocabulary, grammar knowledge, and exposure to English adds meaningful insight into the challenges students face in language acquisition.

***Actionable Recommendations:*** It provides clear recommendations for addressing the identified issues, such as interventions to tackle psychological barriers and enhancing vocabulary and grammar skills, which can be practically applied to improve students' English speaking abilities.

## **Effectiveness of Service Marketing Strategies on Student Enrollment: Evidence from United College**

### **Strengths:**

***Clear Objective:*** The study’s objective is clearly defined—to examine the effectiveness of service marketing strategies on student enrollment. The focus on student enrollment is highly relevant in the context of higher education marketing, particularly given increasing competition among institutions.



**Theoretical Framework:** The use of the 7Ps marketing mix theory by Philip Kotler adds theoretical rigor to the study. The framework's application to higher education marketing is appropriate and well-suited to understand how various marketing strategies impact student enrollment.

**Quantitative Approach:** The use of a quantitative research approach with descriptive and correlational research designs ensures that the study's findings are statistically valid. The inclusion of a sample size of 122 students from various programs strengthens the credibility of the data.

**Focus on Specific Marketing Strategies:** The study examines all the components of the 7Ps (product offerings, pricing, place, promotion, process, people, and physical evidence), which provides a comprehensive view of service marketing strategies and their influence on student enrollment. The differentiation between strategies that had significant impacts and those that did not is a key insight.

**Actionable Insights:** The findings provide clear, actionable recommendations for UC to focus on improving strategies related to product offerings, pricing, place, promotion, and people. This practical applicability enhances the value of the research for the institution and other higher education providers.

**Suggestion:** Discuss the potential for generalizing the findings beyond United College and consider external factors that may affect the marketing strategies.

## **Determinants of E-banking in Nepal**

### **Strengths:**

**Clear Objective:** The study's goal to identify factors affecting e-banking adoption is pertinent given the growing use of digital banking worldwide. Focusing on convenience, time savings, security, and communication as the key factors aligns well with the existing literature on e-banking adoption.

**Theoretical Framework:** Using the Technology Acceptance Model (TAM) provides a solid theoretical foundation, as TAM has been widely applied in the study of technology adoption, particularly in areas such as online banking. This framework allows for a structured approach to analyzing adoption factors.

**Quantitative Approach:** The use of a quantitative research method with a structured questionnaire enhances the reliability and objectivity of the findings. A sample from various banks in Kathmandu ensures a diverse set of responses, which likely increases the generalizability of the results to urban areas in Nepal.

**Data Analysis:** The application of statistical methods like one-sample t-tests provides empirical evidence to support the study's conclusions. This approach helps quantify the significance of each factor, ensuring that the findings are based on statistical evidence rather than subjective interpretation.

Thus, this study contributes valuable insights into the factors influencing e-banking adoption in Nepal. It emphasizes the importance of convenience and time savings, which align with global trends in digital banking. However, further exploration of security perceptions and communication strategies would strengthen the study's conclusions and provide more detailed recommendations for banks. Expanding the research scope beyond Kathmandu and incorporating additional factors from the TAM model could also enrich the findings.

## **Employee Job Satisfaction: An Analysis of Key Determinants**

### **Strengths**

**Relevant Theoretical Framework:** Maslow's hierarchy of needs is a well-established model for understanding human motivation and satisfaction. Its application to job satisfaction is particularly relevant in an educational setting where employees' needs often span both professional and personal fulfillment. This theoretical base helps contextualize the findings and offers a clear lens through which to view the results.

**Quantitative Approach:** The use of a quantitative research method with a correlational design allows for the measurement of relationships between different needs and job satisfaction. This provides a solid empirical foundation for the study's conclusions, ensuring the findings are based on objective data rather than subjective interpretation.

**Sample Size and Scope:** The study draws data from 161 teachers across various institutions within the UAG, which is a relatively large and diverse sample. This strengthens the generalizability of the findings within the UAG and potentially to similar educational organizations.

**Key Findings:** The study identifies that basic and social needs significantly impact job satisfaction, aligning well with Maslow's theory. Additionally, the finding that self-actualization needs are a significant determinant of job satisfaction highlights an important aspect of employee motivation, suggesting that personal growth and fulfillment are integral to job satisfaction. This adds depth to the analysis and shows that job satisfaction is not solely about meeting basic needs but also involves opportunities for advancement and personal development.

Thus, this study offers valuable insights into the factors that influence job satisfaction among teaching staff, applying Maslow's hierarchy of needs to explain the findings. The emphasis on basic, social, and self-actualization needs aligns with current trends in employee motivation and well-being. However, further exploration of the non-significant factors (safety and esteem needs) could enhance the study's depth and provide a more nuanced under-

standing of job satisfaction. Additionally, incorporating broader factors that influence job satisfaction and providing more specific recommendations for UAG could strengthen the study's practical implications.

## **Bank-Specific Variables Affecting Financial Performance of Commercial Banks**

### **Strengths:**

***Relevant and Timely Topic:*** The focus on the financial performance of commercial banks in Nepal is both relevant and timely, especially given the importance of the banking sector to the country's economy. Understanding the factors that affect ROA can provide banks with actionable insights to improve profitability.

***Use of Descriptive and Causal Research Designs:*** The combination of descriptive and causal research designs allows the study to both outline the current state of bank-specific variables and explore their potential effects on ROA. This dual approach enriches the research and makes it comprehensive in both reporting and analysis.

***Longitudinal Data:*** The use of secondary data from annual reports spanning a decade (2012/13 to 2021/22) is a strength, as it allows for a more robust analysis. The inclusion of a variety of commercial banks (NABIL, NMB, Everest, Himalayan, and Sunrise) provides a balanced view of the banking sector in Nepal, making the findings potentially more generalizable across the sector.

***Clear Focus on Key Bank-Specific Variables:*** The study identifies and examines key bank-specific variables (bank size, Cash Reserve Ratio, Capital Adequacy Ratio, and Non-Performing Loan Ratio) that are crucial in understanding the financial performance of banks. This approach is consistent with literature on financial performance, where these factors are often considered important.

***Statistical Analysis:*** The study employs statistical analysis to evaluate the relationship between these variables and ROA, providing empirical support for its conclusions. It also correctly highlights which relationships are statistically significant and which are not, offering transparency about the limitations of the findings.

Thus, this study provides a solid and insightful analysis of the influence of key bank-specific variables on the financial performance of commercial banks in Nepal, particularly focusing on ROA. The use of longitudinal data and robust statistical methods enhances the credibility of the findings. However, further exploration of certain variables, such as the counterintui-

tive negative relationship between CAR and ROA, and a deeper discussion on the marginal impact of NPLR, would help clarify the results. Including additional variables and providing more specific recommendations for commercial banks could further strengthen the study's contributions. Nonetheless, the study provides valuable insights for both academic researchers and banking practitioners in Nepal.

## **Analyzing Social Capital Behaviour in the Renewable Energy Sector of Nepal**

This study provides valuable insights into the role of social capital in the renewable energy sector in Nepal, highlighting the importance of networks, trust, and shared vision among entrepreneurs. By focusing on the different types of networks, the study contributes to a better understanding of how social capital influences entrepreneurial behavior and the success of businesses in the sector. While the study is well-structured and offers useful practical implications, a deeper analysis of the individual networks, more robust statistical analysis, and further exploration of the role of government and institutions would enhance its impact. Overall, this study is a valuable contribution to the field and offers practical insights for policymakers, entrepreneurs, and researchers in the renewable energy sector.

## **Effectiveness of Nepal's E-Government Service Delivery: A Case of Department of Passport (DoP)**

This paper provides a useful analysis of the online pre-enrollment system implemented by Nepal's Department of Passport, emphasizing the role of technology in improving public service delivery, particularly during the COVID-19 pandemic. The use of E-Government Maturity Models (E-GovMM) and SWOT analysis offers valuable insights into the strengths and weaknesses of the system, and the study's recommendations for system improvement are practical and forward-thinking.

However, the study could be enhanced by incorporating feedback from end-users of the system, providing more detail on the data collection process, and addressing technological challenges in more depth. Additionally, a broader discussion on the generalizability of the findings and future research directions would enrich the paper.

Overall, the study makes a significant contribution to the ongoing discourse on e-government in Nepal and offers actionable insights for policymakers and government officials working to improve public service delivery in the country.

## **Factors Influencing Customer Satisfaction with Online Food Delivery Services in Lalitpur District**

Overall, this study makes a valuable contribution to understanding the determinants of customer satisfaction in online food delivery services in Lalitpur Municipality, Nepal. The use of Expectancy Disconfirmation Theory as the framework, the clear objectives, and the statistical analysis make the research insightful and grounded in established theory. The practical rec-

ommendations provided—focusing on ease of use, food quality, promotional strategies, and privacy—are useful for online food delivery businesses in the region.

However, the study could be improved by addressing the limitations related to the sampling method, sample size, and inclusion of negative factors affecting satisfaction. Additionally, more detail on the questionnaire design and user feedback would enhance the robustness of the findings.

Overall, the paper is well-executed for a localized study and provides valuable insights that can help improve customer satisfaction in Nepal's growing online food delivery industry.

## Notes on Contributors

**Dr. Lal-Shyākarelu Rapacha** is working in Nepal's education system and indigenous research for about three decades. In course of his academic journey, he has earned his Ph.D. from Jawaharlal Nehru University, New Delhi in his own Kiranti-Kōits mother tongue's grammar and carried out his Post-Doctoral research on Asian Studies, Languages, and Cultures as a Humboldt Fellow funded by AvH Stiftung (Foundation) in Germany with specific research topic on 'Kiranti-Bayung Grammar, Texts and Lexicon' (one of the endangered indigenous Kiranti languages of Province 1, East Nepal) from February 2008 to June 2010. He has published Eighteen books to his credit and his recent eighteenth publication is on *Kiranti-Kōits Grammar, Texts and Lexicon* (2022) published by LINCOM EUROPA Academic Publications. Also, he has published Forty-one research articles in national and international journals, edited Ten journals, and has edited Forty-six books on indigenous issues of Nepal. His research interest is focused on Global Indigenous and Decolonial Studies and its inclusion in main-stream education curriculum of Nepal's education system along with future zeal and dream of establishing Nepal Indigenous Peoples' University (NIPU) in the country.

**Dr. Binod Lingden** is the Research Coordinator of United College and a dedicated faculty member for both Bachelor's and Master's programs. He teaches general management subjects, including International Business, Entrepreneurship, Labour relations Management, and Business Research Methods. He has authored multiple academic books and published numerous articles in national and international journals on education and management. Dr. Lingden is a Post-Doctoral Research Fellow at Srinivas University, India, and holds a PhD in International Business from Mewar University, India, and an MBA from the University of Gloucestershire, UK. His works reflect a strong commitment to quality education, research excellence, and academic leadership.

**Dr. Shyan Kirat Rai** is a permanent staff member of the Nepal Administrative Staff College, Jawalakhel, Lalitpur, currently serving as Deputy Director of Studies. His specializations include Information and Communication Technology and Knowledge Management. He earned his PhD in 2020 from IIT Bombay under the DAAD Scholarship, completed his MTech in Computer Science from NIT Tiruchirappalli with the Dr. Homi Bhabha Scholarship, and holds a Bachelor's in Computer Engineering from Tribhuvan University. His research focuses on e-governance, ICT for development, digital convergence, public administration, social media, and information systems, with numerous publications in national and international journals.

**Dr. Lekhnath Khanal** is a senior officer in the Armed Police Force (APF), Nepal, holding a PhD from Mewar University. He has served in various operational and administrative roles, demonstrating leadership in security management, disaster response, and community

safety. Dr. Khanal has published research supporting evidence-based policing and institutional improvement. His academic interests include security studies, public administration, organizational behavior, and national resilience. He actively engages in training, policy formulation, and capacity-building programs within APF. Committed to professionalism, he integrates practical experience with academic insight to enhance institutional effectiveness, leadership, and public safety in Nepal's security sector.

**Dr. Tara Prasad Gautam** holds a PhD in Human Resource Management from Mewar University, Rajasthan, an MPH from OPJS University, Rajasthan, and a Master's in Finance from Lumbini Banijya Campus, Tribhuvan University. He has extensive leadership experience, serving as Campus Chief of Parroha Multiple Campus, Associate Professor and Assistant Campus Chief of Madan Bhandari College, Academic Director of Mayadevi Technical College, CEO of Franklin Solutions, and Executive Director of Nepal Philosophical Research Center (NPRC). He conducts trainings on statistical data analysis, research methodology, and community health. His research focuses on human resource management, knowledge management, and organizational performance, reflecting commitment to education and evidence-based practice.

**Dr. Ramon N. Daludado** is a faculty member at Our Lady of Fatima University, Metro Manila, actively contributing to both graduate and undergraduate programs. He is engaged in teaching, research, and academic mentorship, guiding students in developing practical skills and theoretical understanding. Dr. Daludado emphasizes evidence-based education, fostering critical thinking, and applying knowledge to real-world challenges. His scholarly work includes research publications, curriculum development, and collaborative academic initiatives. Committed to student learning and professional growth, he integrates academic rigor with practical experience, supporting the development of competent, knowledgeable, and ethically responsible graduates prepared for leadership and success in their respective fields.

**Dr. Emilio Lobederio Jr.** is a faculty member at the Graduate School of Our Lady of Fatima University, Metro Manila, actively engaged in teaching and mentoring graduate students. He contributes to curriculum development, academic research, and the advancement of scholarly programs. His work emphasizes fostering critical thinking, promoting evidence-based learning, and supporting professional growth. Dr. Lobederio integrates theoretical knowledge with practical application, guiding students to achieve academic excellence and career readiness. Committed to higher education, he participates in research initiatives, workshops, and collaborative projects, ensuring that students develop both advanced knowledge and the necessary skills for leadership and professional success.

**Dr. Isaias L. Borres** is the Department Chair at the Graduate School of Our Lady of Fatima University (OLFU), Philippines, and overseeing programs in Business, Public Administration, Hospitality, and Tourism Management. He also serves as a professor, contributing to teaching, research, and curriculum development. Dr. Borres is actively engaged in mentoring graduate students, promoting evidence-based learning, and fostering critical thinking and professional skills. His work emphasizes the integration of theoretical knowledge with practical application, supporting student academic growth and career readiness. Through research, workshops, and collaborative initiatives, he enhances scholarly development and contributes to the advancement of higher education in the Philippines.

**Mahesh Aryal Chhetri** is the Graduate Program Director at United College, overseeing programs such as BBS, BBM, BCA, and MBS. He holds a Master's in Business Studies (MBS) with a specialization in Accountancy and an LLB, both from Tribhuvan University. In addition to his administrative responsibilities, Mr. Aryal Chhetri lectures in accountancy and has contributed several research articles to academic journals. He is particularly interested in leadership and is committed to aligning academic excellence with effective administration. His work emphasizes integrating practical management skills with scholarly knowledge, fostering both student development and institutional growth. Through his dual focus on teaching and leadership, he strives to create an environment that encourages learning, professional development, and organizational efficiency.

**Ashok Pokharel** is a senior faculty member at United College, where he teaches general management subjects such as Entrepreneurship, Principles of Management, Organizational Behavior, and Human Resource Management. He holds an MBA from Shankar Dev Campus, Tribhuvan University, with a specialization in Industrial Relations and Industrial Psychology. Over the course of his academic career, he has published research articles in both national and international journals, demonstrating his commitment to scholarly advancement. His research interests primarily focus on Organizational Behavior, Human Resource Management, and Entrepreneurship. Combining practical teaching with research, he strives to develop students' managerial skills, critical thinking, and leadership capabilities.

**Rakesh Kumar Jha** is a senior faculty member at United College, teaching mathematics in both Bachelor's and Master's programs. He holds an MA and an M.Ed. in Mathematics from Tribhuvan University, demonstrating a strong academic foundation. He actively contributes to research, specializing in statistical analysis, data interpretation, and research methodology. His work bridges theoretical mathematics with practical applications, enhancing both academic research and student learning. Committed to teaching excellence, he mentors students, guides research projects, and fosters analytical and problem-solving skills, supporting professional growth and the development of competent, skilled graduates in mathematics and related fields.



Rojina Ranjitkar is a senior faculty member at United College, teaching for over 20 years. She specializes in Human Resource Management, Business Strategy, and Business Environment, primarily for BBM and BBS programs. She has published several research articles in national journals, demonstrating commitment to scholarly advancement. Ms. Ranjitkar holds an MBA from KUSOM, Nepal, specializing in Human Resource Management. In addition, she serves as Executive Director of Rainbow Travel and Tours, Kathmandu, Nepal, integrating professional experience with education. She focuses on student development, capacity-building, and fostering academic excellence, leadership, and practical skills among her students.

**Ganesh Joshi** is a senior faculty member at United College, teaching general management subjects such as Entrepreneurship, Marketing, and Project Management for bachelor's programs. He holds an MBA from Tribhuvan University with a specialization in Human Resource Management. In 2024, he received a mini research grant from United College, reflecting his engagement in scholarly work. He has published several articles in national journals, contributing to management knowledge in Nepal. Committed to academic excellence and practical application, he focuses on developing students' managerial skills, fostering innovation, and promoting research-informed teaching within the college.

**Aahamad Rojin Miya** is a computing professional holding a BSc (Hons) in Computing from Softwarica College of IT and E-Commerce, affiliated with Coventry University, UK, graduating with First Class honors. He is a Lecturer in the Faculty of BCA, teaching Software Engineering, Software Project Management, Network Programming, and Project-Based Learning, while supporting assessments, labs, and research activities. His professional experience includes InfoDevelopers Pvt. Ltd., Yenya Soft Pvt. Ltd., and F1Soft International Pvt. Ltd., where he served as Business Analyst and Product Owner, specializing in requirement engineering, Agile/Scrum practices, backlog management, stakeholder coordination, and end-to-end product development.

**Rabu Ranjit** is a faculty member of English at United College, teaching bachelor's programs. She holds a Master's in Education specializing in TESOL from BRAC University, Dhaka, and a Master's in Education Policy and Development from Central European University, Vienna, Austria. She was a Visiting Scholar at Bard College, New York, USA, from August to December 2022. Her research focuses on Applied Linguistics and Second Language Acquisition. She combines international academic experience with practical teaching, developing students' English proficiency, pedagogical skills, and critical thinking, while contributing to research, scholarship, and language education policy development.

**Er. Abdul Aziz Miya** is a faculty member of the BCA program at United College, specializing in Computer Engineering. He holds a Master's degree in Computer Engineering from Pokhara University. At United College, he teaches courses including Digital Logic, Scripting

Languages, and Web Technology, providing both theoretical knowledge and practical skills. His teaching integrates core computer engineering concepts with modern technological applications, preparing students for academic and professional success. Er. Miya is dedicated to fostering critical thinking, problem-solving, and technical proficiency, and actively engaging students in lab sessions, projects, and research activities to enhance competence in computer engineering.

**Baburaja Tandukar** is a dedicated faculty member at United College, specializing in Finance. He holds an MBA in Finance from Tribhuvan University, reflecting strong academic and professional grounding. At United College, he teaches key subjects such as Finance, Investment, Financial Institutions and Markets, Banking Law, Commercial Banking Operations, and Microfinance. His teaching focuses on building students' analytical abilities and practical understanding of financial systems. Along with teaching, he is actively involved in research, contributing to studies related to financial markets, banking practices, and emerging trends in Nepal's financial sector. His commitment supports quality education and academic growth.

**Ramesh Raj Pandeya** is a valued faculty member at United College, specializing in Accounting. He holds an MBS degree with an Account specialization from Tribhuvan University. He teaches Financial Accounting to BBS and BCA students. In the BBM program, he teaches Financial Accounting, Cost Accounting, Taxation and Auditing, Security Analysis and Portfolio Management, and Budgeting and Financial Forecasting. At the MBS level, he teaches Management Accounting, Accounting Theory, and Managerial Decision Making and Controlling. His teaching emphasizes clarity, practical application, and analytical skills. He is dedicated to supporting students' academic growth through effective instruction and a strong commitment to quality education.

**Shyam Prasad Bastakoti** is a faculty member at United College, teaching finance and accounting in both bachelor's and master's programs. He holds a Master in Business Administration (MBA) degree from International American University (IAU), California, USA, with a specialization in finance. With extensive knowledge in financial management, investment analysis, and accounting principles, he integrates practical examples and theoretical concepts to enhance student learning. He actively engages students in discussions, case studies, and research projects, fostering critical thinking and analytical skills. His dedication to teaching and professional expertise contributes significantly to the academic growth of his students.

**Richa Pokharel** is a dedicated faculty member at United College, teaching Operation Management, Business Environment, and Strategic Management across the BBM, BBS, and MBS programs. She holds an MBA in Finance from Pokhara University, completed at Uniglobe College, which reflects her strong academic foundation in business and financial studies.

With a passion for continuous learning, she is actively involved in research activities that contribute to academic growth and institutional development. Her teaching approach emphasizes practical understanding, analytical thinking, and professional competence, helping students gain the skills needed for their academic and career success.

**Debika Aryal** is a researcher and an active member of the Nepal Philosophical Research Centre, Kathmandu, Nepal. She contributes to scholarly activities, engaging in research projects and academic discussions that advance philosophical studies and knowledge development. Her work reflects a commitment to promoting critical thinking and interdisciplinary research within Nepal's academic community.

**Estar Limbu** is an MBS student at United College, specializing in Finance. She is expected to graduate in 2025. Throughout her studies, she has demonstrated strong analytical and financial skills, actively participating in class discussions and research projects. Her research work includes *“Service Turnaround and Financial Performance of Motorcycle Repair Centres in Lalitpur district.”*

**Bibek Bhurtel** is an MBS student at United College, specializing in Finance, and is set to graduate in 2025. His dissertation focuses on *“Cultural Tourism and Financial Performance of Handicraft Enterprises Business in Lalitpur District.”* He actively engages in research, financial planning, investment strategies, and class activities, demonstrating strong commitment to academic and professional growth.

**Chunika Rai** is an MBS student at United College currently in the second semester. She is building her foundational knowledge in management and finance while actively engaging in classroom learning, research assignments, and collaborative projects. Chunika demonstrates enthusiasm for academic growth, analytical thinking, and the practical application of management principles.

**Supriya Shrestha** is an MBS student at United College, specializing in Finance, currently in the second semester. She is developing her understanding of financial management, investment analysis, and corporate finance. Supriya actively participates in class discussions, research activities, and projects, demonstrating commitment, analytical skills, and a focus on professional growth in the field of finance.

**Animon Rapacha** is a BBM graduate of United College, Tribhuvan University. She demonstrated a strong business acumen and actively participated in academic projects and class discussions. Her focus included management principles, entrepreneurship, and organizational behavior, reflecting dedication to academic growth, practical application of business knowledge, and readiness for professional success. As a creative writer, she writes Poetry and

Essays mostly in English besides her father-tongue Kiranti-Kõits or mother-tongue Kiranti-Rodung and her writings have been published in national dailies and annual magazines like *The Kathmandu Post*, *Milestone*, <https://www.collegenp.com/college/modern-indian-school>, *United Luminary* (UL) 1, 2 & 3 <https://college.united.edu.np/downloads.pdf>. Some full length articles include § ‘Franchise Business in Nepal’, UL # 1 Pp. 52-55, § ‘From Bazaars to Bytes: The Future of E-Commerce in Nepal’, UL # 2 Pp. 47-51, § ‘Exploring Diversity in UL # 1 (Review)’, UL # 2 Pp. 94-96, § ‘From Setback to Comeback’, UL # 3 Pp. 67-99, § ‘Learning Experience with Mannsi Agrawal’, UL # 3 Pp. 170-175, *Annapurna Express* <https://theannapurnaexpress.com/story/47084/>, *MyRepublica* <https://myrepublica.nagariknetwork.com/author/2964/animon-rapacha>. She has her own personal Blog @ <https://animonsworld.blogspot.com>) and Instagram video page content @ <https://www.instagram.com/studywithanimon/>. She can be reached @ [rapacha777@gmail.com](mailto:rapacha777@gmail.com).

**Alish Shakya** is a BCA sixth semester student at United College, developing expertise in computer applications, programming, and digital technologies. He actively participates in lab sessions, project work, and class discussions, demonstrating commitment to learning. Alish aims to strengthen technical skills and problem-solving abilities, preparing for professional growth and opportunities in the field of computing.

**Anish Maharjan** is a BBS fourth year student at United College, actively engaged in learning business and management concepts. He participates in research projects, case studies, and class activities, focusing on finance, marketing, and organizational management. His dedication to academic and professional development prepares him for future leadership roles in business and management sectors.

**Anushka Mahat** is a BBM, seventh semester student at United College, actively learning management principles, business strategy, and entrepreneurship. She participates in academic projects, research assignments, and collaborative activities, developing analytical and leadership skills. Anushka demonstrates commitment to practical application of knowledge and professional growth, preparing for a successful career in the business sector.

**Kristina Maharjan** is a BCA sixth semester student at United College, focusing on programming, web development, and software applications. She actively participates in projects, lab sessions, and research activities, demonstrating curiosity and commitment to learning. Kristina aims to enhance technical knowledge, problem-solving skills, and professional readiness in the field of computing.

**Manisha Mahat** is a BBS fourth year student at United College, developing a strong foundation in business, finance, and management. She engages in research, case studies, and class discussions, demonstrating commitment to learning and practical application of knowl-

edge. Manisha focuses on preparing for future professional roles and enhancing analytical and leadership capabilities.

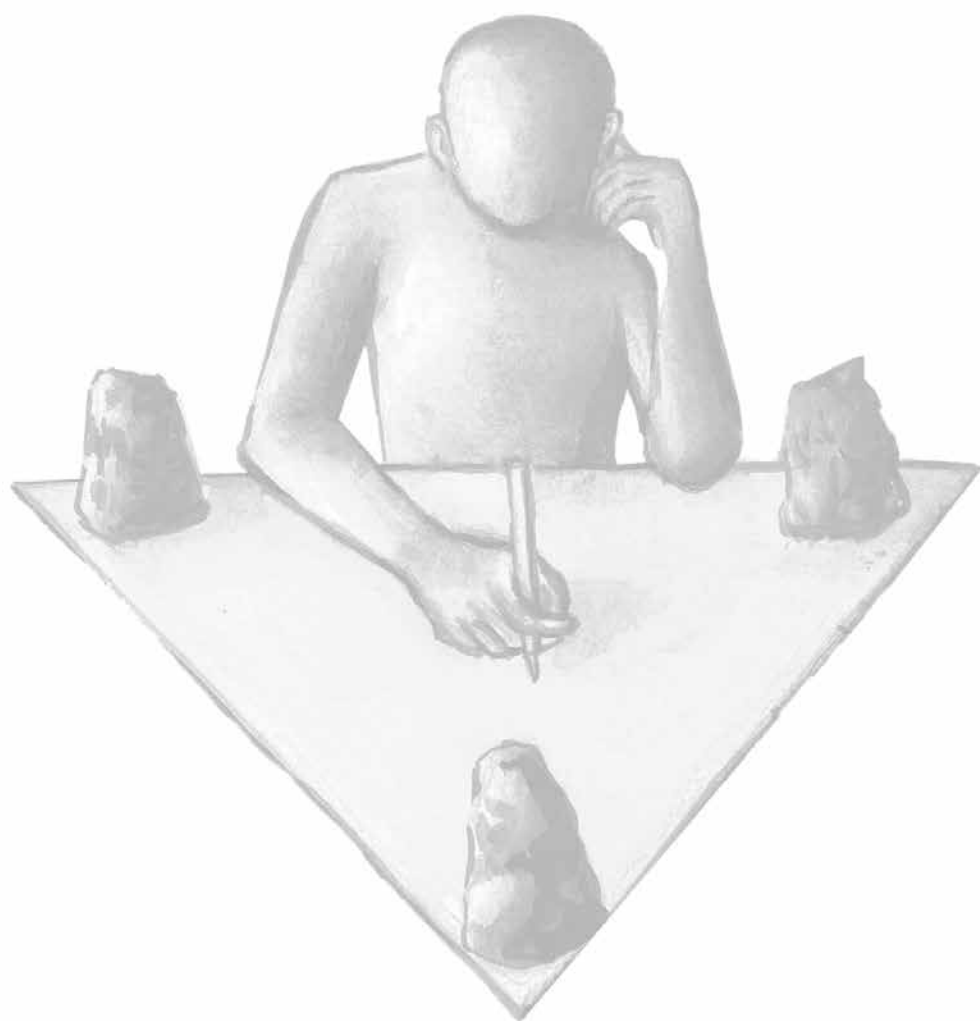
**Manuska Upreti** is a BBM, seventh semester student at United College, actively involved in learning management principles, entrepreneurship, and organizational behavior. She participates in academic projects, research assignments, and collaborative activities, demonstrating dedication to professional growth. Manuska focuses on applying theoretical knowledge in practical contexts, preparing for a successful career in business management.

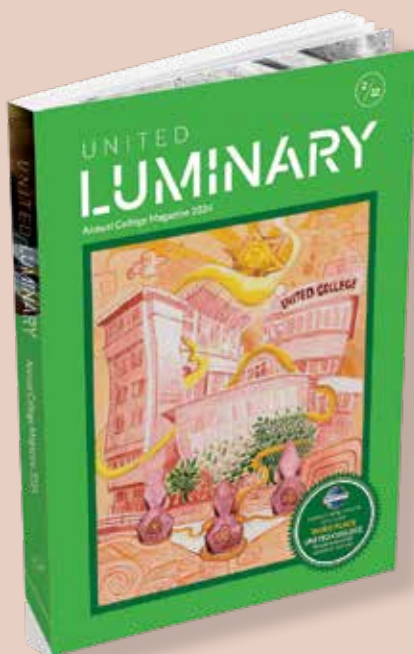
**Nilaw Manandhar** is a BCA eighth semester student at United College, focusing on computer programming, digital technologies, and software development. He actively engages in lab sessions, academic projects, and research work, demonstrating commitment to learning. Nilaw aims to enhance technical and analytical skills while preparing for a career in the IT and computing industry.

**Nirajan Joshi** is a BBS fourth year student at United College, developing expertise in business management, finance, and marketing. He actively participates in class discussions, research projects, and collaborative assignments. Nirajan demonstrates commitment to learning, critical thinking, and practical application of management concepts, preparing for professional growth and future leadership roles in the business sector.

**Rojan Dangol** is a BCA eighth semester student at United College, building strong skills in programming, software applications, and digital technologies. He actively participates in lab sessions, projects, and academic research, demonstrating a commitment to technical competence and professional development. Rojan focuses on developing practical skills to excel in the IT and computing field.

**Smriti Rai** is a BBM seventh semester student at United College, actively learning management principles, business strategy, and entrepreneurship. She engages in class discussions, research activities, and collaborative projects, demonstrating commitment to academic and professional growth. Smriti focuses on developing analytical, leadership, and problem-solving skills, preparing for a successful career in business management.





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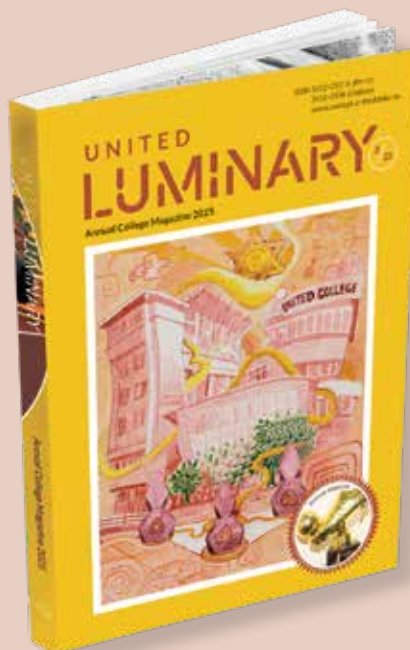
researchdocuments2023@gmail.com

binodlingden@united.edu.np

principal@united.edu.np

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