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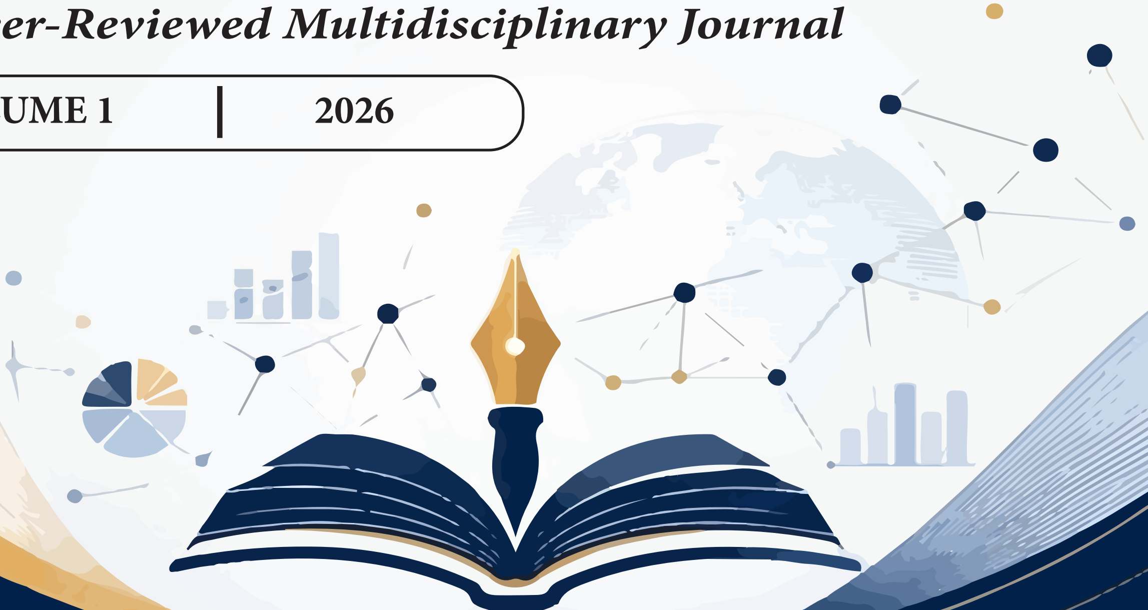

QUALITY RESEARCH | NEW PERSPECTIVES | SCHOLARLY ADVANCEMENT | TRANSFORMATIONAL IMPACT

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Editorial

It is with great pleasure that we present the inaugural issue of the **TIC Journal of Society and Enterprise**, a scholarly publication of **Triveni International College, Pokhara**. This journal reflects our commitment to academic excellence, research culture, innovation, and the dissemination of knowledge that contributes to both societal development and entrepreneurial advancement.

As a growing center of higher education, Triveni International College believes that research is fundamental to critical thinking, evidence-based decision-making, and sustainable progress. Through this journal, we aim to provide a platform for academicians, researchers, professionals, and students to share original ideas, research findings, and insightful perspectives on contemporary social, economic, managerial, and developmental issues.

The *TIC Journal of Society and Enterprise* seeks to promote interdisciplinary scholarship and encourage meaningful dialogue between academia and practice. We hope that the articles published in this issue will inspire intellectual curiosity, foster innovation, and contribute to the advancement of knowledge for the benefit of society and enterprise alike.

We express our sincere gratitude to all the authors, reviewers, editorial board members, college administration, RMC and well-wishers whose valuable contributions have made this publication possible. Their dedication and scholarly efforts have laid a strong foundation for this journal's future growth and excellence.

We warmly welcome our readers to this inaugural issue and look forward to continuing this journey of knowledge creation, collaboration, and academic engagement.

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Eco-pedagogical Techniques in Teaching Poetry

Agni Prasad Gnawali[1], Sujana Timalsina[2]
[1] Assistant Professor at Chaitanya Campus, Banepa, Nepal
[2]Teacher, Bhaleshwor Secondary School, Kavre.

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Corresponding Author:
sujana@bhaleshwormavi.edu.np

Abstract

This research investigates the application and effectiveness of eco-pedagogical techniques in English literature instruction at secondary level in Nepal. The study addresses the common problems in Nepalese classrooms where literary items, particularly poetry, are often taught using traditional, mechanical methods that lead to student boredom and disconnection from deeper themes of nature and life. The present research was conducted in five purposively selected secondary schools. Data were collected using a mixed-method design: quantitative data were gathered from 50 student respondents via a closed-ended questionnaire, and qualitative data were obtained through open-ended interviews with five English teachers. The research concluded that the use of eco-pedagogical techniques in teaching literary items at the secondary level is not only feasible but also highly effective. Though some respondent teachers found some challenges, the students' positive reception, increased engagement, and improved environmental knowledge validate eco-pedagogy as a perfect pedagogical tool for English language teaching in Nepal.

Introduction

The trend of teaching literary items has been influenced by the sense or grammar translation method since its beginning in Nepal. In most English classrooms, literature is still like a leftover from an older syllabus. It's taught in the way it's always been taught: read the lines, explain the meaning, and memorize. Students often end up feeling bored or disconnected, especially when the literary items, including poems, are taught in their classrooms. That gap between how literary items are taught and what they're trying to say has a big difference. Eco-pedagogical techniques could be meaningful to bridge this gap in English classrooms. It is not some trendy academic phrase, its just a fancy way of saying: let's teach in a way that helps students care about the world around them, and let's not just tell them—let's show them. It links the natural phenomena with human psychological instincts; as stated by Churchill (2022), "While it is possible to “explain” natural events by means of causal thinking, psychological life requires something else for its elucidation… (p. 17). In eco-pedagogical technique, teaching poetry is linking the texts with ecological matters and then, human psychology of learning. As stated by Dilthey (1924/1977a) “We explain nature; we understand psychological life” (p. 27). It makes teaching lively and more interactive so that students could understand both nature and English language simultaneously. This might mean stepping outside to read “Stopping by Woods on a Snowy Evening” while actually standing under trees or discussing the environmental themes in “Leisure”, not just as abstract ideas but as real-life reflections.

Eco-pedagogy developed out of the need to respond to environmental problems by including awareness in education. It links knowledge, emotion, and social responsibility. When applied to language learning, it helps students understand not just what words mean but what they imply about how we live. It's about helping students develop both language skills and the awareness to think beyond textbooks.

According to (Grigorov & Fleuri, 2012), “Eco-pedagogy deals with human problems, behavior, and human responsibility toward nature” (pp. 433-454). Unlike traditional environmental education, eco- pedagogy deepens knowledge about nature while empowering learners to devise actionable strategies to address the ongoing ecological crisis. It engages participants in activities that promote meaningful change. Teaching English as a second or foreign language stresses language skills and environmental issues to increase environment preservation consciousness. According to Misiaszek & Torres (2019), “eco pedagogy is the missing chapter of pedagogy of the oppressed” (pp. 463-488). Using eco-pedagogical techniques is more common and popular day by day because they are authentic, nature friendly and accessible.

Kazazoglu, (2025) in “Integrating sustainability into English language teaching” (pp. 1-23) argues that English language teaching (ELT) can function as an effective platform for environmental education by embedding sustainability themes into writing tasks, thereby promoting both linguistic development and ecological awareness. Literature also shows that empirical research on practical models for implementing eco-literacy in ELT remains limited, particularly regarding learners’ perceptions and measurable linguistic outcomes. In this line, Kazazoğlu’s work contributes evidence that eco-literacy-oriented writing activities can strengthen students’ environmental sensitivity while supporting language proficiency, underscoring the potential role of ELT in advancing broader sustainability goals. Chen and Huang (2023) in “Integrating Eco-Literacy into EFL Classrooms: Effects on Learners, Engagement and Critical Thinking” (pp. 45-59) reported that eco-themed project-based learning increased students’ engagement, collaboration, and critical problem-solving, with measurable gains in reading comprehension and environmental vocabulary.

Wagle (2023) in “Ecological Implication of Local Curriculum” (pp. 87-101) concluded that "Nepali schools found that integrating local environmental issues and community knowledge into classroom activities strengthened students’ ecological awareness, personal responsibility, and connection to their local environment, indicating that contextualized eco-learning can foster both cognitive and affective growth". In Khadka's (2023) article, “Impact of E-pedagogy in English E-class in Higher Education in Nepal” (pp. 159-185), "E-pedagogy includes access in overall quality of English language teaching and learning in the context of Nepal" (p. 185). Students' learning interest and capacity increases while using eco-pedagogical techniques in English classrooms. As researched by Pokheral (2023), "use of eco-pedagogical techniques improved students’ life learning capacity with positive attitudes ". There are also many obstacles while using eco-pedagogy in English classrooms in Nepalese context. As Bhusal (2021) states, "… systemic measures for curriculum revision, teacher education, and resource development to translate positive teacher attitudes into sustainable classroom practice, … translate into measurable gains in learners' language proficiency and eco-literacy" (p.19).

Methodology

This study employed a mixed-method research design, both qualitative and quantitative, to gain a comprehensive understanding of what is happening in the classroom. On the quantitative side, the study used a structured closed ended questionnaire to collect responses from students. This helped measure how often eco-pedagogical techniques were used and how students responded to them in terms of interest, understanding, and engagement.

On the qualitative side, the researchers observed classes and conducted short interviews with English teachers. This provided a deeper look into how eco-pedagogical methods were applied in real-time, how students reacted, and what challenges or successes teachers faced when using these techniques in their English classrooms.

The population for this study included secondary-level English teachers and grade nine students from community schools. To keep things focused, the sample was selected using purposive sampling method. Five English teachers were selected who had at least two years of experience in teaching poetry and who were open to try or already using eco-pedagogical strategies. Accordingly, randomly sampled 50 grade nine students from five sample schools, who received poetry lessons using eco-pedagogical techniques, were the direct respondents for this research. The goal was not to generalize for the whole country, but to get specific, reliable feedback from a well-defined group sample population and the study area.

Data were collected using open-ended interviews with the selected teachers and close-ended questionnaire with the student respondents.

Result

The aim of this survey was to assess teachers' preferences, perceptions, and the impact of incorporating an eco-pedagogical techniques while teaching English literary items. The following tables provide detailed responses to each of the key questions from the survey, grouped thematically. Each question explores a specific aspect of the teachers' attitudes toward eco-pedagogical instructions, challenges faced, and the perceived benefits or drawbacks of using Nepali alongside English in their classrooms. There are ten tables presented as follows:

Table 1

Impact of eco-pedagogical approaches in literary items

Question		**Answer**	
Do your teachers used eco-pedagogical methods while teaching poems from the grade nine English text book?		**Yes**	**No**
Response	Number of respondents	45	1
	Percentage of respondents	98%	2%

Source: Field survey

The above result shows that majority of respondents (98%) use eco-pedagogical technique while teaching poems from the grade nine English textbook. A small minority, only 2% indicated that they do not use these methods. This high percentage suggests that the concept of integrating environmental principles into pedagogy is widely accepted in the research area.

The second questions in the survey is related to practices while teaching poetry lessons at secondary level.

Table 2

Students' interest levels in environmental topics integrated into literary items

Question		**Answer**				
Which of the following practices they apply in poetry lessons?		Linking poems to real environmental issues	Encourage discussion about human nature relationship	Organizing nature based activities	Highlighting eco-pedagogical themes and symbolism in poems	None of the above
Response	Number of respondents	20	12	2	12	0
	Percentage of respondents	44%	26%	4%	26%	0%

Source: Field survey

The most common practice, mentioned by 44% of respondents, is linking poems to real environmental issues. A smaller percentage (4% or 2 respondents) indicated organizing nature-based activities. Significantly, 0% of respondents chose "None of the above," suggesting that all teachers who teach the English literary items apply at least one of these specific eco-pedagogical practices.

This shows a clear preference for practices focused on contextualizing the poetry and critical analysis. The lower rate for "organizing nature-based activities" suggests a potential gap in the implementation of practical, experiential eco-pedagogy.

The third question in the survey is related to how frequent the teachers use eco-pedagogical during teaching poem?

Table 3

Repetition of environmental themes during poetry lessons

Question		**Answer**				
How often do they emphasize environmental themes during poetry lessons?		Always	Often	Sometime	Rarely	Never
Response	Number of respondents	14	24	5	3	0
	Percentage of respondents	30%	52%	11%	7%	0%

Source: Field survey

According to the responses, while the overall use of eco- pedagogical methods is high, the data on frequency suggests that for the majority of teachers (52%), it is an often but not always integrated element. A result of 0% for the 'never' option means that there are no teachers who do not use eco-pedagogical methods.

The forth question in the survey is related to whether these teaching approaches (integrating environmental themes/eco-pedagogy) help students understand literary items better.

Table 4

Students' understating level in literary items

Question		**Answer**		
Do these teaching approaches help students better understand in literary items?		Yes	No	Not sure
Response	Number of respondents	40	3	3
	Percentage of respondents	86%	7%	7%

Source: Field survey

According to the data, 86% or most of the respondents agree on option which shows the eco-pedagogical approaches help students better understand in literary items. This strong positive feedback (40 out of 46 respondents) suggests that integrating environmental context is highly effective as a pedagogical tool, making abstract literary concepts more relatable and comprehensible for the students.

The fifth questions in the survey is related to gauge students' interest when environmental topics are included in literary items.

Table 5

Interest level of students in environmental topics

Question		**Answer**			
Do you show more interest when environmental topics are included in literary items?		Very much	Some what	Slightly	Not at all
Response	Number of respondents	28	13	5	0
	Percentage of respondents	61%	28%	11%	0%

Source: Field survey

A combined 89% of students expressed high interest, answering "Very much" (61%) and "Somewhat" (28%). Only 11% reported being "Slightly" interested, and 0% were "Not at all" interested. This indicates that incorporating environmental topics significantly increases student engagement and motivation, making the literature more relevant.

The sixth question in the survey assesses whether students noticed an improvement in their environmental awareness through these lessons.

Table 6

Noticeable improvement in student awareness

Question		Answer			
Have you notice any improvement in student/friends awareness of environmental issues through these lessons?		Yes, significantly	To some extent	No noticeable change	Not sure
Response	Number of respondents	27	7	11	1
	Percentage of respondents	59%	15%	24%	2%

Source: Field survey

According to the above table, 59% reported a "significant" improvement. An additional 15% noted improvement "To some extent", bringing the total noticing some level of positive change to 74%. Only 24% reported "No noticeable change. The data strongly supports the notion that eco-pedagogy is not just an effective teaching method but is also successful in achieving its core goal: supporting greater student environmental awareness.

The seventh question in the survey is related to find the students' feeling regarding the eco-pedagogical elements included in the syllabus.

Table 7

Students feeling in English poetry syllabus

Question		Answer			
How easy is it to include eco-pedagogical elements in the grade nine English poetry syllabus?		Very Easy	Easy	Difficult	Very difficult
Response	Number of respondents	0	39	6	1
	Percentage of respondents	0%	85%	13%	2%

Source: Field survey

In table number 7, 85% of students' response were "Easy" to include these elements, while 0% showed it "Very Easy". Only a small minority reported it being "Difficult" (13%) or "Very Difficult" (2%).

The high percentage of ease from the students suggests that they find the integration natural and they are feeling easy in eco-pedagogical elements included in the syllabus.

The eight questions in the survey measures students' confidence in discussing ecological themes when teaching/learning English literature.

Table 8

Levels of student confidence in addressing ecological themes

Question		Answer		
Are you confident discussing ecological themes while teaching English literary items?		Yes	No	May be
Response	Number of respondents	32	1	13
	Percentage of respondents	70%	2%	28%

Source: Field survey

The above result shows the 70% of students are "Yes" confident in discussing these themes, and 28% answered "May be". This high students' confidence suggests that the eco-pedagogical approach successfully provides the vocabulary, knowledge and critical thinking skills needed for students to engage articulately with English literary topics.

The ninth question in the survey is related to find the preference of the students in the eco-pedagogical technique for teaching English story.

Table 9

Recommendations for using eco-pedagogical techniques

Question		Answer		
Would you recommend eco-pedagogical technique for teaching English story?		Yes	No	No idea
Response	Number of respondents	38	0	8
	Percentage of respondents	83%	0%	17%

Source: Field survey

From the above result, a significant majority (83%) said "Yes" recommend the technique and 0% answered "No," with 17% having "No idea". This majors positive recommendation demonstrates strong student preference and satisfaction with the approach, validating its perceived effectiveness and appeal beyond just poetry to other literary forms like stories.

The last question examines whether specific literary items (like 'Leisure, Stopping by Woods on a Snowy evening, Daffodils, Sky Burials') help students develop a deeper respect for nature.

Table 10

Review of respondents to literary items mentioned in the text book

Question		Answer		
Do you think literary items like 'Leisure', 'Stopping by Woods on a Snowy Evening', 'Daffodils', 'Sky Burials' help students develop a deeper respect to nature?		Yes	No	Not sure
Response	Number of respondents	44	0	2
	Percentage of respondents	96%	0%	4%

Source: Field survey

According to the above table, the 96% respondents answered ‘yes’ which the literary items included in secondary level English book are helpful for students to develop a deep respect to the nature. Only 4% respondents were 'not sure'. It means that students prefer eco-pedagogical techniques in literary items.

Analysis of qualitative data

The researcher took interview with experienced English teachers from purposively selected five schools using open-ended questions. Below are sample questions and their responses:

1. What teaching methods are you currently using while teaching literary items such as stories, poems and essays at the secondary level?

   Teacher-1: “In my seven years of teaching, I have mostly relied on discussion-based lessons, close reading contextual explanation, and small group work. I also use visual aids, short videos, and creative response activities when needed. These techniques help students interpret themes and emotions more effectively.”

   Teacher-2: “I combine text-based reading, discussion, group work, role play and eco-pedagogical activities. For instance, when teaching a story or poem from the textbook that includes natural imaginary like a description of a river, forest or seasons. I ask students to observe similar natural elements in their surroundings or draw sketches. This is an Eco-pedagogical technique that makes students connect literary text with real life environment.”

2. How would you describe your understanding of eco-pedagogical techniques and their relevance to teaching literature?

   Teacher-3: “I understand Eco-pedagogical techniques as approaches that connect classroom with environmental awareness. In literature classes, these techniques help students relate themes, settings and characters to real-life ecological issues. They make literary texts more meaningful and relevant.”

   Teacher-4: “Eco-pedagogical techniques are methods that integrate environmental awareness in to teaching. Even though the secondary level English textbook does not always explicitly focus on the environment, we can apply outdoor observation, eco discussion and reflective writing to promote eco consciousness.”

3. In your experience, how does eco-pedagogy influence students’ engagement and comprehension of literary texts?

   Teacher-5: “Based on my experience, eco-related activities such as outdoor observation, nature based reflection tasks, and discussions on ecological themes increase student engagement. They develop deeper comprehension, especially in poems and stories that involve natural imagery or environmental concerns."

   Teacher-1: “Whenever I use eco-based activities, students show more interest. For example: while describing snowy evening show students to video of snow fall and note the feeling. During the discussion, students linked their observations to imagery, mood and symbolism in the poem. This type of activity helps to improve both comprehension and engagement through direct interaction with nature”.

4. What challenges and limitations are you facing while trying to incorporate eco-pedagogical techniques in literature teaching?

Teacher-2: "There are few challenges. Time constraints in the curriculum, large number of students and limited resources often make it difficult to conduct outdoor or activity- based lessons. Weather conditions and rigid school schedules also pose problems.

Still, I try to integrate small eco-focused tasks whenever possible."

Teacher-3: "One of the major challenges is time limitation. The syllabus is vast and activity based lessons need more time. Another challenge is lack of proper outdoor space in some schools. So conducting nature observation tasks becomes difficult. Also, some students are not used to reflective eco activities, so it takes time to guide them."

5. What suggestions do you have for effectively integrating eco-pedagogy into the teaching of literary items in the future?

Teacher-4: "I believe schools should be providing more flexibility, training and outdoor learning spaces. The curriculum should highlight texts that contain environmental themes. Eco-pedagogy simple nature based reflection tasks or local ecological discussions can make literature teaching more meaningful and student centered."

Teacher-5: "I think teacher needs training and clear guidelines on how eco-pedagogy can be integrated without disturbing the curriculum. Schools can allocate at least one eco activity per unit, even if it is short. Using local examples like community forests, rivers and agriculture field can make lesson more effectible. Even simple tasks, such as keeping a nature reflection journal can help students connect deeply with literary text."

Major findings

The empirical evidence from both the quantitative and qualitative data strongly supports the effectiveness and positive reception of integrating eco- pedagogical techniques into literature lessons. Major findings of the study are as listed below:

a. Most of the teachers use eco-pedagogical methods frequently while teaching poems.
b. The most common practices are linking poems to real environmental issues and highlighting ecological themes and symbolism. However, practical, experiential activities like organizing nature-based activities were reported at a low rate.
c. Experienced teachers confirm that they integrate eco- pedagogical activities like outdoor observation, nature-based reflection, and linking literary text to real-life ecological issues to make lessons more meaningful and relevant.
d. A significant majority of students agreed that these teaching approaches help them better understand literary items.
e. Student engagement is significantly high when environmental topics are included.
f. Majority of students reported noticing an improvement in their environmental awareness either "significantly" or "to some extent" having high level of confidence.
g. Teachers identified key structural and logistical constraints, including time constraints in the curriculum, the vastness of the syllabus, large class sizes, limited resources, and the lack of proper outdoor space in some schools.

Conclusion

The findings of research conclude that the use of eco-pedagogical techniques in teaching literary items at the secondary level is not only feasible but also highly effective. This approach successfully bridges the gap between English literary concepts and the real world, transforming poetry lessons from mere memorization into an engaging, critical, and relevant learning experience that promotes both language proficiency and ecological consciousness. Despite challenges reported by teachers, the students' strong positive reception, increased engagement, and improved environmental awareness validate eco-pedagogy as a valuable and necessary pedagogical tool for the future of English language teaching in Nepal.

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Health Care Seeking Behaviour and Willingness for Sexually Transmitted Infections Service Utilization among Undergraduate Students

Ashim Subedi[1], Asmita Acharya[2], Pooja Bhandari[3]
[1]Lecturer, Manipal Teaching Hospital, Pokhara, Nepal
[2]Staff Nurse, Gandaki Medical College, Pokhara, Nepal
[3]Assistant Professor, School of Health and Allied Sciences, Pokhara University, Pokhara, Nepal

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Corresponding Author:
pooja.bhandari@pu.edu.np

Abstract

Sexually transmitted infections (STIs) continue to be a major global public health concern and are among the five most common reasons why young adults seek healthcare services. Although young adults are generally more sexually active and therefore at higher risk of STIs, their healthcare-seeking behavior and use of sexual and reproductive health services remain limited. This cross-sectional study examined healthcare-seeking behaviour and willingness to use STI-related services among 115 undergraduate students at Pokhara University, Nepal. A proportionate stratified random sampling technique was used to select participants from different faculties, and the lottery method was applied to select students within each semester. Data were collected using a self-administered structured questionnaire. The data were analyzed using SPSS version 23 with descriptive statistics and chi-square tests to examine associations. The mean age of the respondents was 21.23 ± 1.56 years, and 53.9% were male. None of the respondents reported having current symptoms of STIs. Most students (84.3%) expressed willingness to use STI-related health services. Statistical analysis showed significant associations between willingness to use STI services and gender ($\chi^2 = 5.867$, $p = 0.015$), as well as educational programme ($\chi^2 = 6.329$, $p = 0.012$). These findings suggest the need for targeted and inclusive educational and awareness programme to encourage the use of STI services among undergraduate students.

Introduction

Sexually transmitted infections are a group of clinical conditions caused by various pathogens and are mainly transmitted through sexual contact (Workowski & Bolan, 2015). These infections are a major cause of morbidity and mortality worldwide (Van Gerwen et al., 2022). If left untreated, these infections can lead to serious health complications such as pelvic inflammatory disease, ectopic pregnancy, infertility, chronic pelvic pain, arthritis, and neurological, cardiovascular, and dermatological conditions (de Wit et al., 2023).In addition, untreated STIs increase the risk of acquiring and transmitting human immunodeficiency virus (HIV), which further increases their public health significance (Grant et al., 2020). Therefore, sexually transmitted infections (STIs) remain an important global public health challenge, affecting the sexual, reproductive, and mental health of individuals across different age groups and socioeconomic backgrounds(Teshale et al., 2025). By 2021, more than 374 million new cases of STIs were reported worldwide, and in developing countries these infections account for over 17% of the economic losses related to illness(Teshale et al., 2025).

In 2017, an estimated 140,559 STI cases were reported nationally(Acharya et al., 2020). National surveillance data show that the overall adult HIV prevalence is 0.13%, but the prevalence is much higher in specific groups, including people who inject drugs (7.9%), transgender individuals (6.3%), men who have sex with men (5.5%), and female sex workers (1.5%) (HIV/AIDS Data Hub, 2016). In addition to HIV, other STIs are also common . Despite this burden, access to and use of STI services remain limited. Although most health facilities in Nepal are expected to provide STI-related services, the overall readiness to deliver these services is low, with a reported average readiness score of 26.2% (Shakya et al., 2018).Together, these factors highlight the importance of understanding healthcare-seeking behaviour and willingness to use STI services in Nepal.

Delayed or absent healthcare-seeking not only worsens individual prognosis but also sustains transmission chains within communities. Willingness to utilize STI services is a key antecedent to actual service uptake and is shaped by perceived susceptibility, perceived severity, anticipated stigma, service accessibility, and confidence in healthcare provider confidentiality(Jones et al., 2013).

Despite growing recognition of STIs as a public health priority in Nepal, empirical evidence on healthcare-seeking behaviour and willingness to use STI services among university students remains limited.

The Health Belief Model (HBM), originally developed by Rosenstock (1974) and subsequently expanded by Becker and colleagues, provides the theoretical scaffold for this study. The HBM posits that an individual's likelihood of taking a health action (Jones et al., 2013).Applied to STI service utilization among university students, the HBM predicts that willingness to seek care is greatest among those who perceive themselves as susceptible to STIs, who appreciate the severity of untreated infections, who believe that STI services offer genuine benefits, and who perceive relatively few barriers to accessing those services. The findings of the present study are interpreted through this lens throughout.

A study among Kenyan adolescent girls and young women found that limited sexual experience did not preclude exposure to STIs, highlighting the importance of universal rather than risk-stratified service provision (Yuh et al., 2020). Another study in Ethiopia, among university students reported that 11.4% had a history of STI symptoms, and 85.8% perceived themselves at high risk of contracting an STI(Shimie et al., 2022).

In Bangladesh, a qualitative study by (Gourab et al., 2019) exploring willingness to receive STI services among key populations found that perceived confidentiality of services was the single most powerful predictor of willingness, above and beyond service availability or cost. Participants feared that their health-seeking behaviour would be disclosed to family, employers, or community members were significantly less likely to seek STI care.

A cross-sectional study in Kathmandu among 406 Grade 11 and 12 students found that only 17.2% had used SRH services in the preceding year(Pokhrel et al., 2020). Another study showed that utilization was higher among females (19.8%) than males (15.3%).Likewise, (Acharya et al., 2020) conducted a cross-sectional study using data from the Nepal Health Facility Survey (NHFS) 2015 to assess the availability and readiness of health facilities to provide STI and HIV testing and counselling (HTC) services in Nepal. A total of 963 health facilities were included, with a response rate of 97%.The overall readiness score was low for STI services (26.2%) compared to HTC services (68.9%).

Moreover, (Gautam et al., 2025)conducted a cross-sectional, mixed-method study in Godawari Municipality to examine the availability and utilization of adolescent sexual and reproductive health services (ASRHS) among adolescents aged 15–19 years (n = 416) in three government secondary schools and three local health institutions. The findings revealed critically low levels of both awareness and utilization of adolescent sexual and reproductive health (ASRH) services; only 13.22% of respondents had ever utilised ASRH services, and approximately one-third (30.63%) had not heard of Adolescent Friendly Health Services (AFHS).

(Mattebo et al., 2019) in an interview-based qualitative study conducted in Nepal, found that limited knowledge among adolescent girls, compounded by the persistent inadequacy of adolescent-friendly health services, constitutes a significant barrier to accessing sexual and reproductive healthcare in Nepal.

The barriers include limited knowledge about STIs, low perception of personal risk, concerns about privacy and confidentiality, social stigma, lack of adolescent-friendly health facilities, and shortages of trained health personnel(Abuosi et al., 2022; Gourab et al., 2019) . In Nepal, research has shown that the use of sexual and reproductive health services among adolescents and young adults remains low. Previous studies report that only about 13.22% to 17.2% of young people have ever used such services(Gautam et al., 2025); (Pokhrel et al., 2020). In addition, health facilities in Nepal often face challenges such as low readiness to provide STI services and the limited implementation of adolescent-friendly service standards(Acharya et al., 2020). Similarly, a study by (Jayasinghe et al., 2025) found that only 13.9% of unmarried young adults in Kathmandu had used sexual health services in the previous 12 months.

Despite these body of knowledge, there are still important gaps in the existing research. Addressing this evidence gap, the present study was therefore conducted to assess healthcare-seeking behaviour and willingness regarding STI service utilization among undergraduate students of Pokhara University, Nepal. The findings are expected to provide useful evidence to support the development of more accessible, acceptable, and youth-friendly STI services for University students.

Methodology

A descriptive cross-sectional study design was employed to examine healthcare-seeking behaviour and willingness regarding STI service utilization among undergraduate students of Pokhara University, Nepal. The target population comprised all undergraduate students enrolled in the four schools(School of Business, School of Development and Social Engineering,School of Engineering and School of Health and Allied Sciences) Pokhara University during the study period who were willing to participate and present on the day of data collection.

The minimum sample size was estimated using the single population proportion formula: $n = Z^2pq/d^2$, where $Z = 1.96$ (95% confidence level), $p = 0.086$ (8.6% prevalence of STI-related health-seeking from a previous study at Dhulikhel Hospital, Nepal(Dev et al., 2021) , $q = 1 – p$, and $d = 0.05$ (5% margin of error). Adding a 10% non-response rate yielded a minimum sample of 115. This was further validated using the finite population correction formula given the known population of 2,443, resulting in a final sample of 115 students (sampling fraction ≈ 4.7%).

Proportionate stratified random sampling was used to ensure representation across all four schools and all active semesters. Strata were defined by school and semester. Within each stratum, the requisite number of participants was allocated proportional to stratum size. Individual participants were then selected from each stratum using simple random sampling via the lottery method.

A structured self-administered questionnaire was developed based on the research objectives, a systematic review of the relevant literature, and expert consultation. The questionnaire comprised three sections. Section I (10 items) collected socio-demographic information including age, sex, religion, ethnicity, family type, current residence, marital status, educational programme, current semester, and parental education and occupation. Section II (8 items) assessed healthcare-seeking behaviour related to STIs, covering symptom experience, perceived risk, preferred information sources, preferred treatment facilities, and perceived service availability. Section III (8 items) evaluated willingness to utilize STI services using a 5-point Likert scale (1 = Strongly Disagree to 5 = Strongly Agree). Negative statements were reverse-scored. Willingness was operationally defined as a composite score ≥ the mean score across all eight items; scores below the mean were classified as unwillingness.

Content validity was assessed through expert review and necessary modifications were incorporated based on their feedback. A pilot study was conducted among 10 undergraduate students who were not included in the main study to assess clarity, comprehensibility, and average completion time. Internal consistency of the willingness scale was evaluated using Cronbach's alpha, yielding a coefficient of 0.74, indicating acceptable reliability (Tavakol & Dennick, 2011).

Data were collected over a four-week period in the month of September 2024 by the principal investigator, assisted by two trained research assistants. Questionnaires were administered in the participants' respective classrooms following a brief explanation of the study's purpose and procedures. Participants were assured of anonymity and the voluntary nature of their participation. Completed questionnaires were collected immediately upon completion to ensure a high response rate and to minimize the risk of data loss.

Completed questionnaires were reviewed for completeness and consistency prior to data entry. Data were entered into Epidata version 3.1 using a pre-validated data entry template and subsequently exported to IBM SPSS version 23.0 for analysis. Descriptive statistics—including frequencies, percentages, means, and standard deviations—were computed for all study variables. Inferential analysis employed Pearson's chi-square test to examine associations between the dichotomous willingness outcome and categorical independent variables. Fisher's exact test was applied where any expected cell frequency was less than five. All statistical tests were two-tailed, and a p-value < 0.05 was considered statistically significant.

Ethical Considerations

Ethical approval for the study was granted by the Institutional Review Committee (IRC) of Pokhara University (Reference No.: 176/2080/81). Written informed consent was obtained from each participant prior to data collection. Participation was entirely voluntary, and participants were explicitly informed of their right to withdraw at any stage without penalty. Confidentiality was safeguarded by assigning numerical codes to questionnaires in lieu of participant names. Data were stored securely and accessed only by the research team; they were used exclusively for the purposes of this study.

Result

Socio-Demographic Characteristics of Respondents

Table 1 summarizes the socio-demographic profile of the 115 participants. The mean age was 21.23 years (SD = 1.56), with ages ranging from 19 to 25 years; 55.7% were aged 21 years or younger. The majority (53.9%) were male. Almost all respondents identified as Hindu (91.3%), and the largest ethnic group was Brahmin/Chhetri (73.9%). More than two-thirds (73.9%) lived in nuclear families, and 53.9% resided with their immediate family during the study period. The overwhelming majority (98.3%) were unmarried.The majority (73.9%) were enrolled in non-medical programmes (business, engineering, or social sciences), while 26.1% were in medical or allied health programmes.

Table 1

Socio-Demographic Characteristics of Respondents (N = 115)

Variable	Frequency (f)	Percentage (%)
Age (years)		
≤ 21	64	55.7
> 21	51	44.3
Mean ± SD = 21.23 ± 1.56 (range: 19–25)		
Sex		
Male	62	53.9
Female	53	46.1
Religion		
Hinduism	105	91.3

Buddhism	10	8.7
Ethnicity		
Brahmin/Chhetri	85	73.9
Janajati	23	20.0
Others(Dalit and Madhesi)	7	6
Family Type		
Nuclear	85	73.9
Joint	28	24.3
Extended	2	1.7
Current Residence		
With family	62	53.9
Rented room	33	28.7
Hostel	18	15.7
With relatives	2	1.7
Marital Status		
Unmarried	113	98.3
Married	2	1.7
Educational Programme		
Non-medical	85	73.9
Medical	30	26.1

Note. Percentages may not sum to 100 due to rounding.

Table 2 describes parental education and occupation. Regarding maternal education, 53.0% of mothers could only read and write without formal schooling, and 37.4% had attained secondary-level education. For paternal education, half (50.4%) had completed secondary schooling. The most common paternal occupation was private service (40.0%), followed by government service (30.4%) and foreign employment (20.9%). The majority of mothers were homemakers (64.3%).

Table 2

Parental Information of Respondents (N = 115)

Variable	Frequency (f)	Percentage (%)
Mother's Educational Status		
Illiterate	11	9.6
Can read/write only	61	53.0
Formally educated (secondary level)	43	37.4

Father's Educational Status		
Illiterate	9	7.8
Can read/write only	48	41.7
Formally educated (secondary level)	58	50.4
Father's Occupation		
Private service	46	40.0
Government service	35	30.4
Foreign employment	24	20.9
Mother's Occupation		
Homemaker	74	64.3
Agriculture	17	14.8
Private service	13	11.3
Government service	11	9.6

Healthcare-Seeking Behaviour

Table 3 presents healthcare-seeking behaviour findings. None of the respondents reported having experienced STI symptoms at the time of the study (100%). The majority (70.4%) perceived themselves to be at no risk of contracting an STI; only 3.5% perceived their risk as high. When asked about preferred sources of STI information, equal proportions preferred online medical resources or websites (47.0%) and hospitals (47.0%). Regarding preferred treatment location, half (50.4%) would seek care at a government health facility and 49.6% at a private facility. The majority (83.5%) believed that STI services were available in their local area.

Table 3

Healthcare-Seeking Behaviour of Respondents (N = 115)

Variable	Frequency (f)	Percentage (%)
STI Symptoms Experienced		
None	115	100.0
Perceived Risk of Contracting STIs		
No risk	81	70.4
Low risk	17	14.8
Medium risk	13	11.3
High risk	4	3.5
Preferred Source for STI Information		
Online medical resources/website	54	47.0
Hospital	54	47.0
Teachers	4	3.5
Pharmacy	3	2.6

Preferred Facility for STI Treatment		
Government health facility	58	50.4
Private health facility	57	49.6
STI Services Available in Locality		
Yes	96	83.5
No	19	16.5

Willingness to Utilize STI Services

Table 4 presents Likert-scale responses to the eight willingness statements. Positive service-seeking attitudes were consistently strong: 67.8% of respondents strongly agreed they would seek hospital care if they developed STIs, and 46.1% strongly agreed they would seek advice even in the absence of symptoms. With respect to barriers, 58.3% strongly disagreed that STIs are incurable, 41.7% strongly disagreed with avoiding care due to embarrassment about exposing private body parts, and 42.6% disagreed that long waiting times would deter them. These patterns suggest that, while willingness to seek care is prevalent, time constraints, embarrassment, and perceived asymptomatic status remain notable deterrents for a minority.

Table 4

Willingness Regarding STI Service Utilization — Likert-Scale Responses (N = 115)

Statement	Strongly Disagree n (%)	Disagree n (%)	Neutral n (%)	Agree n (%)	Strongly Agree n (%)	Mean Index
I am willing to seek hospital treatment if I develop STIs in the future.	03 (2.6)	—	02 (1.7)	32 (27.8)	78 (67.8)	4.58
I am willing to seek treatment even though managing time may be difficult.*	08 (7.0)	10 (8.7)	35 (30.4)	26 (22.6)	36 (31.3)	3.63
I am willing to seek advice about sexual health issues even without symptoms.	07 (6.1)	05 (4.3)	06 (5.2)	44 (38.3)	53 (46.1)	4.14
*I would not seek treatment because I am not sexually active.	21 (18.3)	34 (29.6)	23 (20.0)	19 (16.5)	18 (15.7)	3.18
*I would not seek treatment because I	19 (16.5)	37 (32.2)	29 (25.2)	16 (13.9)	14 (12.2)	3.27

currently have no symptoms.						
*I would not seek treatment due to long waiting times.	40 (34.8)	49 (42.6)	16 (13.9)	06 (5.2)	04 (3.5)	4.00
*I would not seek treatment due to embarrassment about exposing private body parts.	48 (41.7)	41 (35.7)	19 (16.5)	02 (1.7)	05 (4.3)	4.09
*I would not seek treatment because STIs cannot be cured.	67 (58.3)	33 (28.7)	06 (5.2)	04 (3.5)	05 (4.3)	4.33

Note. Willingness was measured on a 5-point likert scale i.e. Strongly Agree = 5, Agree =4, Neutral=3, Disagree=2 and Strongly Disagree=1 for positive statement and Strongly Agree=1, Agree=2,Neutral =3, Disagree=4 and Strongly Disagree=5 for negative statement.

Statements marked with an asterisk (*) are negatively worded items; scores for these items were reversed prior to composite scoring. '—' denotes no response in that category.

As shown in Table 5, composite Likert scores were dichotomized at the mean (score = 3), In this study willingness is classified as:Willingness : ≥mean score,Unwillingness : <mean score.84.3% of respondents were classified as willing to utilize STI services and 15.7% as unwilling.

Table 5

Willingness Status Regarding STI Service Utilization (N = 115)

Willingness Status	Frequency (f)	Percentage (%)
Willing (≥ mean score)	97	84.3
Unwilling (< mean score)	18	15.7
Total	115	100.0

Note. Composite willingness score mean = 3.

Association Between Willingness and Selected Variables

Table 6 presents the results of chi-square analyses examining associations between willingness to utilize STI services and selected demographic and academic variables. Two variables demonstrated statistically significant associations with willingness. Gender was significantly associated with willingness ($\chi^2 = 5.867$, df = 1, $p = 0.015$): 91.9% of female respondents were willing compared with 75.5% of male respondents. Educational programme was also significantly associated with willingness ($\chi^2 = 6.329$, df = 1, $p = 0.012$): a higher proportion of non-medical students (89.4%) were willing compared with medical students (70.0%). No statistically significant associations were found between willingness and age, religion, ethnicity, family type, current residence, marital status, or knowledge level (all $p > 0.05$).

Table 6

Associations Between Willingness Status Regarding STI Service Utilization and Selected Variables (N = 115)

Variable	Willing n (%)	Unwilling n (%)	χ^2	p-value
Age (years)				
≤ 21	53 (82.8)	11 (17.2)	0.258	0.612
> 21	44 (86.3)	07 (13.7)		
Gender				
Female	57 (91.9)	05 (8.1)	5.867	0.015*
Male	40 (75.5)	13 (24.5)		
Religion				
Hindu	89 (84.7)	16 (15.3)	0.157	0.692
Buddhist	08 (80.0)	02 (20.0)		
Ethnicity				
Brahmin/Chhetri	72 (84.7)	13 (15.3)	0.032	1.000#
Others	25 (83.3)	05 (16.7)		
Family Type				
Nuclear	73 (85.9)	12 (14.1)	0.581	0.559#
Joint/Extended	24 (80.0)	06 (20.0)		
Current Residence				
With family	52 (83.9)	10 (16.1)	0.023	0.879
Others	45 (84.9)	08 (15.1)		
Marital Status				
Married	02 (100.0)	00 (0.0)	0.378	1.000#
Unmarried	95 (84.1)	18 (15.9)		
Educational Programme				
Non-medical	76 (89.4)	09 (10.6)	6.329	0.012*
Medical	21 (70.0)	09 (30.0)		
Knowledge Level				
Adequate	52 (89.6)	06 (10.3)	2.497	0.114
Inadequate	45 (78.9)	12 (21.1)		

Note. χ^2 = chi-square; df = 1 for all tests; critical χ^2 value at df = 1 is 3.841. * $p < .05$. # Fisher's exact test applied due to expected cell frequency < 5.

Discussion

This cross-sectional study examined healthcare-seeking behaviour and willingness to utilize STI services among 115 undergraduate students of Pokhara University, Nepal. The findings provide important insights into the attitudes, perceived risks, information-seeking preferences, and service-seeking intentions of this population, with direct implications for programme planning, health communication, and health promotion within university settings. The discussion below interprets key findings in the light of the theoretical framework and the available comparative literature, and situates them within the broader SRH context of Nepal.

The mean age of participants was 21.23 ± 1.56 years, which is consistent with the expected demographic profile of undergraduate students and comparable to findings from a Nigerian study that reported a mean age of 20 ± 4 years among a similar university population(Shimie et al., 2022). This age group falls squarely within the 15–24 year bracket identified by WHO as being at the highest risk of STI acquisition, owing to a combination of biological susceptibility and behavioral risk factors. The predominance of male participants (53.9%) reflects the existing gender imbalance in certain faculties included in the study, particularly engineering, and should be accounted for in the interpretation of sex-dis-aggregated findings.

The overwhelming representation of Brahmin/Chhetri ethnicity (73.9%) mirrors the broader demographic composition of the Gandaki Province and is consistent with patterns documented in other Nepali studies(Pokhrel et al., 2020). While this limits the ethnic diversity of the sample, it is ecologically valid for the setting. The high proportion of Hindu respondents (91.3%) reflects the national religious majority and has important implications for culturally competent health communication. Hindu social norms in Nepal tend to treat sexuality as a private and potentially shameful domain, particularly outside marriage, and these norms are known to inhibit open discussion of STIs within families, peer groups, and educational settings (Tiwari et al., 2021).

In this study, none of the participants reported STI symptoms, and the majority (70.4%) perceived themselves to be at no risk of contracting STIs.This finding contrasts starkly with data from Ethiopian university students, among whom 11.4% had a documented history of STI symptoms and 85.8% perceived themselves at high risk (Shimie et al., 2022). The strikingly low perceived risk observed in the present study 70.4% reporting 'no risk'—is therefore of significant concern. Within the Health Belief Model framework, low perceived susceptibility is one of the most powerful predictors of failure to engage in preventive health behaviour (Alamer, 2024).

The equal preference for online medical resources or websites and hospitals as information sources (47.0% each) reflects a generational characteristic hybrid information-seeking pattern. The high preference for digital sources aligns with findings from Ethiopia (56.9%; (Shimie et al., 2022) and signals the importance of investing in high-quality, culturally relevant, and Nepali-language digital health content.

The finding that 84.3% of respondents were willing to utilize STI services is encouraging and exceeds the 77.9% reported among Chinese university students in a comparable study(Fu et al., 2018). This high level of expressed willingness may reflect increased SRH awareness following national and university-level health campaigns, the influence of health literacy components in certain curricula (particularly in SOHAS), and possibly a cohort effect among students who have had greater exposure to digital health information than preceding generations. The literature consistently demonstrates that positive intentions do not always translate into behaviour, particularly in sensitive health domains characterized by stigma and confidentiality concerns (Handebo, 2020).

The analysis of individual Likert items reveals important nuances beneath the aggregate willingness figure. While 67.8% strongly agreed they would seek hospital treatment if they developed STIs, the endorsement of proactive help-seeking such as seeking advice in the absence of symptoms was more modest (46.1% strongly agreed). This gap between reactive and proactive willingness is theoretically coherent within the HBM framework: reactive care-seeking is triggered by perceived symptoms (a salient cue to action), while proactive screening requires internalize perceived susceptibility that motivates action in the absence of symptoms. Given that the majority perceived themselves as being at no risk, the barrier to proactive screening is particularly high. Efforts to close this gap should focus on normalizing asymptomatic screening for example, through university health service campaigns that frame routine STI testing as a responsible and health-affirming behaviour, rather than as a response to perceived deviance or illness.

The barrier items yield further practical insights. The finding that 41.7% strongly disagreed with avoiding care due to embarrassment about exposing private body parts, while encouraging, implies that 58.3% did not strongly disagree suggesting that embarrassment remains a potentially significant deterrent for a substantial minority. Similarly, while 42.6% disagreed that waiting times would deter them, the remainder (57.4%) were neutral or in agreement, indicating that service efficiency is a real consideration.

The significant association between gender and willingness ($p = 0.015$) with females demonstrating considerably higher willingness (91.9%) than males (75.5%) is broadly consistent with the wider literature, which documents that women are generally more proactive in health-seeking behaviour across a range of conditions and settings (Abuosi et al., 2022) .

However, this finding diverges from the Chinese study by (Fu et al., 2018), in which no significant sex-based difference in HTC willingness was observed. In the Nepali context, social norms of masculinity which valise stoicism, self-sufficiency, and the avoidance of vulnerability may be particularly inhibitory of male health-seeking behaviour(Tiwari et al., 2021).

The significant association between educational programme and willingness ($p = 0.012$) with non-medical students showing higher willingness (89.4%) than medical students (70.0%) is a counter intuitive and theoretically interesting finding. Within the HBM framework, one might expect students with greater biomedical knowledge of STIs to demonstrate higher willingness, consistent with an enhanced appreciation of perceived severity and the benefits of treatment. The observed inverse relationship may reflect several competing mechanisms. First, medical students may be more acutely aware of the institutional complexities surrounding STI care within their own training settings, including concerns about confidentiality when interacting with known healthcare providers or faculty members, and the potential reputation consequences of being seen seeking STI services within a small professional community. Second, the high clinical workload and time pressures faced by medical students may exacerbate the 'time management difficulty' barrier identified in Table 5.

Third, it is possible that medical students' heightened awareness of the limitations of available diagnostic and treatment options including awareness of antimicrobial resistance, the imperfect sensitivity of available tests, and the challenges of partner notification—creates a form of informed pessimism that attenuates willingness. Finally, response bias cannot be excluded: medical students may be more cautious in endorsing service-seeking intentions in a research context, aware of the social desirability of such responses. This finding warrants further investigation through qualitative methods that can explore the subjective reasoning of medical students regarding STI service utilization in greater depth. It also has direct programmatic implications: medical and allied health faculties should explicitly address STI-related stigma, confidentiality procedures, and the professional duty of care in their SRH curricula.

The absence of significant associations between willingness and age, religion, ethnicity, family type, marital status, and knowledge level suggests that, in this population, demographic and structural factors are less determinative of STI service willingness than sex and educational background. The non-significant association with knowledge level is particularly noteworthy and challenges simplistic assumptions about the power of information provision to change health behaviour. The literature on the knowledge–attitude–practice (KAP) gap consistently demonstrates that knowledge is necessary but not sufficient for behaviour change: students may know about STIs and yet feel unwilling or unable to seek services due to attitudinal, normative, or structural barriers(Shimie et al., 2022). Effective interventions must therefore be multi-component in design, addressing knowledge, attitudes, social norms, and structural access simultaneously.

Conclusion

Undergraduate students demonstrated a high willingness to use STI services, although most did not perceive themselves to be at risk of acquiring STIs and no symptoms were reported. Willingness to seek STI care was found to vary by gender and academic discipline, with higher levels observed among female and non-medical students. These findings highlight the importance of implementing gender-responsive and youth-friendly interventions, along with strengthening sexual and reproductive health education. Improving access to campus-based and digital STI services, while addressing stigma and enhancing awareness, may encourage timely care-seeking and increase utilization of STI services among university students.

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Perceived Benefits and Impacts on Tourism Priorities in Begnas Lake Area

Dilli Ram Paudel
Lecturer, Triveni International College, Pokhara

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Corresponding Author:
paudeldrp5@gmail.com

Abstract

Begnas Lake, located in Pokhara Metropolitan City, represents an emerging tourism destination with significant potential for community-based and sustainable development. This study examines tourism promotion and development in the Begnas Lake Area through a quantitative cross-sectional design. Primary data were collected from 77 tourism stakeholders, including operators of boat services, restaurants and hotels, using structured questionnaires. Descriptive statistical analysis and Pearson correlation were employed to evaluate tourism activities, stakeholder participation and satisfaction, spending behavior, and economic contribution. The findings reveal that tourism in Begnas Lake is predominantly attraction-based, with boat services forming the core activity. Stakeholders recognize moderate economic benefits, particularly in terms of business growth and employment generation; however, dissatisfaction is evident regarding infrastructural development and local authority effectiveness. Community participation emerged as a strongly supported priority for future tourism planning. Furthermore, positive correlation was found between average tourist stay duration and per-day spending indicating that extending visitor stay may enhance local economic contribution. Despite observable economic gains, income impact remains incremental rather than transformative, and concerns regarding environmental sustainability and cost of living persist.

Introduction

Tourism has emerged as one of the most significant drivers of economic and social transformation in developing nations, particularly in regions endowed with natural and cultural assets (UNWTO, 2023). Nepal, renowned for its Himalayan landscapes, biodiversity, and rich cultural heritage, has increasingly positioned tourism as a pillar of its national development strategy (Ministry of Tourism, Nepal, 2021). Within this national context, lake destinations such as Begnas Lake Area (BLA) in the Gandaki Province represent a distinctive category of nature-based tourism sites that attract both domestic and international visitors. Begnas Lake, the second largest lake in the Pokhara Valley, has witnessed growing tourist footfall alongside expanding hospitality infrastructure. However, the rapid growth of tourism in such ecologically sensitive and community-inhabited areas raises fundamental questions about sustainability, equitable benefit distribution, and cultural preservation (Gurung & Seeland, 2008). Community perceptions of tourism's costs and benefits are central to understanding whether development trajectories are inclusive and environmentally responsible. This study investigates perceived benefits, negative impacts, improvement priorities, and local community contributions to tourism development in BLA, drawing on structured survey data from resident stakeholders. The findings contribute to the broader literature on community-based tourism and sustainable rural tourism in South Asian contexts.

Tourism has emerged as one of the world's most dynamic and rapidly expanding economic sectors which contributes significantly to employment generation, foreign exchange earnings, and regional development. Over the past few decades, tourism has surpassed many traditional industries in terms of growth and global economic contribution (Pao, 2005). Apart from its economic significance, tourism also plays a vital role in fostering cultural exchange, enhancing international understanding, and promoting regional integration. As a result, tourism promotion and development have become priorities of central policy for many countries, particularly those rich in natural and cultural resources. In recent years, the integration of digital marketing, branding strategies, and sustainable development principles has reshaped the way destinations position themselves in an increasingly competitive global tourism market (Buhalis & Law, 2008; Pike & Page, 2014). However, unplanned tourism development can lead to environmental degradation, cultural commodification, and unequal distribution of benefits, underscoring the need for sustainable and community-based approaches (Mowforth & Munt, 2015; Weaver, 2006). Tourism promotion and tourism development are interrelated processes that shape destination competitiveness, community wellbeing, and long-term sustainability. Tourism promotion primarily refers to strategic communication and marketing efforts aimed at attracting visitors and influencing destination image, while tourism development encompasses improvements in infrastructure, service quality, institutional coordination, and resource management (Pike & Page, 2014). In contemporary tourism systems, promotion has increasingly shifted toward digital platforms, destination branding, and online engagement. Information and communication technologies have transformed the way destinations reach potential visitors, enabling real-time interaction, user-generated content, and global visibility even for smaller or peripheral locations (Buhalis & Law, 2008). However, scholars caution that promotional expansion must be matched by service readiness and sustainable management. When promotional strategies outpace infrastructural development, destinations risk environmental stress, overcrowding, and declining satisfaction (Weaver, 2006). This tension is particularly relevant in environmentally sensitive areas such as lake-based tourism destinations.

Sustainable tourism development integrates economic growth with environmental protection and socio-cultural integrity. Rather than focusing solely on visitor numbers, sustainable frameworks emphasize equitable benefit distribution, resource conservation, and community empowerment (Mowforth & Munt, 2015). Community participation is widely regarded as a foundational element of sustainable tourism because it strengthens local ownership, enhances accountability, and improves alignment between development initiatives and local needs. Without meaningful participation, tourism development may generate uneven benefits, social tension, or resistance from host communities. Geographical and development-oriented perspectives further illuminate how tourism operates within spatial and structural contexts. Pearce (1979) emphasized the spatial dimensions of tourism supply, demand, and movement patterns, highlighting that destination performance is influenced by connectivity, infrastructure, and regional integration. Later discussions of diffusion and dependency paradigms underscored how tourism can either stimulate regional economic diffusion or reinforce structural inequalities between core and peripheral areas (Oppermann, 1993; Pearce, 1995). In developing-country contexts, tourism may generate economic opportunities while simultaneously exposing destinations to environmental pressures and external market dependence (Crang, 1997; Brown & Hall, 2000).

Economic opportunity remains a central justification for tourism development strategies. Tourism contributes to employment generation, business growth, tax revenues, and foreign exchange earnings (Telfer, 2008). However, the realization of these economic opportunities depends on adequate infrastructure, effective governance, and sustained visitor demand. Pike and Page (2014) argue that destination competitiveness is shaped not only by promotional capacity but also by institutional coordination and product development. Economic contribution at the local level is therefore mediated by the quality of tourism activities, the strength of local value chains, and the extent of community involvement. Tourism activities themselves represent the operational core of destination systems. Activities such as boating, hospitality services, cultural experiences, and recreational offerings shape the visitor experience and influence spending behavior. The diversity and quality of tourism activities affect both length of stay and overall satisfaction, which in turn influence economic outcomes. In smaller destinations, activity structure often determines whether tourism functions primarily as a short-visit attraction or as a longer-stay experience with greater economic contribution. The relationship between tourism activities and economic impact is therefore central to understanding local development trajectories. Infrastructure development plays a foundational role in enabling tourism growth. Transportation networks, sanitation facilities, safety systems, communication infrastructure, and public utilities directly influence visitor comfort and perceived destination quality (Christie, 2008). Inadequate infrastructure can constrain tourism potential even when promotional efforts are strong. Particularly in emerging destinations, infrastructure readiness often determines whether economic opportunities can be fully realized. Without adequate facilities and institutional support, promotional efforts may fail to translate into sustained benefits. Environmental awareness and stewardship have become increasingly critical in tourism development, especially in ecologically sensitive settings. Lake destinations are particularly vulnerable to pollution, ecosystem disruption, and resource overuse. Weaver (2006) emphasizes that unmanaged tourism expansion can degrade environmental assets that form the basis of destination attractiveness. Environmental awareness among stakeholders, including business operators and community members, is therefore essential for sustainable outcomes. Eco-friendly practices, waste management, and responsible activity regulation contribute not only to environmental protection but also to long-term destination competitiveness.

Community-based tourism development frameworks integrate these elements by positioning local stakeholders as central actors in tourism planning and implementation. Community participation influences decision-making transparency, equitable benefit distribution, and social acceptance of tourism initiatives (Mowforth & Munt, 2015). Where participation is limited, dissatisfaction may arise even if economic indicators show moderate improvement.

Satisfaction with tourism development thus reflects not only economic outcomes but also perceptions of fairness, inclusion, and institutional responsiveness. In developing countries such as Nepal, tourism has long been viewed as a strategic development sector. Nepal's tourism industry draws on natural landscapes, cultural heritage, and religious significance, contributing to employment and foreign exchange earnings (Kunwar, 2003; Chaulaghain, 2013). However, tourism development in Nepal has been uneven across regions. While major destinations such as Kathmandu and Pokhara have experienced substantial growth, emerging and peripheral destinations often face infrastructural gaps, limited promotion, and insufficient institutional coordination. Christie (2008) underscores that foundational infrastructure, safety systems, and communication networks are critical prerequisites for sustainable tourism performance. Within the Pokhara region, Begnas Lake has gained attention as a potential eco-tourism and community-oriented destination. Development initiatives have proposed improvements in connectivity, recreational infrastructure, and accommodation facilities. However, concerns regarding environmental sustainability and institutional capacity persist. The introduction of motorized boating and increasing visitor flows have raised questions about ecological balance and long-term sustainability (Nepali Times, 2023). At the same time, local stakeholders continue to seek economic opportunities from tourism expansion.

Currently, there is a lack of substantial literature on Begnas Lake that is empirical and comprehensive in its study of stakeholder perceptions, economic contribution, and satisfaction levels. The literature available is mostly descriptive and focuses on development proposals and potential for tourism. There is a lack of integrated studies that investigate how economic potential, community participation, tourism activities, infrastructural development, and environmental awareness combine to influence perceptions of tourism benefits, satisfaction with tourism development, and economic contribution. Additionally, there is a lack of empirical research on how different demographic variables, such as age, income, gender, and education level, influence perceptions and evaluation of tourism development at a local level. In light of such gaps, the perspective of integrated community-based tourism development is particularly pertinent. This is because it acknowledges the fact that economic opportunities must be accompanied by enough infrastructure and variety in tourism activities, environmental awareness is crucial for sustainability, and community participation is significant for both satisfaction and perceived benefits. At the same time, demographic factors may influence how stakeholders view the outcomes of tourism and its development. In Nepal, tourism is a cornerstone of the national economy and has been historically linked to pilgrimage, trade, and exploration routes through the Himalayas. Kunwar (2003) notes that tourism in Nepal is not merely a modern economic activity but an extension of long-standing cultural and spiritual traditions. The country's diverse natural landscapes, rich cultural heritage, and unique socio-cultural practices provide immense potential for tourism development. Tourism contributes substantially to employment creation and foreign exchange earnings and supports broader socio-economic development (Christie, 2008; Chaulaghain, 2013). Despite this potential, tourism development in Nepal is uneven, with many destinations suffering from inadequate infrastructure, limited promotion, and weak institutional coordination.

Begnas Lake, located within Pokhara Metropolitan City, is one of the underdeveloped but promising tourist spots. Begnas Lake is known for its natural beauty, cultural importance, and environmental significance. It is also a promising site for developing eco-tourism, cultural tourism, and community-based tourism. Although this site is attracting a growing number of domestic and foreign tourists, there is a lack of effective efforts to develop and promote tourism. Existing infrastructure, accommodation facilities, and recreational services are insufficient to fully capitalize on the area's tourism potential, and concerns regarding environmental sustainability-such as ecosystem disturbance and pollution-are becoming increasingly prominent (Nepali Times, 2023). Although several studies and development initiatives have addressed tourism development in Nepal and the Pokhara region, there is a notable lack of empirical research focusing specifically on tourism promotion strategies, infrastructure development, and community involvement in the Begnas Lake area. Most existing studies emphasize broader regional tourism trends, leaving localized destinations underexplored (Brown & Hall, 2000). This gap limits the ability of policymakers and planners to design targeted, sustainable tourism interventions for emerging destinations like Begnas Lake.

The relationship between tourism development and host communities has been extensively examined through the lens of social exchange theory, which posits that residents support tourism when they perceive its benefits to outweigh its costs (Ap, 1992; Latkova & Vogt, 2012). In developing and transitional economies, infrastructure improvement and employment generation are consistently cited as primary perceived benefits of tourism expansion (Sharpley, 2014; Tosun, 2002). However, scholars have also documented a persistent tension between economic gains and socio-environmental costs, including environmental degradation, inflationary pressures on local economies, and erosion of cultural identity (Butler, 1980; Mbaiwa, 2003). In Nepal specifically, studies of lake and ecotourism destinations in the Gandaki region have highlighted infrastructure deficits and community marginalization in planning processes as recurring barriers to sustainable outcomes (Gurung & Seeland, 2008; Poudel et al., 2020). The importance of community participation in tourism decision-making is now well established in policy literature, with the United Nations Environment Programme (UNEP, 2005) and UNWTO (2023) both emphasizing that bottom-up governance models yield more equitable distributions of tourism revenues. Furthermore, the promotion of organic and locally produced goods as a tourism product has been identified as a key strategy for linking tourism growth to rural livelihoods (Saarinen, 2006). This study builds on this body of work by empirically examining community-ranked priorities and contributions in the BLA context. Thus, the purpose of this study is to explore the development of tourism promotion and development in the Begnas Lake area, with a special focus on the current development of infrastructure, promotion, online marketing, and the involvement of the local community. Through this process of identifying the challenges and opportunities, the aim of this study is to contribute to the existing literature on sustainable tourism development in developing countries. Based on the literature the research framework is developed as follows:

Research Framework

Independent Variables

- Economic Opportunities
- Community Participation
- Tourism Activities
- Infrastructural Development
- Environmental Awareness.

→

Dependent Variable

- Perceived Tourism Benefits.
- Satisfaction with Tourism Development
- Economic Contribution

Figure 1: Research framework

Methodology

This research employed a quantitative cross-sectional design to examine tourism promotion and development in the Begnas Lake Area (BLA), located in Ward No. 31 of Pokhara Metropolitan City, Nepal. The study was conducted in mid-to-late December 2024 to capture recent tourism trends and stakeholder experiences in the area.

The target population consisted of stakeholders directly involved in tourism-related economic activities, including boat service operators, restaurants, and hotels. These stakeholders were selected because of their active engagement in tourism activities and their experiences with tourist behavior, infrastructure, and local economic development. Convenience sampling was employed due to accessibility constraints and the absence of a comprehensive sampling frame of tourism operators in the area.

A total of 77 completed questionnaires were collected and included in the final analysis (N = 77). Data were gathered through face-to-face administration of structured questionnaires. Participation was voluntary, and respondents were informed about the purpose of the study. No identifying personal information was collected, ensuring anonymity and confidentiality.

The data collection instrument was a structured questionnaire developed with reference to previous studies on tourism development, sustainable tourism, and community participation. The questionnaire consisted of five sections: demographic characteristics, tourism activity classification, perceptions of tourism development and promotion, satisfaction with tourism development, and tourism-related economic indicators. The perception section included eight statements measured on a five-point Likert scale ranging from strongly disagree (1) to strongly agree (5). These statements examined stakeholder perceptions regarding economic opportunities, community participation, tourism activities, infrastructural development, and environmental awareness in the context of tourism development.

The questionnaire also included ranking questions related to perceived tourism benefits, negative impacts, improvement priorities, and community contributions. In addition, respondents provided approximate estimates of average tourist stay duration and per-day tourist spending to assess tourism-related economic indicators.

The study examined stakeholder perceptions regarding economic opportunities, community participation, tourism activities, infrastructural development, and environmental awareness in relation to tourism development outcomes. Demographic variables such as age, gender, income, and education level were considered as contextual factors influencing stakeholder perceptions.

Cronbach's alpha was used to assess the internal consistency reliability of the eight perception statements. The resulting coefficient of 0.624 indicated acceptable reliability for exploratory social science research.

Microsoft Excel and SPSS were used for data analysis. Descriptive statistics, including frequencies and percentages, were used to summarize demographic characteristics and categorical responses. Means and standard deviations were calculated for Likert-scale items, while rank-wise frequency distributions were used to analyze perceived benefits, negative impacts, and improvement priorities. Pearson correlation analysis was conducted to examine the relationship between average tourist stay duration and per-day expenditure. Regression analysis was not performed because the study primarily focused on descriptive assessment of tourism development in the Begnas Lake Area.

This study is subject to certain limitations that should be acknowledged. First, the use of convenience sampling limits the generalizability of findings beyond the Begnas Lake Area. While the study provides valuable destination-specific insights, the results may not represent all tourism stakeholders in other contexts. Second, the cross-sectional design captures perceptions at a single point in time and does not account for seasonal or longitudinal variations in tourism dynamics. Third, economic indicators such as average stay duration and per-day spending were based on stakeholder estimates rather than direct visitor expenditure surveys.

Result

This section presents the findings derived from survey data collected from 77 respondents, encompassing descriptive statistics and correlation analysis of the study variables. The demographic profile of the respondents is first outlined, followed by an examination of the relationships among the key variables under investigation. The results provide a comprehensive basis for understanding the patterns and associations relevant to the study's objectives.

The demographic profile of respondents provides important contextual insight into the stakeholder structure of tourism in the Begnas Lake Area. Age distribution of respondents is presented in Table 1 below. The majority of respondents fall within economically active age groups, indicating that tourism activities are primarily supported by working-age stakeholders. Gender distribution is presented in Table 2, reflecting participation of both male and female stakeholders in tourism-related activities within the destination.

Table 1

Age Distribution of Respondents

	Age Group	Frequency	Percent
Age Group	Youths (Below 40)	44	57.14
	Middle-aged (40 - 60)	30	38.96
	Old-aged(Above 60)	3	3.90
Gender	Male	58	75.33
	Female	19	24.68%
Education	No Formal Education	3	3.90
	Primary Education	28	36.36
	Secondary Education	37	48.05
	Bachelor’s Degree	7	9.09
	Master’s Degree	2	2.60
Occupation	Tourism related business	69	89.61
	Farming	1	1.30
	Other businesses	4	5.19
	Students	3	3.90
	Total	77	100.00

Tourism-Based Activities in the Begnas Lake Area

To address the first objective - identifying tourism-based activities - respondents were asked to specify the primary tourism services operating in the area. The distribution of tourism-related activities is presented in Table 2.

From a theoretical perspective, this pattern aligns with Butler's Tourism Area Life Cycle (TALC) model (Butler, 1980), where destinations in early development stages are often dominated by core attraction activities with limited diversification of supporting infrastructure. The dominance of boat services indicates that tourism demand remains attraction-driven rather than experience-integrated. The limited accommodation share further supports the earlier argument that the destination is still in a developmental phase requiring infrastructural expansion to enhance visitor retention.

Table 2

Tourism Based Activities in Begnas Lake

Activities	Frequencies	Percentage
Boat Service	33	42.86
Hotel	16	20.78
Restaurant	28	36.36
Total	**77**	**100.00**

Boat services constitute the largest tourism activity (42.86%), followed by restaurant services (36.36%) and hotel establishments (20.78%). This distribution reveals that tourism in BLA is heavily centered on lake-based experiences rather than extended accommodation-based tourism. The relatively smaller proportion of hotel operations suggests that Begnas Lake functions more as a short-duration recreational site than as a full-scale overnight destination.

Perception of Tourism Development and Community Participation

The second objective sought to understand local participation and perceptions regarding tourism development. Reliability analysis of the eight perception statements yielded a Cronbach's alpha coefficient of 0.624, indicating acceptable internal consistency for exploratory social research.

Respondents' perception levels are summarized in Table 3.

Table 3

Perception level of locals in the Begnas Lake Area Tourism Development

Questions	N	Mean
There should be more community involvement in tourism planning and Development	77	4.60
The benefits of tourism outweigh the disadvantages in this area	77	3.96
The increase in tourism has led to higher income for local businesses	77	3.71
Tourism has created job opportunities for local residents	77	3.68
Tourism has improved the quality of life for local residents.	77	3.64
Regular training programs related to tourism development are arranged.	77	3.18
Tourism has led to better infrastructure (roads, electricity, water supply) in the area	77	2.75
Local authorities are effectively managing tourism development.	77	2.73

The strongest agreement was recorded for the statement advocating greater community involvement in tourism planning (Mean = 4.60). This result is particularly significant, as it reflects a clear demand for participatory governance in tourism development. Community-based tourism theory (Tosun, 2000; Mowforth & Munt, 2015) emphasizes that sustainable tourism outcomes depend heavily on inclusive planning processes. The high mean value suggests that stakeholders perceive current participation mechanisms as insufficient and desire more institutional engagement.

Respondents somewhat agreed that tourism has boosted local revenue (Mean = 3.71) and that its advantages outweigh its drawbacks (Mean = 3.96). These results show that economic benefits are acknowledged, albeit not with overwhelming support. In a similar vein, opinions about increased quality of life (Mean = 3.64) and job creation (Mean = 3.68) show cautious optimism.

However, perceptions decline sharply regarding infrastructural improvement (Mean = 2.75) and effectiveness of local authorities (Mean = 2.73).

These results are critical. They indicate that while tourism is recognized as economically beneficial, institutional governance and infrastructural development remain weak. This bolsters the claim made by Saayman et al. (2009) that infrastructure quality and governance efficacy are just as important to destination competitiveness as attraction strength.

The discrepancy between perceived economic benefit and low satisfaction with governance highlights a structural imbalance in tourism development - growth without adequate institutional coordination.

Satisfaction with Tourism Development

Stakeholder satisfaction levels provide deeper insight into community evaluation of tourism outcomes. Table 4 presents satisfaction responses across five dimensions.

Table 4

Satisfaction level of locals in Begnas Lake Area Tourism Development

Questions	Very satisfied	Satisfied	Neutral	Dissatisfied	Very Dissatisfied
How satisfied are you with the current tourism development in your area?	10.39%	14.29%	33.77%	31.17%	10.39%
Your voice and opinions are considered in tourism planning and development?	11.69%	16.88%	31.17%	27.27%	12.99%
What do you think about the role of local authorities in managing tourism?	10.39%	15.58%	33.77%	29.87%	10.39%
To what extent do you agree that tourism has brought economic benefits to the Begnas Lake area?	5.19%	22.08%	45.45%	22.08%	5.19%
How satisfied are you with the infrastructure development due to tourism in your area?	1.30%	25.97%	45.45%	25.97%	1.30%

A significant proportion of respondents reported neutral to dissatisfied positions regarding overall tourism development. For instance, only 24.68% reported being satisfied or very satisfied with current tourism development, while a substantial portion expressed dissatisfaction or neutrality. Similarly, dissatisfaction is evident in perceptions of local authority performance and infrastructure development.

These findings are consistent with governance-based critiques of tourism in developing destinations (Jamal & Getz, 1995), which emphasize that stakeholder exclusion often leads to moderate satisfaction levels even when economic benefits exist. The results suggest that tourism in BLA has not yet matured into an inclusive and coordinated development model.

Average Stay and Tourist Spending

The third objective examined the relationship between tourist stay duration and spending behavior. Pearson correlation analysis revealed a statistically significant positive correlation between average stay (in hours) and per-day spending ($r = 0.469$, $p < 0.01$), as presented in Table 5.

Table 5

Correlation between average stay and per day spending

Correlations

		Average Stay (hours)	Per Day Spending
Average Stay (hours)	Pearson Correlation	1	.469**
Per Day Spending	Pearson Correlation	.469**	1

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

This moderate positive correlation indicates that longer stay durations are associated with higher spending levels. Economically, this confirms that extending visitor retention could directly enhance revenue generation for local businesses.

The finding aligns with economic impact theory (Telfer, 2008), which suggests that tourism multiplier effects increase when visitor duration expands. Given that BLA currently appears to function as a short-stay attraction, policies focused on diversifying tourism products - such as eco-tours, cultural programs, or accommodation upgrades - may significantly increase local income generation.

Perceived Benefits, Negative Impacts, and Improvement Priorities

The table below presents respondents' rankings of the major benefits, negative impacts, improvement priorities, and community contributions related to tourism development in BLA.

Table 6

Ranking of Various Components in the tourism development in BLA

Regarding perceived benefits, improved infrastructure and facilities was ranked first by the largest share of respondents (n = 35, 45.45%), followed by growth of local businesses (n = 27, 35.06%). Increased employment opportunities (n = 8, 10.39%) and cultural exchange and awareness (n = 7, 9.09%) were ranked considerably lower, suggesting that tangible physical improvements to the area are more salient to community members than labor market gains or intercultural outcomes.

Rank	Questions	Count	Percentage
	Significant benefit of tourism in BLA		
1	Improved infrastructure and facilities	35	45.45
2	Growth of local businesses	27	35.06
3	Increased employment opportunities	8	10.39
4	Cultural exchange and awareness	7	9.09
	Negative impact of tourism in BLA		
1	Increased cost of living	41	53.25

2	Environmental degradation	25	32.47
3	Overcrowding and traffic congestion	6	7.79
4	Loss of cultural identity	4	5.19
	Improvement needed for tourism development in BLA		
1	Better infrastructure development	45	58.44
2	Encouraging tourism oriented organic products	23	29.87
3	More community involvement in decision-making	6	7.79
4	Quality improvement in tourist places/destination	3	3.90
	Contribution of Local Community in tourism development in BLA		
1	Supporting local businesses	38	49.35
2	Promoting eco-friendly practices	21	27.27
3	Participating in tourism planning	13	16.88
4	Preserving cultural heritage	5	6.49

Respondents identified improved infrastructure and facilities (45.45%) as the main perceived benefit of tourism, followed by growth of local businesses (35.06%). Employment opportunities (10.39%) and cultural exchange (9.09%) were considered less significant.

Among negative impacts, increased cost of living was the major concern (53.25%), followed by environmental degradation (32.47%). Overcrowding and traffic congestion (7.79%) and loss of cultural identity (5.19%) were reported less frequently.

Regarding tourism development priorities, most respondents emphasized better infrastructure development (58.44%), while promotion of tourism-oriented organic products (29.87%) ranked second. Community involvement in decision-making (7.79%) and improvement in tourist destinations (3.90%) received comparatively lower emphasis.

For community contributions, supporting local businesses was identified as the primary role (49.35%), followed by promoting eco-friendly practices (27.27%), participating in tourism planning (16.88%), and preserving cultural heritage (6.49%).

Discussion

The findings reveal an internally coherent but potentially tension-laden picture of tourism development in Begnas Lake Area. The co-occurrence of infrastructure improvement as both the primary perceived benefit and the top improvement priority suggests that while physical development gains are recognized, they remain insufficient or unevenly distributed--respondents appear to be acknowledging partial progress while demanding more. This aligns with Tosun's (2002) observation that community members in emerging tourism destinations often experience a gap between the promise and delivery of infrastructural modernization. More critically, the stark prominence of increased cost of living as the dominant negative impact (53.25%)--far exceeding environmental degradation (32.47%)--signals that the economic externalities of tourism are being felt acutely by residents, even as broader development benefits are perceived. This finding echoes Butler's (1980) tourism area life cycle model, wherein rapid growth phases generate inflationary pressures that can erode community well-being and local support for tourism. The relatively low ranking of community involvement in decision-making as both an improvement priority and a current contribution mode is especially significant. Despite the well-documented importance of participatory governance in sustainable tourism (UNWTO, 2023), residents appear either unaware of, or disengaged from, formal planning processes--a condition that, if unaddressed, risks perpetuating a top-down development dynamic that may deepen inequities. Taken together, these results suggest that tourism governance in BLA should prioritize not only continued infrastructure investment but also structured mechanisms for community co-management, particularly to manage cost-of-living pressures and to integrate local organic agriculture into the tourism value chain.

Future research may incorporate probability sampling techniques, longitudinal designs, regression-based modeling, and visitor-side data collection to strengthen empirical robustness and provide deeper analytical insights into tourism development processes.

Conclusion

This study examined tourism promotion and development in the Begnas Lake Area through a community-based perspective with focus on tourism activities, stakeholder participation and satisfaction, visitor spending behavior, and economic influence. The finding shows that tourism in the area is predominantly centered on lake-based activities, particularly boat services and supported by restaurant and limited accommodation facilities. This structure indicates that Begnas Lake currently functions as a short-duration recreational destination rather than a fully diversified tourism hub. Stakeholder perceptions suggest that tourism generates moderate economic benefits, particularly in terms of business growth and employment opportunities. However, satisfaction with tourism development is constrained by perceived weaknesses in infrastructural development and local authority effectiveness. There is strong demand for greater community participation which highlights the importance of participatory governance to ensure sustainable tourism outcomes. These findings emphasize community-based tourism theory like inclusive decision-making and local ownership as critical components for long-term destination sustainability.

The positive correlation between average stay duration and per-day spending serves as an empirical backing for value enhancement strategies. Rather than depending solely on increasing visitor numbers, extending visitor stay through diversification of tourism products and improvement of facilities may offer a more sustainable pathway for economic contribution. At the same time, concerns regarding increased cost of living and environmental degradation underscore that there is need for balanced and carefully managed tourism expansion.

In conclusion, it is evident that Begnas Lake has tourism potential. Additionally, it is in a transitional phase characterized by dominance in tourist attractions, moderate economic contribution, and poor infrastructure. Enhancing these aspects is crucial in transforming existing tourism activity into a sustainable tourism development approach. By aligning promotional strategies with service preparedness and participation mechanisms, Begnas Lake can potentially progress toward becoming a sustainable tourism destination in the tourism landscape of Nepal.

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Journey of Self-discovery in Hesse's *Siddhartha:* A Resistance Approach

Dipendra Raj Regmi
Assistant Professor, Prithivi Narayan Campus Pokhara, Nepal

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Corresponding Author:
dipendra.regmi@prnc.tu.edu.np

Abstract

This paper explores the journey of self-discovery in Hermann Hesse's Siddhartha through the lens of resistance theory. Siddhartha, the protagonist, finds no happiness within himself at his father's house. Even the beautiful verses from the Vedas and the Upanishads do not satisfy his spiritual thirst. Siddhartha, as a result, leaves his father's home and begins questioning authority. Therefore, this paper analyzes how Siddhartha's spiritual journey functions as an act of resistance in the novella. It draws on ideas of resistance from the works of Masse(2017), Tamen (2012), and Hollander and Einwohner (2004). Masse's (2017) concept of the clash of interests between 'the people' and 'the power bloc' helps interpret Siddhartha's journey of self-discovery. Siddhartha's deep questions challenge the authority of his father, old Samanas, and Gotama. By questioning, Siddhartha awakens from his suffering. Additionally, he resists the sensual world of Kamala and the corrupt world of Kamaswami, both of which rely on love, gambling, and wealth. Self-denial remains a form of Siddhartha's resistance to the disgust of materialism. His true resistance becomes clear when he listens to Vasudeva's advice and the voice of the river. Siddhartha's ability to hear the word "Om," meaning perfection, transforms him into a genuine hero in the story. This paper aims to demonstrate, through Siddhartha's journey, that acts of resistance can serve as paths to understanding oneself.

Introduction

Hermann Hesse's *Siddhartha* (1922) depicts the spiritual journey of self-discovery of a young man named Siddhartha during the time of Gautama Buddha. Hilda Rosner translated the text into English, since it was originally written in German. It was later published in the United States in 1951 and had a profound influence worldwide in the 1960s. Hesse organizes the story of *Siddhartha* against the backdrop of Indian philosophy and Hindu religion. Despite following ritualistic daily practices, Siddhartha, the protagonist, cannot find ultimate happiness. Neither sacrifices, religious teachings, nor reciting hymns from the *Veda* and *Upanishads* help him on his journey. Butler (1972) states, "The apparent cause of Siddhartha's discomfort is the inception of awareness of himself as a question-begging phenomenon in a situation which provides no ready answers" (pp.117-18). Siddhartha becomes a questioner because he finds himself engulfed by suffering. The main cause of his suffering remains mysterious to him. He encounters different people at various stages of life, but they are unable to answer his questions. The art of questioning, of course, is the beginning of resisting orthodoxy. Questioning opens the door to satisfy his thirst for knowledge. It starts at his own home, with his first question directed to his father. As a seeker of truth, Siddhartha realizes that his goal is experimental and that religious teachings alone will not provide the freedom he seeks on his journey. Embracing these ideas, this research explores how Siddhartha's journey becomes an act of resistance in Hesse's novel.

Hesse's *Siddhartha* remains a profound work of Eastern philosophy at the start of the 20th century. Siddhartha embarks on a new journey in the novel because he feels no joy in his heart, despite making sacrifices, attending religious sermons, and reciting hymns from the *Vedas* and *Upanishads.* Therefore, this paper aims to answer these research questions:

What is Siddhartha's purpose in asking questions from the very beginning of the novel? Why does Siddhartha leave his home?

How did Siddhartha respond to the material world?

Siddhartha's striking questions and his existing condition inspire researchers to conduct research in literature. In this context, the main objective of this research article is to demonstrate how acts of resistance can serve as paths to understanding oneself.

Hesse's *Siddhartha* has captivated scholars since its publication in 1922. Researchers examine the novel from various angles, sharing their insights through reviews and critiques. Early reviews often focus on either the philosophy or the religion of that time. Ziolkowski (1985) states that, "it would be naïve to read the book as an embodiment or exegesis of Indian philosophy" (p.150). Ziolkowski (1985) sees Hesse's novel as an explanation of Indian philosophy. Boulby agrees with Ziolkowski and describes Siddhartha as "the pinnacle of Hesse's orientalism" (Boulby, 1967, p. 124). For Boulby, Hesse's novel captures the true essence of orientalism. In contrast, Conrad (1975) considers Heisse's *Siddhartha* as "a product of Occidental culture" (p.358). Conrad's view reflects the perspective of Western critics. Additionally, Malthaner (1952) regards *Siddhartha* as an artistic work that "is unique in German literature in its presentation of Eastern philosophy" (p.103). *Siddhartha* holds a special place in German literature because it showcases Eastern philosophy. These reviews reveal how critics have supported or opposed Eastern philosophy since the publication of Hesse's *Siddhartha.*

Some scholars emphasize the religious influence in Hesse's *Siddhartha.* Some critics have tried to evaluate *Siddhartha* through Buddhism, or the teachings of Gautam Buddha. But, "…*Siddhartha* is a revolt against the Buddhist way" (as cited in Misra, 1968, p. 115). *Siddhartha* reflects rebellion against the principles of Buddhism. Conversely, Timpe (1970) investigates the influence of the *Bhagavad Gita* on Siddhartha (p.347). The *Bhagavad Gita*, the supreme text of Hinduism, guides Hesse's plot. Later, Misra (1968) describes the novel as "a product of a special religious awareness in its ritualistic and philosophic pattern, revaluing humanity and the primitive elements in human nature" (p.114). Humanity remains central to both philosophy and religion. Human intrinsic value surpasses all philosophies and religions in the world.

Following philosophy and religion, scholars analyze the novel through the lens of theoretical concepts. Misra (1968) considers *Siddhartha* as Hesse's attempt to discover the meaning of life, and "his attitude is existentialistic" (p. 122). Hesse's existential attitude is reflected in the actions of his protagonist in the novel. Besides the existential theme, Misra (1968) observes the text through a psychoanalytic perspective. In this regard, *Siddhartha* remains an effort by Hesse for "psychological release from his mental condition" (Misra, 1968, p.115). Hesse's emotional purgation resonates in the struggles of the protagonist, Siddhartha. Similarly, Tusken (1992) examines "the conflict of world and spirit in *Siddhartha*" (p. 626). According to Tusken, the conflict between world and spirit reflects the psychological state of both the author and the protagonist. Alternatively, Brestensky (1973) sees Hesse's *Siddhartha* as a case study for examining teaching methods and mentions, "The main thrust of Hermann Hesse's novel, *Siddhartha*, is the hero's distrust of teachings and learnings and his little faith in the words that come from teachers" (p. 379). Siddhartha, the novel's hero, dislikes the way knowledge was traditionally transferred, and he has little trust in teachers' words. The systematic study of Siddhartha's dissatisfaction is lacking in academia. Therefore, this research paper aims to examine the type of resistance Siddhartha undergoes to fill the gap in the scholarship.

Methodology

This study is based on a descriptive textual interpretation of Hesse's *Siddhartha* through the lens of resistance theory. The paper primarily draws on ideas of resistance from Masse (2017), Tamen (2012), and Hollander and Einwohner (2004). The focus lies on Masse's (2017) concept of a clash of interests between 'the people' and 'the power bloc' to analyze the hero's journey. Additionally, insights from other scholars are included to support the paper's argument.

The Concept of Resistance

Resistance refers to opposition or challenges against a dominant power structure, oppression, or hegemony. The history of resistance dates back to Greek political thought, where it emerged as a civic duty against tyranny. Later, it appeared in political and religious writings in modern Europe. The anti-colonial struggles, labor movements, and feminist activism of the 19th and 20th centuries make resistance a powerful idea. The credit for developing resistance theory goes to Antonio Gramsci and Michel Foucault. Their influence is strongly evident in arts and literature. Many fields within the humanities and social sciences reflect the concept of resistance.

The term resistance refers to oppositional thoughts, feelings, and actions in British Cultural Studies. Masse (2017) believes that resistance occurs when there is "…a clash of interests between 'the people' and 'the power bloc'…" (p. 45). These opposing thoughts and feelings divide the people and the authority. As a result, people are ready to challenge authority, whether openly or covertly. The emergence of an agent is essential for fighting against the "…hegemony of the 'power bloc'…" (Masse, 2017, p. 64). Masse argues that an agent is needed to break the domination of the power bloc or authority. Raising issues and questioning can be effective tools in the revolutionary process. Tamen (2012) examines the relationship between interpretation and resistance, and states, "…interpretation is the only possible expression of resistance" (p. 218). The strength of resistance depends on how the issue is interpreted. "The concept of interpretation cannot be kept separate from the concept of human activity, and so nor can it be separated from a particular description of what an agent is" (Tamen, 2012, p. 218). The space for interpretation in human discourse leads to the creation of an agent. An agent's actions must be intentional. Hollander and Einwohner (2004) find two issues: 'recognition' and 'intent'(p. 534) significant while conceptualizing resistance. Recognition and intent are useful to theorize the concept of resistance. Questioning hegemonic power, challenging established norms, and remaining silent are some effective ways for agents to demonstrate resistance. These theoretical ideas are useful for exploring how the protagonist fights against orthodoxy in Hesse's *Siddhartha.*

Analysis and Interpretation

Intervention lies at the heart of resistance to fight against the orthodoxy in all ages. An agent is required to break the orthodox religions and traditions. The protagonist, in Hesse's *Siddhartha,* appears as a rebelling force or as an agent to fight against orthodox belief. Self-denial remains an expression of resistance in the narrative. Siddhartha's action and intent demonstrate resistance against the backdrop of questioning. The agent or rebelling force, Siddhartha, transforms into a hero by understanding himself.

Resistance to Authority

Siddhartha begins his journey of resistance by questioning his father right from the start of the novel. The father metaphor symbolizes authority in a traditional society. Traditional authority instills fear in people's minds. Naumann (1949) argues, "Mind is born out of fear, its function is to react against reality" (p. 39). A fearless mind responds to reality in an egalitarian society. Siddhartha's dialogue with his friend Govinda shows that he is ready to start living as a Samana. His intention reveals what he plans to do in a Brahmin community. "With your permission, my father. I came to tell you that it is my longing to leave your house tomorrow and go to the ascetics. My desire is to become a Samana. May my father not oppose this" (Hesse, 1951, p.11). Siddhartha insists that his father allow him to join the Samanas. He presents himself confidently in front of his father and does not want his father to oppose his decision. Thus, the word "oppose" signals how Siddhartha politely challenges authority. Siddhartha decides to leave his father's home by rejecting all worldly possessions. In reality, he wishes to experience salvation from suffering, or he intends to fulfill the eternal thirst. He understands that one can find one's true self when the mind is free. In this way, Siddhartha rejects the Brahmanical way of life and resists the strictness of his father's authority with a fearless mind.

After resisting his father's authority, Siddhartha killed his senses when he joined the Samanas. Fasting, strict penance, and self-denial became central to his life. Siddhartha's understanding of life and the world differs from that of his friend Govinda in this narrative. "Following his realization, Siddhartha revolted against the world of illusion as he had against that of false and limited Reality" (Timpe,1970, p. 356). Siddhartha's rebellion against illusion shows the strength of his resistance. In reality, he grows distrustful and weary of the teachings of that time. Siddhartha questions his elder Samanas despite being a disciple. Even in his ascetic state, he reveals his intention to oppose. Siddhartha tells the old Samana that he wants to leave. "The old man became mute, his eyes became motionless, his will was paralysed, his arms were hanging down; without power, he had fallen victim to Siddhartha's spell" (Hesse,1951, p. 30). Siddhartha's ability to silence the old Samana again demonstrates his resistance. The old Samana, who acts like a father figure, tries to impose his will, but Siddhartha defies it. Siddhartha even leaves his childhood friend Govinda in the company of Samanas, who travels with him to live a blissful life. Why does Siddhartha act this way? The answer is clear:

Siddhartha has a unique realization of life and the world. Siddhartha's interpretation, according to Tamen (2012), is an expression of resistance.

Siddhartha finds Gotama, the exalted Buddha, after leaving the Samanas in his journey. In the grove of Jetavana, Siddhartha listens to Gotama's teachings. Gotama, the third father figure, explains the origin of suffering and the path to end it. The essence of Gotama's teachings is salvation from suffering. Siddhartha seeks to understand the meaning of life in this world. No one can tell him what happened to Buddha at the moment of enlightenment. Again, Siddhartha's question acts as resistance in his spiritual journey. "…Siddhartha abandons Gotama's teaching; he knows that such truth can be only an individual experience" (Tusken, 1992, p. 629). Siddhartha leaves Gotama because he realizes that salvation cannot simply be taught. Personal experiences are a powerful means to achieve redemption from suffering. In Siddhartha's words, "Salvation from the self is what we Samanas search for, oh exalted one" (Hesse, 1951, p. 44). Siddhartha argues with Gotama, claiming he is seeking redemption from himself. There is a clash of interests between Siddhartha and Gotama. He challenges the authority of the legendary third father figure, Gotama. In reality, Siddhartha dreams of reaching the deepest part of his own self to attain salvation in his life.

Self-awakening is a state of realization that frees an individual from confusion, confrontations, and illusions, allowing them to discover their true self. Siddhartha's relationships with others deteriorate as a result of his awakening. He awakens during his journey after a critical discourse with Gotama. His unique discovery prompts him to ask more questions about life and the world. Siddhartha's question comes from different aspects of life, religion, and philosophy. Misra (1968) argues, "To equate the divine principle in the universe with the self, one has to look deep into oneself, and the world around" (p. 118). The ability to explore the inner self shapes how you connect with the divine in the universe. Hesse (1951) describes Siddhartha's awakening as, "…This had been the last tremor of the awakening, the last struggle of this birth. And it was not long until he walked again in long strides, started to proceed swiftly and impatiently, heading no longer for home, no longer to his father, no longer back" (pp. 54-55). Siddhartha feels a tremor at the moment of awakening because he integrates with the beautiful outside world. His integration lacks the shadow of home and the authority of his father. The final moment of the awakening reflects Siddhartha's resistance, as no one can deny that awakening involves questioning.

Resistance to the Material World

Siddhartha's transformation is most evident in the second part of Hesse's novel, especially during the Kamala episode. In this section, Siddhartha experiences both the pleasures and pains of adulthood. He learns the art of love from the beautiful Kamala, the courtesan. Most importantly, his ability to leave the sensuous world of Kamala signifies a different level of resistance in the story. Scholars studying resistance argue that resisters use their bodies and material objects to oppose (Hollander & Einwohner, 2004, p. 535). Resistance appears in intense human actions and environments. Siddhartha resists the sensual world of Kamala and leaves a lasting impression of who he is. "With one kiss, Siddhartha bid his farewell…" (Hesse, 1951, p. 78). Siddhartha departs with Kamala with a single kiss. How can he forget those days of a sexual relationship? What allows Siddhartha to control his passion? The answer is clear: self-denial. In this way, Siddhartha's ability to leave Kamala's sensual world demonstrates a high level of resistance to temptation.

Siddhartha meets Kamaswami, a merchant, shortly after saying farewell to Kamala in the story. In this section, Siddhartha immerses himself in the world of desires, especially love, gambling, and wealth. However, his inner self resists the material temptations of the early 20th century. Siddhartha only listens to his inner voice. "One of the best methods for helping a person discover himself is that of good listening" (Brestensky, 1973, p. 380). Listening remains one of the best ways to explore oneself. Siddhartha does the same during his spiritual journey when he meets Kamaswami. "Siddhartha got to know many new things, he heard a lot and spoke little" (Hesse, 1951, p. 84). Siddhartha listens to many things from Kamaswami, and he hardly speaks because his listening is a form of resistance. Siddhartha's analogy of "falling leaves" illustrates his understanding of the townspeople's pursuit of material things. His ability to detach from them, both with Kamala and Kamaswami, shows his inner strength. By doing this, Siddhartha defies Kamaswami's material world- the world that evokes visceral emotions.

After experiencing the worlds of Kamala and Kamaswami, Siddhartha asks himself a profound question. Why has he been drawn to lust, greed, and laziness? Why does he still behave like a child? Siddhartha realizes he has become part of an endless cycle—the cycle of disappointment and disgust. Negative emotions are intrinsic to the material world. Miller (1997) argues, "Disgust is a mode of disapprobation. It thus takes on some of the work that could fall to sentiments such as dislike, resentment, anger, indignation, and outrage…" (p. 35). According to Miller (1997), discontentment or disapproval displays negative emotions. These emotions are neither desirable nor agreeable. "That entire day, he sat under the mango tree, thinking of his father, thinking of Govinda, thinking of Gotama. Did he have to leave them to become a Kamaswami?" (Hesse, 1951, p. 106). Siddhartha's deep question challenges the material world against the backdrop of his memories. He feels a sense of regret for the physical world when memories of his father, Govinda, and Gotama cause him pain. Siddhartha asks himself why he departed with them. Disgusting emotions envelop Siddhartha. As a result, his journey takes a new direction in the story, focusing on staying free from disgust and entering into the new world.

Siddhartha's Transformation as a Hero

Siddhartha shows a heroic spirit by resisting authority and separating from the repulsive material world. He displays his resistance by choosing the spiritual over the physical world. When Siddhartha reaches the river in the forest, he desires to drown himself in it. Von Molnar (1971) writes, "The river separates Siddhartha's spiritual life from his involvement in the world of physical intercourse…" (p. 84). In Hesse's *Siddhartha,* the river divides two worlds, or symbolizes two different ideologies Siddhartha encounters in his life. His past life stirs visceral emotions, and Siddhartha wishes to drown in the river. "In this river, Siddhartha had intended to drown himself, in it the old, tired, desperate Siddhartha had drowned today. But the new Siddhartha felt a deep love for this rushing water, and decided for himself, not to leave it very soon" (Hesse, 1951, p. 125). Siddhartha emerges as a hero with a new outlook after diving into the river. The despondent Siddhartha transforms into a new role, and a new Siddhartha falls in deep love with the river's movement. Siddhartha's profound attachment to the river signals his realization.

Vasudeva, the ferryman, guides Siddhartha on his journey of self-discovery in the latter part of the novel. The ferryman episode is one of the most significant turning points in Siddhartha's spiritual journey. In this section, Siddhartha resists the authority and material world, immersing himself in the beauty of nature. Siddhartha learns to listen to the river when he meets Vasudeva.

In this context, Vasudeva's role parallels that of Krishna in the *Bhagavad-Gita*. "From him he learns that the river contains the real message of life, that each being is part of the continuous flow of life as a wave is part of the flowing river" (Tusken, 1992, p. 630). Siddhartha learns the supreme message of life from the river, namely the concept of time. Hesse (1951) states, "…that the river is everywhere at once…there is only the present time for it, not the shadow of the past, not the shadow of the future…" (p. 134). For the river, the concept of time does not exist. There is no past and no future for the river—only the present. The same idea applies to a man, according to Vasudeva, who claims that the sound of the river is the voice of life. When Siddhartha listens to Vasudeva and the river, he challenges conventional religious authority and worldly temptations. Siddhartha's learning from the river provides him with celestial joy, which he has been seeking eagerly for years.

Finally, Siddhartha reunites with Kamala and their son by the riverbank, where he lives with the ferryman. He shows compassion to Kamala when a poisonous snake bites her. Siddhartha arranges a gentle burial for Kamala's body. In the scene with his son, Siddhartha recalls resisting his father, and "past rose up in his soul" (Hesse, 1951, p. 157). When Siddhartha remembers his past, he grants his son the freedom to live his own life. Now, he has nothing to lose and no ties to this corrupt world. Siddhartha only listens to the river's voice in the company of his master, Vasudeva. As a result, Siddhartha hears the one-syllable word "Om," which signifies perfection. The word "Om" symbolizes Siddhartha's true awakening in the story. The novel ends with Siddhartha's reunion with Govinda. Siddhartha explains to Govinda what he has learned from Vasudeva and the river. He argues that the river conveys a universal message—that the present exists more than the past and future. To him, the river is a divine god, and his awakening is based on experience rather than religious teachings. In this way, Siddhartha becomes an idol or hero to Govinda.

Conclusion

Siddhartha's journey of self-discovery becomes an act of resistance in Hesse's *Siddhartha*. The protagonist's resistance begins with politely questioning authority. Siddhartha's decision to leave his father's house challenges authority, and his questions aim to explore the self. Additionally, Siddhartha asks questions to the old Samanas, reflecting his understanding of life and the world. Finally, Siddhartha raises questions to Gotama, the exalted Buddha, with deep inquiries. He shows signs of self-awakening after raising questions to three fatherly figures in the story. His separation from his friend Govinda, the old Samanas, and Gotama provides him with new insights into life, leading him to resist the corrupt material world. Self-denial remains a powerful expression to defy worldly temptations. Through self-awakening, Siddhartha resists the sensual world of Kamala. Additionally, he keeps himself separate from Kamaswami's world-the world of love, gambling, and wealth. Siddhartha gains spiritual strength to resist the corrupt world when he listens to his inner voice. By tuning into this inner voice, Siddhartha transforms into his new role. His transformation occurs when he listens to Vasudeva and the message of the river. The universal message of the river emphasizes that the present is more important than the past or future. In the company of Vasudeva and the river, Siddhartha hears the word "Om," which signifies perfection. This spiritual awakening turns him into a true hero in the story. Siddhartha demonstrates heroism in the reunion scene with Govinda, Kamala, and their son at the end of the narrative. This paper aims to convey the message that resistance can transform an individual into a hero. Young researchers should study Hesse's *Siddhartha* through emerging literary trends in literature.

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Factors Influencing Green Entrepreneurial Intention among Business Students in Nepal

Rashmi Rana Magar[1], Santosh Kumar Gurung[2], Shanti Devi Chhetri, PhD[2], Bal Ram Bhattarai, PhD[2]

[1]MBA Graduate, School of Business, Pokhara University, Pokhara, Nepal

[2]School of Business, Pokhara University, Pokhara, Nepal

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Corresponding Author:
f18santoshg@iima.ac.in

Abstract

This study examined the influence of support mechanisms (academic, business, conceptual, institutional, and country support) and entrepreneurial self-efficacy on green entrepreneurial intention among business students in Nepal. A quantitative cross-sectional survey design was adopted, and data were collected from 441 undergraduate and postgraduate students enrolled in business programmes at a constituent school of Pokhara University who had received prior entrepreneurship education. A structured questionnaire comprising thirty-six items across seven constructs was administered, with responses measured on a five-point Likert scale. Descriptive findings showed that most respondents intended to establish green businesses, and perceptions of the support mechanisms and self-efficacy were moderate to high. Correlation analysis indicated significant positive relationships between all independent variables and green entrepreneurial intention, with institutional support, entrepreneurial self-efficacy, and country support showing the strongest associations. Multiple regression analysis identified entrepreneurial self-efficacy as the strongest predictor, followed by institutional support, country support, and business support, whereas academic support and conceptual support had no significant influence. The findings align with the theory of planned behaviour, confirming that perceived behavioural control and supportive environmental contexts are important determinants of entrepreneurial intention. They suggest that self-efficacy, institutional frameworks, and supportive national policies are central to green entrepreneurial intention, and that the transmission of theoretical knowledge alone is no longer sufficient. The study contributes to the literature on sustainable entrepreneurship in developing economies by clarifying the roles of institutional arrangements and psychological factors in shaping green entrepreneurial intention among university students, with implications for educational policy and curriculum in Nepal and similar settings.

Introduction

Sustainability has become a central concern for businesses worldwide, driven by the global commitment to achieve the United Nations Sustainable Development Goals by 2030 (Song et al., 2022; Yamane & Kaneko, 2022). This focus responds to pressing social, economic, and environmental challenges of contemporary development (Girma et al., 2025; Rosario & Figueiredo, 2024) and has drawn growing attention from scholars and practitioners to sustainable business (Boermans et al., 2024; Khamis et al., 2025). Green entrepreneurship has emerged within this discussion as a way of combining economic growth with environmental and social responsibility (Al-Mamary, 2025; Mawardi et al., 2025; Zhao et al., 2025). It can be understood as a business model that integrates environmental awareness with entrepreneurship by creating opportunities that address social, economic, and environmental problems at once (Gibbs & O'Neill, 2014). A core construct in this field is green entrepreneurial intention (GEI), the conscious desire of an individual to start a business that pursues both economic gain and environmental sustainability (Aurellia & Nuringsih, 2023).

Business students form a critical population for this inquiry. Their training in business and management equips them with competencies in strategic planning, resource management, and market analysis that are central to sustainable entrepreneurship (Makuya & Changalima, 2024; Shabeeb Ali et al., 2023). Exposure to corporate social responsibility, sustainable business, and ethical decision-making further aligns their skills with the principles of sustainability (Lee & Fu, 2024), enabling them to translate environmental awareness into ventures that combine ecological, social, and economic value (Mawardi et al., 2025). Although entrepreneurial intention has been studied extensively (Anjum et al., 2023; Shahriar et al., 2024; Teoh et al., 2024), the determinants of green entrepreneurial intention, particularly through the lens of the theory of planned behaviour, remain insufficiently examined (Ip, 2024; Mishra et al., 2024; Rahayu, 2024). Prior work suggests that supportive conditions such as academic, business, conceptual, institutional, and country support, together with entrepreneurial self-efficacy, shape green entrepreneurial behaviour (Amponsah et al., 2024; Cabana-Villca et al., 2024), yet how these forms of support interact and influence students' intentions to pursue green ventures is not well understood (Shabeeb Ali et al., 2023).

Nepal offers a relevant setting. As a least developed country repeatedly ranked among the most vulnerable to climate change, it faces severe environmental threats, including erratic weather, irregular monsoons, glacial melt, floods, and landslides, which endanger livelihoods and economic stability (Government of Nepal, 2019). In response, the country has signed the Paris Agreement, committed to net-zero emissions by 2045, and introduced the Green Finance Taxonomy in 2024, while its periodic plans prioritise green growth, renewable energy, and sustainable entrepreneurship (Nepal Rastra Bank, 2024). Financial and policy instruments such as the Green Fund, concessional loan directives, tax benefits, and the National Startup Enterprise Policy 2024 further support green enterprise (Inland Revenue Department, 2024; Ministry of Industry, Commerce and Supplies, 2024). Green enterprises now contribute to both environmental protection and inclusive economic development, especially in organic agriculture, renewable energy, and eco-friendly products (Paudel & Adhikari, 2023). Even so, inconsistent policies, limited access to green finance, and weak institutional support continue to slow progress (Basnet & Acharya, 2025).

Most existing studies on green entrepreneurial intention have been conducted in developed economies (Al-Mamary, 2025; Ip, 2024; Mabkhot et al., 2024; Zhao et al., 2025) or in other developing regions such as Africa, Latin America, and Southeast Asia (Amponsah et al., 2024; Cabana-Villca et al., 2024; Makuya & Changalima, 2024). In Nepal, research has largely addressed general entrepreneurial intention among business students (Karki et al., 2023; Shrestha, 2024; Wagle et al., 2024), with little empirical evidence on the factors that shape green entrepreneurial intention specifically. There has been no systematic study of the relative importance of the various support mechanisms in a resource-constrained, climate-sensitive context, and the role of entrepreneurial self-efficacy in the South Asian setting remains underexplored (Alshebami et al., 2024; Robayo-Acuna et al., 2023). Evidence on the actual contribution of educational institutions and government policies to green entrepreneurial intention is also mixed (Deng & Wang, 2023), which calls for context-specific study. To address this gap, the present study investigates the influence of academic support, business support, conceptual support, institutional support, country support, and entrepreneurial self-efficacy on green entrepreneurial intention among business students in Nepal, with the aim of producing empirical insights that can guide higher education institutions and policymakers in promoting green entrepreneurship.

Theoretical Foundation and Hypotheses

The theory of planned behaviour (TPB) by Ajzen (1991) guides this study because it explains intention through three determinants: attitude toward the behaviour, subjective norm, and perceived behavioural control. The framework offers a systematic way to understand how different forms of support and psychological factors combine to shape green entrepreneurial intention. Attitudes reflect an individual's evaluation of green entrepreneurship; academic and conceptual support, such as teaching sustainability and introducing green business ideas, can foster a favourable view of environmentally oriented ventures (Bui et al., 2025; Man Seong et al., 2025). Subjective norms capture perceived social pressure to pursue green entrepreneurship, which can be influenced by the local business environment and by country-level cues such as government policy and cultural orientation toward sustainability (Pinheiro et al., 2022; Shabeeb Ali et al., 2023). Perceived behavioural control reflects how easy or difficult green entrepreneurship is seen to be, and is strengthened by academic resources, institutional infrastructure, funding, and policy incentives, as well as by entrepreneurial self-efficacy (Cabana-Villca et al., 2024; Uzorka et al., 2024).

Academic support refers to the formal curriculum, courses, and academic resources that universities provide on entrepreneurship and environmental sustainability (Nabi et al., 2017), including specialised courses, business plan competitions, sustainability-related coursework, and case studies of green businesses (Zhou et al., 2024). Although knowledge gain is often assumed to translate directly into intention, evidence is mixed: the effect of entrepreneurship education varies across student groups and depends on pedagogy and curriculum quality (Deng & Wang, 2023; Lyu et al., 2023; Zhou et al., 2024). Even so, Ghodbane and Alwehabie (2023) found that academic support through education, training, mentoring, and university resources significantly raises students' green entrepreneurial intention. Accordingly:

> *H1: Academic support has a positive effect on the green entrepreneurial intention of business students.*

Business support concerns the practical resources that aid actual venture start-up and operation, including access to finance, business development services, mentoring by experienced entrepreneurs, and market access (Bhatnagar et al., 2022). Unlike academic or institutional support, which operate mainly through educational channels, business support provides tangible resources that directly reduce entrepreneurial barriers. Studies show a consistent positive but moderate effect of business support on green entrepreneurial intention. Bhatnagar et al. (2022) demonstrated that green finance supports sustainable entrepreneurship in India, and Alshebami (2023a) found that financial support promotes green innovation and self-efficacy among Saudi small enterprises. Networking and mentorship also help prospective entrepreneurs access partners, customers, and investors (Liu et al., 2022a; Mawardi et al., 2025). Thus:

> *H2: Business support has a positive effect on the green entrepreneurial intention of business students.*

Conceptual support is the provision of theoretical frameworks, mental models, and conceptual tools that help students understand entrepreneurship and sustainability cognitively, including exposure to entrepreneurship theories, business models, and strategic thinking (Fan et al., 2022). Al-Qadasi et al. (2024) argued that entrepreneurship education shapes behaviour not directly but through self-efficacy and attitude, so the link between conceptual understanding and intention is psychologically mediated. Al-Mamary (2025) and Santika et al. (2022) reported that conceptual preparation in environmental knowledge and sustainability principles strengthens green entrepreneurial intention by improving awareness and confidence. Therefore:

> *H3: Conceptual support has a positive effect on the green entrepreneurial intention of business students.*

Institutional support refers to the overall infrastructure, programmes, and services that universities and educational institutions provide to encourage entrepreneurship, such as incubators, mentorship initiatives, networking, and links to industry partners (Yi, 2021; Mawardi et al., 2025). Empirical evidence consistently shows a positive effect on green entrepreneurial intention and behaviour. Mawardi et al. (2025) found institutional support to be a key determinant of green entrepreneurial behaviour among Indonesian and Malaysian students, while Yang (2024) and Li et al. (2023) showed that university support strengthens green entrepreneurial behaviour and mediates the intention–behaviour relationship. Yi (2021) identified institutional support as a bridge between intention and behaviour. Hence:

> *H4: Institutional support has a positive effect on the green entrepreneurial intention of business students.*

Country support refers to the policies, regulations, incentives, and infrastructure through which governments promote entrepreneurship, and green entrepreneurship in particular, at the national level (Robayo-Acuna et al., 2023), including environmental policies, financial support, green public procurement, and an enabling policy environment (OECD, 2022). Recent studies highlight its importance in developing countries where government policy strongly shapes economic activity. Yasir et al. (2025) found that national environmental and social factors significantly influence sustainable entrepreneurial intention among Pakistani students, and Robayo-Acuna et al. (2023) showed that country support raises entrepreneurial self-efficacy, which in turn affects green entrepreneurial intention among Colombian students. Bhatnagar et al. (2022) reported that government-led green finance spurred green start-ups in India. Therefore:

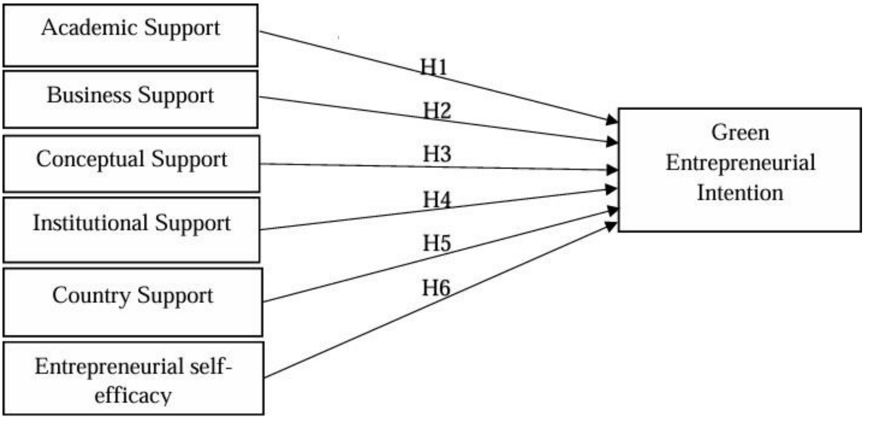
> *H5: Country support has a positive relationship with the green entrepreneurial intention of business students.*

Entrepreneurial self-efficacy (ESE) is an individual's belief in their capability to perform entrepreneurial tasks (Al-Qadasi et al., 2024), with green entrepreneurial self-efficacy referring to confidence in establishing and managing environmentally friendly ventures (Sanchez-Garcia et al., 2024). ESE is among the most robust predictors of entrepreneurial intention across settings (Alshebami et al., 2024; Barrera-Verdugo et al., 2025). Alshebami et al. (2024) found that green self-efficacy shapes green entrepreneurial intention in Saudi Arabia, and Man Seong et al. (2025) showed that self-efficacy mediates the link between green curriculum exposure and intention among Malaysian students. Robayo-Acuna et al. (2023) reported a strong positive effect of ESE on green entrepreneurial intention among Colombian students. Accordingly:

H6: Entrepreneurial self-efficacy is positively related to the green entrepreneurial intention of business students.

Fig. 1

Proposed Research Model



Source: Adapted from Cabana-Villca et al. (2024)

Methodology

This study adopted a quantitative cross-sectional survey design, which is appropriate for measuring variables and testing hypotheses through statistical techniques (Barroga & Matanguihan, 2022), and for identifying patterns, relationships, and variations among key constructs. Wang and Cheng (2020) note that cross-sectional designs are effective for examining attitudes and behaviours of large groups within a defined period. The study was conducted among undergraduate and postgraduate business students enrolled at the School of Business, Pokhara University, Nepal, who had prior exposure to entrepreneurship education. Pokhara University was selected because it is the second-largest university in Nepal in terms of student enrolment (UGC, 2024) and maintains an extensive network of business and management education. The target population for the study consisted of 758 students from the School of Business who had completed entrepreneurship-related courses. Purposive sampling was employed to select participants from this population because only students with prior exposure to entrepreneurship education were considered capable of providing informed responses regarding entrepreneurship and sustainability-related constructs. Data were collected from eligible respondents, resulting in 441 valid responses for analysis.

The survey instrument comprised 36 items measuring seven constructs on a five-point Likert scale anchored from strongly disagree to strongly agree. Academic support used six items based on Wegner et al. (2020), assessing university entrepreneurship opportunities through coursework, projects, internships, degree programmes, conferences, and connections with entrepreneurs. Business support used three items adapted from Alvarez-Risco et al. (2021), measuring awareness creation, encouragement, and idea generation for new ventures. Conceptual support used four items based on Wegner et al. (2020), assessing the delivery of entrepreneurial awareness, motivation, strategies, and knowledge. Institutional support used nine items based on Liu et al. (2022b) and Yang (2024), covering financial guidance, networking, enabling conditions, competitions, support systems, top-level support, coursework, practicum, and advisory offices. Country support used two items adapted from Alvarez-Risco et al. (2021), assessing perceptions of national-level structures supporting green entrepreneurs and economic opportunities. Entrepreneurial self-efficacy used four items from Soria-Barreto et al. (2016), assessing confidence in creating and sustaining a green business. The dependent variable, green entrepreneurial intention, used eight items adapted from Moriano et al. (2001), covering contemplation, planning, prioritisation, willingness, commitment, and management intentions toward sustainable ventures. All items were drawn from validated measures, with minor contextual adjustments to suit the Nepali higher education setting.

Data were collected between 20 July and 22 September 2025 using a combination of online and in-person methods. The primary distribution channel was Google Forms, shared through university email networks and social media platforms such as Messenger, WhatsApp, and Viber to allow quick and convenient access. The questionnaire targeted undergraduate and postgraduate business students who had previously taken formal entrepreneurship courses. Ethical approval was obtained from the concerned school before data collection. Participants were informed of the purpose of the study, the confidentiality of their responses, and the voluntary nature of participation, and consent was obtained from all respondents.

Reliability was assessed using Cronbach's alpha, with values of 0.70 or higher indicating acceptable internal consistency (Nunnally, 1978). The constructs demonstrated acceptable reliability, with alpha values ranging from 0.657 to 0.879. Content validity was established through expert review, in which subject matter experts rated the relevance of items and their alignment with the theory of planned behaviour and the green entrepreneurship literature (Grant & Davis, 1997; Johnston et al., 2014). A pilot test with 50 business students at Tribhuvan University was conducted to improve face validity and to detect any ambiguity in the items.

The data were coded and analysed in SPSS version 26.0 in two stages. In the descriptive stage, means, standard deviations, frequencies, and percentages summarised the demographic profile and the distribution of the study variables. In the inferential stage, correlation analysis examined the relationships between the six independent variables and green entrepreneurial intention, followed by multiple regression analysis to determine the predictive contribution of each independent variable. Hypotheses were tested at the 0.05 significance level.

Result

Characteristics of Respondents

Table 1 presents the characteristics of the respondents included in the study. Most respondents were female (62.6%), while the remaining were male (37.4%). In terms of age, the majority were between 21 and 24 years (65.8%), followed by those aged 25 years and above (18.0%) and those aged 17 to 20 years (16.3%). With regard to participants' social background, respondents identifying as Brahmin/Chhetri constituted the largest proportion (69.6%), followed by Indigenous/Janajati (20.9%), Dalit (4.3%), Madhesi (2.0%), and other groups (3.2%). Regarding level of study, 75.96% were enrolled in undergraduate business programmes and 24.04% in postgraduate programmes. Career advancement (62.4%) was the primary reason for pursuing the programme, followed by interest in the field (22.4%), family expectation (9.8%), other reasons (3.4%), and entrepreneurship (2.0%). In relation to future entrepreneurial intention, 78.7% of respondents reported an intention to start a green business, indicating considerable interest in sustainable enterprise among the study participants.

Table 1

Profile of the Study Participants (N = 441)

Variable	*Categories*	*n*	*%*
Gender	Female	276	62.6
	Male	165	37.4
Age group	17–20	72	16.3
	21–24	290	65.8
	25 and above	79	18.0
Ethnicity	Brahmin/Chhetri	307	69.6
	Indigenous (Janajati)	92	20.9
	Dalit	19	4.3
	Madhesi	9	2.0
	Others	14	3.2
Level of business programme	Undergraduate	335	75.96
	Postgraduate	106	24.04
Primary motivation for programme	Career advancement	275	62.4
	Interest in the field	99	22.4
	Family expectation	43	9.8
	Others	15	3.4
	Entrepreneurship	9	2.0
Intention to start green business	Yes	347	78.7
	No	94	21.3

Note. Field survey, 2025

Relationships among Support Mechanisms, Self-Efficacy, and Green Entrepreneurial Intention

Pearson correlation coefficients among the study variables, academic support (AS), business support (BS), conceptual support (CS), institutional support (IS), country support (CoS), entrepreneurial self-efficacy (ESE), and green entrepreneurial intention (GEI), are reported in

Table 2. All correlations are positive and statistically significant, indicating that higher levels of each form of support and of self-efficacy are associated with stronger green entrepreneurial intention. Academic support correlated most strongly with business support ($r = .650$, $p < .01$) and conceptual support ($r = .632$, $p < .01$), suggesting that students who perceive strong academic encouragement also perceive stronger business- and concept-related guidance. Business support correlated strongly with conceptual support ($r = .772$, $p < .01$) and institutional support ($r = .598$, $p < .01$), implying that practical resources such as mentorship and incubation reinforce conceptual and institutional learning. Institutional support correlated notably with country support ($r = .576$, $p < .01$) and self-efficacy ($r = .523$, $p < .01$), suggesting that a supportive institutional climate, backed by sound national systems, strengthens students' confidence in their entrepreneurial capabilities. Green entrepreneurial intention was most strongly related to institutional support ($r = .586$, $p < .01$), self-efficacy ($r = .579$, $p < .01$), and country support ($r = .541$, $p < .01$), indicating that students are more likely to intend to pursue green entrepreneurship when they feel well supported by institutions and the country and are confident in their entrepreneurial skills.

Table 2

Pearson Correlation Matrix among the Study Variables

Variables	*AS*	*BS*	*CS*	*IS*	*CoS*	*ESE*	*GEI*
AS	—						
BS	.650**	—					
CS	.632**	.772**	—				
IS	.580**	.598**	.612**	—			
CoS	.421**	.469**	.447**	.576**	—		
ESE	.396**	.395**	.416**	.523**	.416**	—	
GEI	.398**	.474**	.442**	.586**	.541**	.579**	—

Note. **$p < .01$ (2-tailed). AS = academic support; BS = business support; CS = conceptual support; IS = institutional support; CoS = country support; ESE = entrepreneurial self-efficacy; GEI = green entrepreneurial intention

Support Mechanisms and Self-Efficacy as Predictors of Green Entrepreneurial Intention

A multiple regression analysis was conducted to identify the key determinants of green entrepreneurial intention, using academic, business, conceptual, institutional, and country support and entrepreneurial self-efficacy as predictors. The analysis examined how far these variables, jointly and individually, account for students' intention to pursue green entrepreneurship.

Table 3

Model Summary for the Regression of Green Entrepreneurial Intention on Support Mechanisms and Self-Efficacy

Model	*R*	*R^2*	*Adjusted R^2*	*Std. error of the estimate*
1	.702	.493	.486	.492

Note. Predictors: academic support, business support, conceptual support, institutional support, country support, and entrepreneurial self-efficacy

As shown in Table 3, the model demonstrates a satisfactory overall fit. The multiple correlation ($R = .702$) indicates a strong positive association between the combined support mechanisms and green entrepreneurial intention, and the coefficient of determination ($R^2 = .493$) shows that the predictors explain 49.3% of the variance in green entrepreneurial intention. The adjusted R^2 of .486 confirms that the explanatory power remains strong after accounting for the number of predictors, and the standard error of the estimate (.492) indicates reasonably accurate prediction.

Table 4

Analysis of Variance (ANOVA) for the Regression Model Predicting Green Entrepreneurial Intention

Model	*Sum of squares*	*df*	*Mean square*	*F*	*p*
Regression	102.218	6	17.036	70.438	.000
Residual	104.968	434	.242		
Total	207.185	440			

Note. Dependent variable: green entrepreneurial intention

The ANOVA results in Table 4 confirm that the regression model significantly predicts green entrepreneurial intention, $F(6, 434) = 70.438$, $p < .001$. The combined predictors account for about 49.3% of the total variance in green entrepreneurial intention, consistent with the R^2 reported in the model summary.

Table 5

Regression Coefficients for the Predictors of Green Entrepreneurial Intention

Predictor	***B***	***SE***	***β***	***t***	***p***
Constant	0.890	0.138	—	6.444	.001
Academic support (AS)	-0.037	0.042	-0.043	-0.886	.376
Business support (BS)	0.112	0.046	0.141	2.428	.016
Conceptual support (CS)	-0.020	0.048	-0.024	-0.413	.680
Institutional support (IS)	0.244	0.054	0.234	4.541	.001
Country support (CoS)	0.185	0.035	0.231	5.360	.001
Entrepreneurial self-efficacy (ESE)	0.315	0.039	0.332	8.077	.001

Note. B = unstandardised coefficient; SE = standard error; β = standardised coefficient; t = t-value; p = significance (two-tailed). Dependent variable: green entrepreneurial intention. $p < .05$ indicates significance

Table 5 presents the regression coefficients for the predictors of green entrepreneurial intention. Academic support had a negative, non-significant coefficient ($B = -0.037$, $p = .376$), indicating that coursework knowledge did not significantly affect green entrepreneurial intention. Conceptual support was also weak and non-significant ($B = -0.020$, $p = .680$), suggesting that theoretical knowledge without practical application contributes little to intention. In contrast, business support had a positive, significant effect ($B = 0.112$, $\beta = 0.141$, $p = .016$), indicating that access to networks, funding, and incubation strengthens students' intention to enter green ventures. Entrepreneurial self-efficacy was the strongest predictor ($B = 0.315$, $\beta = 0.332$, $p < .001$), underlining the central role of students' confidence in their entrepreneurial capabilities. Institutional support ($B = 0.244$, $\beta = 0.234$, $p < .001$) and country support ($B = 0.185$, $\beta = 0.231$, $p < .001$) also had strong positive effects, showing that supportive university programmes and an enabling national environment encourage green entrepreneurial intention.

Table 6

Results of Hypothesis Testing for the Predictors of Green Entrepreneurial Intention

Hypothesis	***Variable***	***β***	***p***	***Decision***
H1	AS	-.043	.376	Not supported
H2	BS	.141	.016	Supported
H3	CS	-.024	.680	Not supported
H4	IS	.234	.001	Supported
H5	CoS	.231	.001	Supported
H6	ESE	.332	.001	Supported

Note. β = standardised regression coefficient. $p < .05$ indicates significance. Dependent variable: green entrepreneurial intention.

As shown in Table 6, four of the six hypotheses were supported. Business support (H2), institutional support (H4), country support (H5), and entrepreneurial self-efficacy (H6) had significant positive effects on green entrepreneurial intention, with self-efficacy showing the strongest influence. Academic support (H1) and conceptual support (H3) were not supported, indicating that, in this sample, formal coursework and theoretical knowledge alone did not significantly shape students' intention to pursue green ventures.

Discussion

This study examined the influence of academic, business, conceptual, institutional, and country support and entrepreneurial self-efficacy on green entrepreneurial intention among business students at Pokhara University, Nepal. The correlation results showed strong positive associations among the constructs, with institutional support, self-efficacy, and country support most strongly related to green entrepreneurial intention. The regression results identified self-efficacy, institutional support, country support, and business support as significant predictors, whereas academic and conceptual support were non-significant.

Entrepreneurial self-efficacy emerged as the strongest predictor, consistent with prior research across diverse contexts. Studies in Saudi Arabia (Alshebami et al., 2024), Malaysia (Man Seong et al., 2025), Spain and Portugal (Sanchez-Garcia et al., 2024), Colombia (Robayo-Acuna et al., 2023), and Albania (Alimehmeti et al., 2025) similarly report that self-efficacy is central to forming green or sustainable entrepreneurial intention. The result for Nepal suggests that students' confidence in their ability to execute green entrepreneurial tasks provides a critical psychological foundation for intention, and that building this confidence should be a priority for green entrepreneurship education.

Institutional support also had a significant effect, in line with evidence that universities play a central role in shaping students' entrepreneurial aspirations. A cross-cultural study in Indonesia and Malaysia found that university support influences green entrepreneurial behaviour, but that university support alone is insufficient without practical experience and support from government institutions (Mawardi et al., 2025), which leaves open the question of what additional mechanisms are needed to translate intention into behaviour. Research on Chinese students linked institutional support to green entrepreneurial behaviour through absorptive capacity, indicating that institutions support not only intention formation but also the acquisition and application of knowledge (Yang, 2024). Studies in Pakistan and elsewhere further show that university support mediates the relationship between green entrepreneurial intention and behaviour (Li et al., 2023; Yi, 2021), and a recent study in Thailand reported a direct effect of entrepreneurial policy on green entrepreneurial intention (Wongtaweelat et al., 2025). The present finding indicates that institutional programmes, mentorship, and senior management support help create an enabling environment in which green entrepreneurial intention can form among Nepali business students.

Country support was likewise a significant predictor, consistent with the growing emphasis on macro-level factors. Robayo-Acuna et al. (2023) found that country support raises entrepreneurial self-efficacy and, in turn, green entrepreneurial intention, while Yasir et al. (2025) showed that government policies and environmental factors significantly affect sustainable entrepreneurial intention. The strong relationship observed here suggests that Nepali business students are aware of the national policy environment and government support for green ventures.

Business support had a positive but comparatively modest effect. Research stresses that finance, subsidies, concessional loans, and tax incentives are particularly important for green ventures because of their environmental and technological requirements (Bhatnagar et al., 2022). The moderate effect size may reflect the early development stage of green entrepreneurship support infrastructure in Nepal, where incubators, angel investors, and venture capital focused on green ventures are still emerging. Students at the intention-formation stage may give more weight to self-efficacy and institutional legitimacy than to operational business services, which matter more at the venture-creation stage (Alshebami, 2023b).

A notable finding is the non-significant, negative relationship between academic support and green entrepreneurial intention. This diverges from some prior work but aligns with emerging evidence that questions the assumed benefit of academic curricula. Studies show that practice-oriented pedagogy outperforms theory-oriented pedagogy in supporting the entrepreneurial process (Lyu et al., 2023), that the effect of entrepreneurship education varies across student groups (Deng & Wang, 2023), and that much of the literature relies on short-term, subjective outcomes without specifying the pedagogy tested (Nabi et al., 2017). In the Nepali context, several factors may explain the result. Curricula may emphasise conventional business concepts rather than green entrepreneurship; pedagogies may be more theoretical than practical; and a perceived gap between academic content and real-world venture development may reduce the relevance of coursework. The negative coefficient, although not significant, also raises the possibility that heavy academic demands or overly abstract teaching absorb students' time and energy without providing applicable skills. Evidence that some successful entrepreneurs rely on self-directed and experiential learning rather than formal entrepreneurship education (Kaiser et al., 2025), together with concerns about incomplete teaching content in vocational settings (Zhou et al., 2024), reinforces the need for universities in Nepal to review how their programmes prepare and enable students for green entrepreneurship.

Similarly, conceptual support had a non-significant, negative relationship with green entrepreneurial intention, contrary to the expectation that cognitive knowledge supports intention formation. The result may indicate that abstract knowledge not linked to practice, role models, or first-hand experience does not translate well into intention, and that conceptual support overlaps with academic support. Recent work emphasises that experiential learning is more effective than theoretical learning in fostering entrepreneurial intention and behaviour (Bhoyar et al., 2025; Fan et al., 2022). Taken together, the two non-significant results suggest that cognitive understanding alone is insufficient, and that students need support that integrates theory with field experience, mentoring, and practical skills training.

These findings carry practical implications for higher education and policy in Nepal. Because self-efficacy is the strongest predictor, business programmes should move beyond knowledge transmission toward experiential approaches such as venture projects, incubation, mentoring, and exposure to green entrepreneurs that build students' confidence in their capabilities. The significance of institutional and country support indicates that universities and government should work together, pairing campus incubators and advisory services with accessible green finance, clear regulations, and targeted incentives. The non-significant results for academic and conceptual support do not imply that curricula are unimportant, but rather that theoretical content should be redesigned to connect with practice. For policymakers, the results reinforce the value of consistent national policies and functioning support infrastructure for translating green entrepreneurial intention into action.

Conclusion

This study found that entrepreneurial self-efficacy is the strongest predictor of green entrepreneurial intention among business students at Pokhara University, highlighting the importance of students' belief in their ability to lead sustainable ventures and the role of psychological empowerment in entrepreneurial motivation. Institutional and country support were also significant predictors, pointing to the need for supportive educational and policy frameworks, while business support contributed practical resources that enhance students' readiness for sustainable enterprise. In contrast, academic and conceptual support were non-significant, suggesting that theoretical instruction alone does not effectively stimulate green entrepreneurial intention. This pattern reflects features of Nepali higher education, where programmes tend to prioritise theoretical knowledge and examination performance over practical learning and innovation. The findings are consistent with the theory of planned behaviour, in which perceived behavioural control and social norms drive intention, and they indicate that practical, institutional, and psychological enablers matter more than knowledge-based factors. The study contributes to the literature on sustainable entrepreneurship in developing economies by clarifying the interplay between institutional processes, national policies, and individual self-efficacy in shaping students' green entrepreneurial intention, and it points to the value of experiential and context-specific pedagogy.

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Financial Stability of Local Government: Analysis of Annapurna Rural Municipality

Roshan Subedi, Raj Kumar Subedi
Faculty of Management, Gupteshwor Mahadev Multiple Campus

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Corresponding Author:
subedirosan98@gmail.com

Abstract

The assessment of the financial performance of Annapurna Rural Municipality (ARM) over the past six years (2074/75-2079/80) has been accomplished through the use of several different financial indicators, including a number of key financial ratios and an aggregated stability indicator. The key financial ratios studied included the Financial Independence Ratio (FIR), the Financial Dependence Ratio (FDR), Current Expenditure Ratios, Capital Expenditure Ratios, Development Expenditure Ratio (DER) and Revenue Growth Rate (RGR). The overall stability score showed considerable fluctuation during period of study, with the highest stability index recorded at 0.781 in the fiscal year 2077/78 and the lowest having been 0.289 in 2074/75. Low FIR and high FDR numbers show that ARM is largely dependent on fiscal transfers and external grants. Current expenditure ratio (ERcurrent) displayed inconsistent trends which varied during whole period of study suggesting operational inefficiency of ARM administration in financial management. Capital expenditure (ERcapital)is consistently low which imply inadequate investment in long-term physical infrastructure development. Revenue growth rate (RGR) showed highly volatility, with a steep fall of -21.72% in 2079/80, while development expenditure ratio (DER) showed inconsistency, which negatively impacts the stability score in the subsequent year. The results indicate that ARM faces major fiscal management challenges which include excessive reliance on external funding sources, poor expenditure efficiency and limited capacity and innovation for internal revenue generation. To make sure ARM has money they should make it easier for people to pay taxes and other fees. They should also plan better how they will spend their money and make sure they actually do what they say they will do. ARM should use more of their money to help the community and work on projects that will last a long time like development and capital projects. This study contributes in understanding the financial dynamics of Nepal's local government like ARM, under fiscal federalism. This study provides practical insights for policymakers who are willing to achieve greater financial autonomy and long-term fiscal sustainability of the local government under federalism.

Introduction

Financial management plays a important role in determining the ability of local governments to deliver public services, develop infrastructure and promote socio-economic development. Financial stability refers to the ability of a local government to generate, allocate and use financial resources in a sustainable manner without sacrificing the ability to deliver services. Increasing expenditures, shrinking internal revenue, and growing service demands have threatened the fiscal stability of local governments in developing countries like Nepal.

Annapurna Rural Municipality (ARM), Kaski, Nepal is one of local governments under the federal system of Nepal. After thepromulgation of the Constitution on 2015, Nepal transitioned to a federal system with three levels of government (federal, provincial, and local) in order to promote decentralization, balanced development, and local decision-making (Shrestha, 2019). Local governments are provided with much greater authority for managing multiple things such as Education, Health Services, Agriculture, and Infrastructure Development etc., through restructuring. This restructuring was designed to strengthen the power of local governments by allowing them to have more control over their own areas of responsibility. However, it created new financial difficulties for many of these rural municipalities that did not have strong economic foundations and therefore could not afford to implement many of the programs and services envisioned by the new system. ARM, like others, suffers from weak internal revenue generation and weak capacity for sound financial management. Its revenue structure is based on internal revenues (taxes, service charges, and fees) and external revenues (grants and fiscal transfers from upper tiers of government). ARM, however, depends heavily on these external transfers for its finances, and is therefore a weakly financially autonomous and fiscally unsustainable unit (Oates 1999).

Fiscal Federalism, as established by Oates (1972), is the theoretical basis for understanding the allocation of financial resources at the local level when there is decentralization of financial resources. Local governments are closer to their citizens and have greater knowledge about the needs of local constituencies; therefore, they have the ability to allocate resources more efficiently based upon the preferences of their local constituencies (Oates, 1999). Local governments have financial autonomy to generate and manage revenue, but this financial autonomy is accompanied by accountability mechanisms to ensure they operate transparently and efficiently (Oates, 1999).

Nepal's federal system gives local governments, including ARM, significant responsibility for fiscal and developmental issues and expects them to act as self-sustained entities that design and execute programs based on local requirements. As most municipalities are largely dependent on fiscal transfers for their basic costs, this contradicts the concept of fiscal federalism, which seeks to ensure that local governments have enough financial independence to serve their constituents without having to depend on higher levels of government.

The practical limitations of fiscal decentralization are demonstrated by ARM's dependence on outside grants. Federal transfers are necessary to support newly formed local governments, but relying too much on them leads to structural inefficiencies. Municipalities' ability to prioritize spending in accordance with local needs is hampered by the conditionalities that frequently accompany external transfers (Kandel and Rijal, 2019). This dependence creates an aggressive cycle of fiscal dependence by decreasing the incentive for local governments to establish Agriculture and tourism, which are primary sources of internal revenue for ARM.

Being a municipality located near Annapurna Conservation Area, it attracts local and foreign visitors and has the potential to generate a significant amount of revenue through taxes and permits associated with tourism activities (Gurung, 2021). However, due to issues associated with tax management and a lack of financial budget for revenue mobilization efforts, this revenue continues to be under-generated. Likewise, there are other sectors such as agriculture, which have revenue generation opportunities through local taxes and market fees; however, a lack of proper enforcement and outdated policy documents hamper efficient revenue generation.

According to financial statements of ARM, a large chunk of the ARM's yearly budget is allocated for recurrent expenditures like salaries, maintenance, and administrative expense. Although it is not optional spending, it affects ARM's capability to invest in developments due to their prominence in the budget (Sapkota, 2020). Financial inefficacies in the entity get exacerbated by inefficient financial management practices and delays in budget and project implementation utilization (Pokharel, 2021). Not only does it compromise entity functionality, but it also erodes community confidence in such entities.

Financial stability depends on sound accountability and governance. Recurrent problems like fund misappropriation, inadequate record-keeping, and weak financial oversight are exposed by audit reports and empirical evaluations of ARM. Inadequate internal controls and a lack of transparency mechanisms are the main causes of these issues. Inadequate accountability makes it possible for fiscal irregularities to continue, which lowers public trust and results in wasteful resource use (Dahal and Acharya, 2021). Therefore, creating strict monitoring systems, carrying out frequent audits, and encouraging public involvement in budgetary procedures are necessary for strengthening governance.

Transparent accountability devices, such as financial audits and public expenditure reviews, are key for averting corruption and making sure that resources are well applied (Hope 2000). As part of ARM, Participatory budgeting models that allow citizens to participate in fiscal choices might also serve to increase transparency and contribute to enhanced performance. As per Bird and Vaillancourt (2006), financially healthy local governments are able to supply services, foster accountability, and develop in a sustainable manner. On the basis of their comparison of fiscal decentralization across developing countries, there were better developmental results in those municipalities with greater financial control and capability.

In a developing country, Bahl& Linn (1992) examined the finances of local government and concluded that recurrent spending included administration and personnel costs, which accounted for a substantial portion of their finances and left very little for development, which reflects the nature of the fiscal pattern in the ARM. The role of quality governance in ensuring fiscal viability cannot be overemphasized, and Hope (2000) confirmed this by pointing out the importance of a good accountability mechanism in preventing corruption and misuse of funds.

A major issue for developing countries today is how they generate internal revenue. The two major underlying issues affecting the financial stability of rural municipalities are the ineffective management of their tax collections and their lack of capacity to properly manage revenues through local governmental institutions (Olowu&Wunsch, 2004). Olowu and Wunsch (2004) recommended that in order for developing countries to properly generate internal revenue, they should seek to increase citizen participation and develop new and innovative sources of revenue. This is especially true in the case of ARM; there are many issues that lead to low levels of internal revenue generation in ARM, including poorly trained staff, obsolete maps of land, and overbearing tax collection processes (Pokharel, 2019).Ahmad and Brosio (2009) examined fiscal dependency within South Asian countries, concluding that excessive fiscal dependency between levels of government reduces the fiscal autonomy of locales. Dependence on transfers prompts locales to shun development opportunity schemes and disregard development of sustainable revenue sources, which is particularly relevant to ARM.

The concern of excessive external reliance by ARM has resulted in a moral issue.In a developing country, Bahl& Linn (1992) examined the finances of local government and concluded that recurrent spending included administration and personnel costs, which accounted for a substantial portion of their finances and left very little for development, which reflects the nature of the fiscal pattern in the ARM. The role of quality governance in ensuring fiscal viability cannot be overemphasized, and Hope (2000) confirmed this by pointing out the importance of a good accountability mechanism in preventing corruption and misuse of fund.

Kandel and Rijal (2019) point out that federal transfers help sustain local governments but often come with restrictive requirements attached, limiting the fiscal discretion of local governments. Pokharel (2019) found that rural municipalities did not take full advantage of their opportunities to collect land taxes and tax on tourism due to limitations placed on them by the lack of institutional capacity. Sharma and Koirala (2020) identified the differences in financial performance between urban and rural municipalities in the Gandaki province and noted that rural municipalities are lagging behind in terms of revenue generation due to the lack of economic activity and the lack of training of municipal staff.

As per the analysis by Sapkota (2020), recurrent spending often exceeded 60% of the overall budget, leaving limited budgets for development programs. The findings by Gurung and associates (2021) substantiated the previous findings, establishing that development goals could be achieved by municipalities that had effective management of finances. Dahal& Acharya (2021) discussed the elements of poor governance in rural municipalities, attributing poor management and occasional auditing as factors for poor efficiency and embezzling of finances. According to Subedi&Regmi (2021), it is apparent that many municipalities in Nepal still fall short in attaining financial sustainability owing to rising recurrent costs and decreased internal revenue. Similarly, Adhikari&Ghimire (2022) discussed the importance of citizen participation in improving financial efficiency and accounting by establishing that increased participation by citizens has positive impacts on financial efficiency and accounting.

Financial stability at the subnational level is impacted by the relationship between the autonomy of finances, the role of grants, expenditure control, and the efficiency of institutions themselves. Sharma et al. (2025) found that many municipalities face financial problems due to the limited capacity to generate finances and due to the reliance on grants, leading to an inefficiency gap in financial performance and SOE development. The key is to allow diversification in the finance structure and improve autonomy to increase the financial well-being of municipalities. According to the findings of research conducted by Kluza and Wójtowicz (2025), intergovernmental financial grants have the capability to improve or undermine financial stability at the local level. It is found that total subsidies can prevent local taxation efforts and undermine financial autonomy. Some specific grants may stimulate local investment but could increase the level of debt.

Fiscal centralization and social conflict may impair the efficiency of the fiscal system, suggesting the impact of political and socioeconomic factors on the financial condition of subnational levels of administration. Morales Rocha et al. (2025) have shown how in countries where the fiscal system is centralized, together with the absence of stability in societal conditions, the efficiency of public spending at the subnational level is impaired. According to both the IMF (International Monetary Fund) report (2025) and World Experience, a country may prevent crises even under very decentralized structures by achieving intergovernmental policies that achieve balance, assuming they do not have to rely on deficit spending at the subnational (SNA) levels.For the federalism in Nepal to remain stable in the long run, financial stability analysis has become a necessity. Thus, various questions are pertinent in this study which are:

i. The trends and patterns of internal revenue generation,
ii. Reliability in revenue sources to fund its operations and development activities,
iii. The expenditure structure,
iv. Extent of relying on external grants for the funding needs,
v. The growth trajectory of internal revenue over time.

Under the stated theoretical base, the objective of this study is to analyze the practice on the financial stability of the local government with focus to:

i. The trends and patterns of internal revenue generation and its reliability
ii. Evaluating the expenditure structure
iii. State of external grants.
iv. The growth of internal revenue over time.
v. And,assess financial capacity, autonomy and sustainability of ARM.

Local governments are important partners in bringing development and in delivering critical services like education, health-care and infrastructure. To perform these functions effectively and in a sustainable manner, the maintenance of financial stability is defined as the ability to generate sufficient internal revenue, effectively manage expenditures and reduce external grant dependencies is of paramount importance.

This study offers objective views about the financial position of ARM. However, it has certain limitations. The study is based only on quantitative data from one (1) municipality and does not consider the influence of other, broader regional, socio-economic, policy and environmental factors on ARM's financial stability. Also, because the study relied on secondary data only, informal and/or unrecorded financial activities and transactions may have been excluded from consideration. Nevertheless, it does provide valuable evidence regarding improvements to fiscal autonomy, better financial management and sustainable local governance in Nepal.

Methodology

This research takes a mixed research methodology in which both descriptive and analytical approaches are used to perform complete research for the financial stability at a rural level. The descriptive structure is aimed at identifying and explaining the patterns of revenue generation, expenditure patterns and dependence on external grants. This approach helps to present detailed and systematic picture of fiscal performance and illustrates how financial management practices have been evolved in the perspective of Federal restructuring in Nepal.

To understand how the various factors related to fiscal sustainability interact with each other and their overall effect, the correlational design studies the association or relationships between key financial indicators of the ruralmunicipality, such as the amount of internal revenue generated, how the rural municipality money is spent, and the level of external grant assistance received by the it. Additionally, through this method, it is possible to look at the interrelationships between local governments' fiscal dependency, autonomy, and growth trends and conduct an in-depth examination of the causal influences on local government financial activity.

The study relies solely on secondary data obtained from ARM´s audited financial statements for the years 2074/2075 through 2079/2080. Since the examination of local governments' financial adaptation processes within the context of the new fiscal policies and practices will be limited to the six years after the Federal restructuring process.

The primary analytical tool used in the study is financial ratio analysis. Several ratios like Financial Independence Ratio (FIR), Financial Dependency Ratio (FDR), and Revenue Growth Ratio (RGR) are used. These ratios makeeasier to compare financial performance of ARM over several years and helps in the interpretation of trends in efficient spending and revenue management.

The population of this study includes all 753 local governments in Nepal comprising six metropolises, 11 sub-metropolises, 276 municipalities, and 460 rural municipalities. The Annapurna Rural Municipality was selected as the research location due to research convenience. Due to the believe that the ARM represented a typical rural governance structure within Nepal and address the requirement of dataand relevance to the core research question.

Result

The financial ratios that are used in the analysis of the financial performance of the Annapurna Rural Municipality are financial independence ratio, financial dependency ratio, expenditures ratios based on the current and capital expenditures, revenue growth ratio and development expenditure ratios. The data on which this research is based was published in the official site of Comptroller and Auditor General of Nepal. The ratios obtained gives the clear picture of the financial status of the Annapurna Rural Municipality (ARM). The Financial Independency Ratio (FIR) show how the ARM has been able to meet the expenditure it has been made by its internal means while Financial Dependency Ratio (FDR) does the opposite of FIR. FDR provides the idea regarding how many parts of the total expenditure is being funded by the central government and other funding.

Table 1

Financial Performance Analysis

Description	Year						Average
	2074/75	2075/76	2076/77	2077/78	2078/79	2079/80	
FIR	3.47	2.56	3.14	3.35	4.46	0.21	2.87
FDR	96.53	97.44	96.86	96.65	95.54	99.79	97.13
ER current	58.63	49.95	42.51	64.45	43.28	64.08	53.82
ER capital	20.43	32.83	33.98	35.51	29.13	34.76	31.11
DER	20.90	36.49	56.89	35.75	56.11	37.09	40.54
RGR	-	2.45	19.65	15.07	33.72	- 2641.57	-428.45

Table 1 shows the financial performance of ARM over six fiscal years (2074/75-2079/80). It uses financial ratios to illustrate ARM's overall financial health and sustainability. The financial ratios that were reviewed include the Financial Independence Ratio (FIR), Financial Dependency Ratio (FDR), Current Expenditure Ratio, Capital Expenditure Ratio, Development Expenditure Ratio and Revenue Growth Rate (RGR). From these financial ratios, we can see how well ARM manages income, expenditures, and dependence upon financial assistance.

The Financial Independence Ratio (FIR) measures the percentage of revenue generated internally, and although it appears very low during the entire period at an average of 2.87%, it indicates that ARM earns less than 3% of total revenues from its sources of revenue like local taxes or service charges. A low FIR indicates that ARM has weak internal resource mobilization. The Financial Dependency Ratio (FDR) has an average FDR of 97.13%, which indicates that ARM receives almost all of its income from outside sources, including grants and transfers from the federal or provincial government. The consistently high values of the FDR indicate that ARM is highly dependent on outside funding, thus making it susceptible to changes in national fiscal policy.

The Current Expenditure Ratio (ER_current) has varied from 42.51% to 64.45% with a mean of 53.82%, where over half of the municipality's budget is used for operational and administrative expenses, including salaries and facility upkeep. Thus, there is little left over for investment in long-term growth. On other hand, the Capital Expenditure Ratio (ER_capital) has average of 31.11% which indicate a slight commitment toward developing infrastructure and projects. However, it also demonstrates a low ratio compared to current expenses. The disparity between these two ratios indicates a lack of proper management of expenditures, with excessive stress on normal expenditures vice developing local resources.

The Development Expenditure Ratio (DER), which measures the percentage share of total development program expenditure as a proportion of total government expenditure, is an average of 40.54% but varies between 20.90% in 2074/75 and 56.89% in 2076/77. These variations indicate that there is inconsistent development planning and is heavily dependent on external funding sources.

The Revenue Growth Rate (RGR) has had the highest variability of all the measures and has experienced years of growth (19.65% in 2076/77 and 33.72% in 2078/79), as well as a significant decline of -2641.57% in 2079/80. The average negative growth (-428.45%) indicates that there has been a significant decrease in internal revenue collections, which may be attributed to ineffective collection practices and/or an over-reliance on non-permanent revenue sources.

The financial situation of ARM is illustrated in the table by pointing out that the Municipality's financial strength is not sound and continues to rely heavily on external sources for funding (grants), experience a great deal of volatility in its expenditures, and experience an uncertain trend for revenue. To ensure long-term fiscal health, the ARM needs to generate more revenues internally, continually monitor its expenses more efficiently, and focus consistent attention to developing and investing in capital.

Table 2

Descriptive Statistical Analysis of financial performance

	Median	Std. Deviation	N
FIR	2.87	1.44	6
FDR	97.13	1.44	6
ER_current	53.82	9.96	6
ER_capital	31.11	5.69	6
DER	40.54	13.76	6
RGR	-514.14	1189.32	5

The descriptive analysis of six key financial ratios for the ARM is shown in the Descriptive Statistical Table above for six years of ARM's operation. The Financial Independence Ratio (FIR) has a median of 2.87 with a standard deviation of 1.44 and indicates limited financial independence but a more stable pattern to its performance. The Fiscal Dependency Ratio (FDR) has a median of 97.13 and a standard deviation of 1.44 and shows that the ARM relies significantly on outside government grants and transfers for funding with little variation over the years.

The Current Expenditure Ratio (ER_Current) has a median of 53.82 and a standard deviation of 9.96 which indicates that a large portion of budgeted funds is being utilized for offices expences. However, there is a relatively moderate amount of fluctuation associated with this figure. The Capital Expenditure Ratio (ER_Capital) has a median of 31.11, suggesting a lesser degree of emphasis is placed on capital expenditures. The capital expenditure ratio has a relatively consistent standard deviation (5.69). The Development Expenditure Ratio (DER) is moderately conservative, with a median of 40.54 and a relatively greater variance (13.76) than the ER_Capital as presented above and indicates that ARM does not completely rely on development expenditure financing. The Revenue Growth Rate (RGR) is reflected by a negative median (-514.14) with a relatively large standard deviation (1189.32) which indicates excessive volatility and potential inefficiency in financial management. ARM appears stable regarding its expenditure ratios, but may be challenged in terms of revenue growth and self-sufficiency.

Table 3

Pearson Correlation Matrix of Financial Performance of Annapurna Rural Municipality

Variable	FIR	FDR	ER_current	ER_capital	RGR	DER
FIR	1	−1.000**	−0.529	−0.412	0.903*	0.258
FDR	−1.000**	1	0.529	0.412	−0.903*	−0.258
ER_current	−0.529	0.529	1	0.052	−0.584	−0.751
ER_capital	−0.412	0.412	0.052	1	−0.344	0.473
RGR	0.903*	−0.903*	−0.584	−0.344	1	0.382
DER	0.258	−0.258	−0.751	0.473	0.382	1

N = 6 (RGR N = 5).
**p< .05 (two-tailed).*
***p< .01 (two-tailed).*

The correlation coefficient depicts relationships between important financial ratio data points for Annapurna Rural Municipality (ARM). The analysis reveals the way in which ARM has behaved fiscally and how it achieves fiscal sustainability. In addition, there exists a strong positive correlation between the Financial Independence Ratio (FIR) and the Fiscal Dependency Ratio (FDR) (Correlational Coefficient = 1.000, significant at P < 0.01), (Table 3). Therefore, the correlation indicates a strong relationship between the two ratios, indicating that as ARM's level of independence (FIR) increases, so does its dependence (FDR).

The Revenue Growth Rate (RGR) has a strong positive correlation with FIR (Correlational Coefficient = 0.903, significant at P < 0.05) and a moderate to strong negative correlation with FDR (Correlational Coefficient = -0.903, significant at P < 0.05). Therefore, when ARM is independent financially (FIR), it typically experiences an increase in revenue growth. Conversely, when the level of dependence on external sources increases (FDR), there is usually a decrease in revenue growth. While the correlation analysis shows a connection between revenue generation through self-reliance and revenue generation through continued growth, the findings also suggest that an ARM's self-reliance on revenue generation directly correlates to its sustainable financial growth.

The Current Expenditure Ratio (ER_current) and Capital Expenditure Ratio (ER_capital) show weak and statistically insignificant correlations with FIR, FDR, and RGR. This indicates that the municipality's expenditure distributionbetween recurrent and capital spendingdoes not have a major direct influence on its financial independence or dependency levels. Similarly, the Debt-Equity Ratio (DER) shows no significant correlation with any other variables, suggesting that borrowing practices and debt management are largely independent of other fiscal behaviors.

A strong correlation exists between revenue growth and financial independence, as shown by this correlational analysis. External dependency may negatively influence fiscal stability. Thus, based upon these findings, ARM should emphasize internal revenue generation and mobilization but limit reliance on external grant funding. ARM must avoid external grants and fundings as means of achieving fiscal sustainability and self-sufficiency over the long-term through improved fiscal resilience and appropriate planning for development.

Table 4

Normalized Values of financial ratios

Year	FIR	FDR	ER_current	ER_capital	DER	RDR	Stability Score
2074/75	*0.767*	*0.233*	*0.735*	*0.000*	*0.000*	*0.987*	*0.454*
2075/76	*0.553*	*0.477*	*0.339*	*0.822*	*0.433*	*0.988*	*0.597*
2076/77	*0.689*	*0.311*	*0.000*	*0.899*	*1.000*	*0.995*	*0.649*
2077/78	*0.739*	*0.261*	*1.000*	*1.000*	*0.413*	*0.993*	*0.734*
2078/79	*1.000*	*0.000*	*0.035*	*0.577*	*0.978*	*1.000*	*0.598*
2079/80	*0.000*	*1.000*	*0.983*	*0.950*	*0.450*	*0.000*	*0.564*

It can be seen how Annapurna Rural Municipality's Financial Position has changed over the course of 6 fiscal years, initially showing good progress towards financial independence as evidenced by the steadily improving and peaking financial independence ratios represented in the years 2078/79, meaning at that time the Municipality was generating enough of its own revenue, (Table 4). Unfortunately, this progress did not last long as in the following year 2079/80 the level of internally generated income decreased significantly leading to a circumstance whereby the municipality became reliant on external grants for almost all of its funding. The shift illustrated by the fiscal dependency ratio, which reached its peak during that final year of the study.

By contrast, capital expenditures have been stable over a number of years and imply that ARM has consistently made long term investments and capital developments, despite volatility in other categories. Growth in revenues followed the same general pattern as capital expenditures, in that growth was consistent over a period of several years and then plateaued and dropped significantly during the last year, indicating that there was substantial local revenue sources lost to ARM. The data developed in the Stability Score correlates with these trends in that it gradually improves during the earlier part of the review period and then declines during the latter part of the review period. This would indicate that ARM made significant progress toward financial support and stability during the earlier part of the overall review period but that additional instability began to emerge as the review period progressed, thus raising questions of whether ARM can continue to operate successfully as a business while obtaining sufficient financial resources.

Findings

- The municipality’s financial independence is very low, indicating weak internal revenue generation capacity.
- Fiscal dependency remains extremely high, suggesting that ARM’s operations are heavily supported by federal and provincial transfers.
- Current expenditures dominate over capital expenditures, showing a focus on administrative expenses rather than long-term investments.

- The Debt-Equity Ratio indicates a moderate level of borrowing, which does not pose immediate fiscal risk but suggests room for more strategic debt management.
- The Revenue Growth Rate shows large fluctuations, signaling unstable revenue trends and weak financial planning.
- Correlation analysis reveals a strong positive relationship between financial independence and revenue growth, and a strong negative correlation between fiscal dependency and revenue growth.
- Expenditure ratios (ER_current and ER_capital) do not show strong correlations with fiscal or revenue indicators, implying inefficiencies in expenditure allocation.
- The financial data overall highlights that ARM's fiscal sustainability is compromised by over-dependence on grants and inconsistent internal financial growth.
- Dependence on external grants became absolute in the final year.
- Capital expenditure performance remained strong in most years, reflecting a focus on development projects.
- Current expenditure efficiency showed high volatility, indicating inconsistent financial management.

Discussion

The financial ratio analysis of Annapurna Rural Municipality (ARM) over six fiscal years reveals critical insights into its fiscal structure, resource mobilization capacity, and long-term sustainability. The findings collectively indicate that ARM operates with severely constrained internal revenue generation and an overwhelming dependence on intergovernmental fiscal transfers, a pattern widely documented among local governments in developing economies (Smoke, 2001; Fjeldstad &Heggstad, 2012).

The Financial Independence Ratio (FIR), averaging just 2.87%, underscores ARM's limited capacity to self-finance its operations through own-source revenues such as local taxes and service charges. This aligns with Bahl and Linn (1992), who argued that fiscal autonomy in sub-national governments of low-income countries remains structurally constrained due to narrow tax bases and weak administrative capacity. Correspondingly, the Financial Dependency Ratio (FDR) of 97.13% reflects near-total reliance on federal and provincial grants, corroborating findings by Gurung (2020), who identified similar dependency patterns among Nepalese rural municipalities following the 2017 federal restructuring. Such dependency exposes ARM to fiscal vulnerability, as any contraction in central transfers could severely compromise service delivery and developmental functions (Shah, 2004).

The expenditure analysis further reveals a structural imbalance, with current expenditures (mean: 53.82%) consistently surpassing capital expenditures (mean: 31.11%), suggesting that administrative and recurrent costs absorb the majority of available resources, leaving limited fiscal space for productive investment. This pattern is consistent with Adhikari (2018), who noted that Nepalese local bodies disproportionately allocate budgets toward administrative overhead rather than capital formation. The Development Expenditure Ratio, though moderate at 40.54%, exhibited considerable inter-annual volatility, reflecting inconsistent development planning; an issue attributed by Thapa (2021) to irregular disbursement of conditional grants.

The Revenue Growth Rate's extreme volatility (standard deviation: 1,189.32), culminating in a dramatic decline in 2079/80, signals systemic weaknesses in revenue forecasting and collection mechanisms. The strong positive correlation between FIR and RGR ($r = 0.903$, $p <$

.05) further reinforces that fiscal self-reliance directly supports sustainable revenue trajectories, whereas external dependency suppresses long-term growth potential (Musgrave & Musgrave, 1989). These findings collectively highlight the urgent need for ARM to strengthen own-source revenue mobilization, rationalize recurrent expenditures, and pursue strategic capital investments to achieve genuine fiscal sustainability.

Conclusions

It is observed from the findings that the major challenges for Annapurna Rural Municipality, in relation to fiscal management, lie in their high levels of dependency on external grant sources, in addition to their limited ability to mobilize their own resources. The financial ratios reveal that there is fiscal structure inconsistency on the part of the Municipality, where most of their resources are employed in operational expenditure, and not in capital expenditures. Moreover, there is instability in revenue growth, which implies that there is limited fiscal planning for the long run and that fiscal management is not a continuous process. Yet, because there is a positive correlation between financial independence and revenue growth, this implies that there is room for improvement in terms of increased mobilization of resources and increased fiscal independence. As such, ARM can overcome their dependency on transfers from Centre and increase their self-sustainability by increasing internal revenue sources such as taxes, service charges, and Business Tax Revenue, in addition to increasing their control over expenditure and capital investment, which might help in their ability to attain sustainable stability in their economic environment in the long run. Finally, in conclusion, financial governance, transparency, diversification, and improvement in fiscal governance and management remain essential elements if ARM is to attain sustainable and well-balanced fiscal and financial growth and development in their governance and management processes.

The implications of this study have been practical and policy-related. For the policymakers and the local authorities, the findings of the study have highlighted the imperative need to accelerate fiscal decentralization and enable local governments to create and manage more of their own finances. This has been proposed to be achieved through tax reforms and improved local tax collection, and implementing innovative financial resources such as tourism, local business development, and public-private partnerships. Moreover, capacity-building programs should also be introduced for improved financial management capacities of local authority personnel.

From a governance point of view, it can be inferred that there is a need for balancing financial discipline in order to yield fiscal stability. The ARM needs to work on the optimal spending pattern, cutting down on unproductive expenditure incurred in administrative work, while increasing investment in the infrastructural and community development sectors. Moreover, financial planning in collaboration with data analysis could help the municipality in identifying potential financial threats, which can significantly help in decision-making regarding financial policies. While Annapurna Rural Municipality experiences dependency, there are also some positive aspects in the financial condition, which can bring about a positive transition in the financial stability, hence significantly contributing towards the objectives under fiscal federalism in Nepal.

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Impact of Major Tax Components and Their Determinants on Tax Revenue in Nepal

Satya Raj Kandel
Lecturer, Triveni International College, PhD Scholar

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Corresponding Author:
kandelsatyaraj123@gmail.com

Abstract

This study investigates the impact of major tax components—income tax, value added tax, and excise duty—on tax revenue in Nepal. It also examines the determinants influencing tax compliance behavior, including institutional performance, taxpayer awareness, corruption, and trust in the tax system. Furthermore, the study aims to explore the relationship between these determinants and overall tax revenue performance. The study adopts a positivist philosophy and employees both descriptive and causal research designs. Both primary and secondary sources of data were used. This study applies descriptive statistics, correlation, and regression analysis to examine the relationships among tax determinants, compliance behavior, and total tax revenue.

The findings reveal that weak tax payment behavior is common and primarily linked to lack of incentives for compliant taxpayers, corruption in the public sectors, and limited tax knowledge. A strong and statistically significant relationship is observed between the determinants of tax non-compliance and weak tax payment behavior. Furthermore, major tax components—income tax, value added tax, and excise duty are positively associated with total tax revenue. However, their impact as an individual is insignificant, which indicates that tax revenue in Nepal is affected by the joint relationship between tax elements and not by individual effects. In general, the role played by behavioral and institutional factors is much more significant than economic factors alone. The study suggests enhancing institutional quality, awareness of taxpayers, and compliance mechanisms to enhance revenue collection. Future research may use broader geographical areas, additional macroeconomic variables, and longitudinal approaches to examine policy effectiveness.

Introduction

The government requires sufficient revenue to support development projects, maintain daily operations, ensure peace and security, and conduct welfare programs. In order to satisfy these requirements for income, governments generate revenue through multiple avenues, which can be divided into tax and non-tax revenue. While tax revenues come from compulsory payments made by people and organizations such as income tax, customs duties, excises, value-added tax (VAT), and services tax among other forms of taxes by the central and local governments, non-tax revenues are derived from grants, fines, charges, and payments not related to any tax. Although both sources are relevant, tax revenues remain the primary source of government finance. Modern taxation is usually categorized into direct taxes and indirect taxes. While the former refers to taxes that cannot be passed along to others and thus the burden falls on the person taxed, such as income taxes, property taxes, and wealth taxes, the latter consists of taxes that are shiftable and include VAT, customs duties, excises, service taxes, among others. Major components of taxes refer to the main basic forms of taxes that make up a considerable share of the total tax revenue derived from both individuals and organizations. These include income tax, VAT, and excise duty, among other forms of taxes. In Nepal, indirect taxes constitute a substantial portion of total government revenues, and direct taxes also contribute significantly to economic growth (Bhattarai, 2024). Among direct taxes, income tax is especially important in terms of its contribution not only to government finance but also to wealth distribution and tax policy efficiency. Income tax is collected from both individual citizens and companies, where the latter are taxed on their income less expenses (Goode et al., 2024). Yet, income tax is extremely susceptible to tax evasion as compared to commodity taxes. In this regard, Allingham and Sandmo (1972) emphasize that the structure of income tax encourages non-compliance since there is an incentive to understate income and tamper with accounting documents. This makes income tax administration an important challenge in the development context of Nepal. According to the Annual Report of the Inland Revenue Department Nepal (Fiscal Year 2081/82 B.S.), the tax-GDP ratio is 17.19%, whereas the income tax is 44% of the total tax revenue. Both values indicate lower performance when compared to developing countries. This indicates the poor ability to collect taxes. Furthermore, transparency international (2025) also placed Nepal at the 109th position out of 182 countries on the Corruption Perception Index. Based on the above analysis, it is clear that through tax evasion, the government is unable to collect revenues to finance investments in infrastructure, health services, and education. Tax evasion in Nepal therefore impacts economic development and sustainability. In addition to sales tax, value added tax (VAT), which is also an indirect tax, is levied at all stages of production and distribution as a consumption tax. Even though VAT increases the efficiency in terms of collecting revenues, this kind of tax is regressive and can cause high inflation and compliance costs. VAT was imposed recently in Nepal, which is managed by the Inland Revenue Department. The normal VAT rate is 13%, which provides 25% of total tax revenues (IRD, FY 2081/82 B.S.). Like sales tax, VAT is also vulnerable to evasion in the form of fake bills. In Nepal, excise duty is an indirect tax on certain goods (such as alcohol, tobacco, petroleum, automobiles). The excise duty tax is charged at the time of manufacturing or importing to earn government revenue and reduce their consumption. Excise duty rates differ from one product to another, depending on the budget, and provide 21% of total tax revenue (IRD, FY 2081/82 B.S.). Excise tax is significant as a means of taxation since it is easy to collect and causes less economic distortion compared to other taxes. It can also be used to deal with public policy issues, such as public health and the environment (Cnossen, 2022). The main elements and factors determining tax revenue are grounded on economic and behavioral theories that are interrelated to one another, and through which we can understand how the tax system works in underdeveloped countries like Nepal. According to the ability-to-pay theory (Pigou, 1920; Musgrave, 1959), taxes can be levied on the basis of income and wealth, especially income tax in Nepal. Keynesian fiscal principle (Keynes, 1936), tax receipts are connected to the level of economic activity, implying that increased GDP would increase the taxable bases such as VAT, income tax, and excise duty. As per Tax compliance theory (Allingham & Sandmo, 1972), tax avoidance is a result of rational behavior driven by penalties and enforcement. Lastly, structural change theory, postulated by Kuznets (1966), explains how structural changes in economy through industrialization and services expansion expand the tax base. The existence of an efficient and effective tax system is considered a major determinant of the success of the nation's development (Adhikari, 2024). In this case, the role played by the issue of tax compliance is significant when it comes to the efficiency of tax systems especially those that enjoy institutional trust (Kirchler, 2007). However, in Nepal, weak institutional trust has contributed to tax evasion, reflecting underlying governance challenges (North, 1990). This suggests that tax collection performance is not an issue which depends on the economy alone, but rather also depends on good governance and citizens' trust in the public institutions. In addition to institutional reasons, behavioral reasons also affect tax compliance. Fairness, morality, and social norms are among the factors shaping the decision-making process of taxpayers (Torgler, 2007). On the other hand, tax evasion motivated by elites substantially impacts the compliance level because it promotes inequality and injustice (Snider, 2000, 2024). Therefore, when elites evade taxes, it negatively impacts the moral commitment of other taxpayers, implying that there is a need to enhance equality in the enforcement process in order to improve compliance levels. Additionally, tax evasion is also determined by motivational factors in addition to situational determinants, which include attitudes, perceptions, and moral considerations (Weigel et al., 1987). Consequently, policies aimed at addressing the issue need to consider both enforcement strategies and behavioral changes to address the motivational aspects of taxpayers. Considering indirect taxes specifically, value added tax (VAT) is known to be an important source of income for the state around the globe, thereby ensuring financial stability and sustainability (Poudel, 2023; Mgammal et al., 2023). This is due to the fact that VAT, if well managed by authorities, can become an important revenue source for governments. Nevertheless, the effectiveness of VAT largely relies on variables like tax rate, tax exemption policies, and compliance level (Poudel, 2023). Moreover, complicated VAT mechanisms usually cause tax evasion (Kotwal & Przekota, 2021).

In the context of Nepal, the reforms in the policy of VAT have been associated with positive revenue outcomes owing to higher compliance rates and economic activity (Acharya, 2016; Koirala, 2022). This suggests that policies that are changed according to improvements made in the administrative processes may generate desirable outcomes. However, at the same time, administrative inefficiencies and complex procedures constitute major obstacles in enhancing the impact of VAT (Mascagni et al., 2022). Additionally, several studies indicate that VAT compliance is likely to improve when taxpayers become more aware about their obligations and regulations are implemented strictly (Gawali, 2018; Sharma, 2017). Furthermore, VAT regulations also play a major role in economic development and business expansion (Wang et al., 2024), meaning that VAT can be seen not merely as a tool for collecting revenue, but also as an enabler for achieving more economic results. Apart from VAT, excise taxes also constitute a significant element of indirect taxes. While it is true that excise rates have been standardized in some areas, like the European Union, with the goal of facilitating market integration, the emergence of new discrepancies between nations implies that there is a tendency towards de-harmonization (Zhelev, 2022).

Despite the abundance of literature, most of the existing studies on taxation in Nepal have focused on examining individual taxes such as income tax or value added tax (VAT). Hence, very limited research work has been completed regarding the relationship among the important taxes such as income tax, VAT, and excise tax, and their combined effect on total tax revenue and tax compliance behavior. In addition, none of the prior literature has successfully incorporated institutional, behavioral, and economic perspectives into one integrated perspective. Hence, to address these above gaps, the present study aims to identify the key drivers of the major components of taxes, along with their effects on tax compliance in Nepal. The following null hypothesis have been developed to determine the significant relationships between different variables.

H01: There is no significant relationship between the determinants of tax revenue and tax compliance.

H02: There is no significant relationship between income tax, value added tax, excise duty and total tax revenue in Nepal.

H02a: There is no significant relationship between income tax and total tax revenue in Nepal.

H02b: There is no significant relationship between value added tax and total tax revenue in Nepal.

H02c: There is no significant relationship between excise duty and total tax revenue in Nepal.

Methodology

The study is based on a positivist paradigm because it involves objective measurement of variables and hypothesis testing. The research design used in this case is both descriptive and causal research design. This research design aims at investigating the effects of three key taxes, namely income tax, value-added tax (VAT) and excise duties on total tax revenue of Nepal over a period of eleven years from fiscal year (FY) 2071/072 to FY 2081/082 B.S. In order to conduct descriptive analysis, the present study used mean and standard deviation techniques of statistics. For inferential analysis, correlation and regression analysis have been conducted. This research study has been carried out using both primary and secondary sources of data. Primary data was collected from the respondents in Pokhara Metropolitan City using questionnaires. These questionnaires were distributed to taxation lecturers, auditors and registered taxpayers of Nepal's Inland Revenue Department. The secondary data used in this study was gathered from annual reports of the Inland Revenue Department of Nepal. The estimation of the exact population was not possible because there was overlap between the value added tax, income tax and excise duty segments since one person might appear in all the three categories. Hence, a judgmental sampling strategy was adopted, and a sample size of 384 respondents was chosen. The analytical procedures adopted included descriptive statistics and inferential statistics. Regression analysis was also applied to explore the reasons for tax evasion and poor tax payment attitudes. Lastly, diagnostic tests, such as the Durbin-Watson test, was used to test for autocorrelation in the regression equation. This regression model analyzes the effect of major elements of taxes on the overall tax revenue in Nepal. The regression model is expressed as:

$TTR = \beta_0 + \beta_1 IT + \beta_2 VAT + \beta_3 ED + \varepsilon$.

In this model, total tax revenue (TTR) is dependent variable while income tax (IT), value added tax (VAT), and excise duty (ED) are independent variables. β_0 refers to the constant or the intercept of the model showing the expected value of total tax revenue where the independent variables equal to zero. The coefficients β_1, β_2, and β_3 refer to the influence of the income tax, VAT, customs revenue, and excise duty, respectively, on total tax revenue. It shows the nature of the relationship between these taxes and total tax revenue. The value of ε shows the error term of the regression line. It shows the impact of those factors on total tax revenue which are not considered by the model.

Result

Table 1 shows self-declarations of the respondents on their attempts to avoid income taxes. Among the respondents, there were 88 people who admitted to avoiding tax, amounting to 22.9% of the total number of participants. This may mean that a quarter of the people are probably engaging in such activities. On the other hand, 252 people (65.6%) declared that they did not avoid taxes. This may mean that a bigger number of the respondents either comply with the law or think they do. Also, there are 44 people (11.5%) who did not declare this information due to uncertainty and hesitation on what to state.

Table 1

Distribution of Respondents by Attempt to Evade Income Tax Payment

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Agree	88	22.9	22.9	22.9
	Neutral	252	65.6	65.6	88.5
	Disagree	44	11.5	11.5	100.0
	Total	384	100.0	100.0	

Sources: Field survey, 2026

From Table 2, the major challenge among all the listed challenges is lack of trust in the use of the generated tax revenue due to its high mean score of 4.58 and low standard deviation (SD) of 0.69. The second-biggest worry seems to be the culture pertaining to tax evasion, as it also scores high with a mean of 4.31 and a SD of 0.53. Concerns such as high and multiple tax rates (mean = 2.63, SD = 0.67) and the complicated system of taxation (mean = 2.08, SD = 0.78) seem to be of lesser concern. The least concerning factor appears to be the factor of “less fines and penalties” since it only scores 1.41 as the mean value with a SD of 0.71.

Table 2

Causes of refusing to pay taxes

Causes of refusing to pay taxes	Valid number	Missing number	Mean	Standard deviation
low trust in the proper use of tax revenue	88	296	4.58	0.69
Because of high and multiple tax rate	88	296	2.63	0.67
Complexities in payment system	88	296	2.08	0.78
Less fine and penalties	88	296	1.41	0.71
Culture of tax evasion	88	296	4.31	0.53

The opinions of respondents regarding weak tax payment behavior among taxpayers in Nepal are presented in Table 3. In total, there were 384 respondents; 84.1% of them agreed, showing their opinion regarding poor tax payment, while 7.0% had no opinion and 8.9% disagreed. It can be said that weak tax payment is common among Nepalese taxpayers.

Table 3

Weak tax payment behavior

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Agree	323	84.1	84.1	84.1
	Neutral	27	7.0	7.0	91.1
	Disagree	34	8.9	8.9	100.0
	Total	384	100.0	100.0	

Sources: Field survey, 2026

Table 4 presents the descriptive statistics of perceived causes of tax non-compliance based on responses from 323 respondents, which were measured using a 5-point likert scale. From the results, it can be concluded that “lack of incentive provision for regular taxpayers” is the most significant cause (Mean = 3.69, SD = 1.48), followed by “corruption in public sectors” (Mean = 3.50, SD = 1.21) and “lack of awareness of tax and its importance” (Mean = 3.38, SD = 1.02). These three variables represent significant behavioral and institutional causes of tax evasion. In contrast, “economic conditions” (Mean = 2.47, SD = 1.19) is a less significant factor, whereas “poor public relations between tax officers” is the least influential factor (Mean = 1.96, SD = 1.30). Overall, the results suggest that institutional and behavioral variables, such as incentive, corruption, and taxation knowledge, are more influential in tax evasion compared to economic and administrative variables.

Table 4

Causes of tax non compliance

	N	Minimum	Maximum	Mean	Std. Deviation
No provision of incentives for regular taxpayer	323	1.00	5.00	3.6904	1.47762
Corruption in public sectors	323	1.00	5.00	3.5015	1.20911
Little knowledge of tax and its importance	323	1.00	5.00	3.3777	1.01834
Economic conditions	323	1.00	5.00	2.4675	1.19055
Poor public relation by tax officers	323	1.00	5.00	1.9628	1.30164

Sources: Field survey, 2026

Table 5 reveals a significant relationship between the causes of tax non-compliance and weak tax payment behavior. Based on the results from model summary, there is a very strong relationship between the independent variables and the dependent because the Correlation Coefficient (R) equals 0.945. Thus, 89.2% of variations in weak tax payment behavior are caused by the causes of tax non-compliance.. It means that only 10.8% of variations can be accounted for other factors than the predictor. Furthermore, there is a similar ratio in Adjusted R Square, which means that the reliability of the statistical model does not change despite the adjustments based on predictors and the number of samples.

Additionally, according to ANOVA table 6, the regression model is highly significant (F-value of 3158.924 with the significance level of 0.000). In other words, the p-value is less than 0.001, which shows a high significance level of the model at the 1% level. Therefore, it can be concluded that the causes of tax non-compliance play an important role in explaining low tax payments.

Table 5

Model Summary: Regression Analysis of Causes of Tax Non-Compliance and Weak Tax Payment Behavior

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.945[a]	.892	.892	.19848

a. Predictors: (Constant), *Causes of Tax Non-Compliance*

Table 6

ANOVA of Regression Model

Model		Sum of Squares	D f	Mean Square	F	Sig.
1	Regression	124.448	1	124.448	3158.924	.000[b]
	Residual	15.049	382	.039		
	Total	139.497	383			

a. Dependent Variable: *Weak tax payment behavior*

b. Predictors: (Constant), *Causes of Tax Non-Compliance*

Table 7 presents the Pearson correlation coefficient matrix between income tax (IT), total tax revenue (TR), value added tax (VAT), and excise duty (ED) for 11 years is presented. According to the results obtained, there is very high positive correlation between all variables, which is statistically significant at the 1% level ($p < 0.01$). There is a high positive correlation between income tax and total tax revenue ($r = 0.976$), VAT ($r = 0.988$), and excise duty ($r = 0.968$). This means that an increase in the amount of income tax is directly linked to a growth in other components. Similarly, a high positive correlation was found between VAT and total tax revenue ($r = 0.978$), as well as excise duty and total tax revenue ($r = 0.976$). Overall, the results suggest a strong interdependence among all major tax components, indicating that an increase in one tax component is related to increases in other components as well as the overall tax revenue. Since all the p-values are less than 0.05, we reject the null hypothesis (H_0) and accept the alternative hypothesis (H_1). Hence, income tax, value added tax and excise duty are positively associated with Total Tax Revenue in Nepal.

Table 7

Pearson Correlation Matrix of Income Tax, Total Tax Revenue, VAT, and Excise Duty

		IT	TR	VAT	ED
Income tax	Pearson Correlation	1	.976**	.988**	.968**
	Sig. (2-tailed)		.000	.000	.000
	N	11	11	11	11
Total tax revenue	Pearson Correlation	.976**	1	.978**	.976**
	Sig. (2-tailed)	.000		.000	.000
	N	11	11	11	11
Value Added Tax	Pearson Correlation	.988**	.978**	1	.969**
	Sig. (2-tailed)	.000	.000		.000
	N	11	11	11	11
Excise Duty	Pearson Correlation	.968**	.976**	.969**	1
	Sig. (2-tailed)	.000	.000	.000	
	N	11	11	11	11

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

IT: Income Tax; TR: Tax Revenue; VAT: Value Added Tax; ED: Excise Duty According to the results obtained from the regression analysis, there exists a highly strong relationship between the dependent variable total tax revenue and the three independent variables, namely income tax, value added tax, and excise internal

As per the findings in Table 8 (Model Summary), the value of R is extremely high (0.985), and the R^2 value is 0.971. This means that almost 97.1% of the total variation of the total tax revenue could be attributed to the three types of taxes mentioned above, while the rest of the variation could be due to other factors, such as health service tax and education service tax. The adjusted R^2 value of 0.958 was also obtained, implying the good fit of the model. from the ANOVA table 9, it could be seen that the entire model was highly statistically significant, with F = 77.591, and $p < 0.001$, indicating that the three independent variables accounted for the total tax revenue. However, according to the coefficient table, all the variables individually had p-values greater than 0.05. The reasons can be either multicollinearity or very small sample sizes. In the case of the data presented above in table 8, there is no presence of serious autocorrelation as the value of Durbin Watson is very low, which is 1.671. Table 10 shows that income tax has a positive sign (0.663), meaning that an increase in the income tax would cause an increase in total tax revenue; however, this independent variable does not have any statistical significance (p-value = 0.670). Value added tax (VAT) has a positive sign (2.406), implying that an increase in this variable would lead to an increase in total tax revenue; this independent variable is also not statistically significant (p-value = 0.445). Lastly, excise duty has a positive sign (3.295); like the previous two independent variables, this independent variable is also not statistically significant (p-value = 0.156). The standardized beta values indicate that the excise duty has the most significant relative effect on the dependent variable, followed by value added tax and income tax; however, none of these effects are statistically significant individually.

Table 8

Model Summary Showing the Impact of Income Tax, VAT, and Excise Duty on Total Tax Revenue

					Change Statistics					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change	Durbin-Watson
1	.985[a]	.971	.958	46.77242	.971	77.591	3	7	.000	1.671

a. Predictors: (Constant), Excise Duty, Income tax, Value Added Tax

b. Dependent Variable: Total tax revenue

Table 9

ANOVA for the Impact of Income Tax, VAT, and Excise Duty on Total Tax Revenue

Model		Sum of Squares	D f	Mean Square	F	Sig.
1	Regression	509229.546	3	169743.182	77.591	.000[b]
	Residual	15313.616	7	2187.659		
	Total	524543.163	10			

a. Dependent Variable: Total tax revenue

b. Predictors: (Constant), Excise Duty, Income tax, Value Added Tax

Table 10

Coefficients of Income Tax, VAT, and Excise Duty on Total Tax Revenue

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	129.999	55.331		2.349	.051
	Income tax	.663	1.494	.195	.444	.670
	Value Added Tax	2.406	2.973	.364	.810	.445
	Excise Duty	3.295	2.073	.435	1.589	.156

a. Dependent Variable: Total tax revenue

Discussion

"Impact of major tax components and their determinants on total tax revenue in Nepal" is crucial research that offers significant findings about tax compliance behavior, tax non-compliance determinants, and the association between major tax components and total tax revenue. The discussion below offers analysis of findings related to these topics.

One of the important findings from the analysis is that tax payment behavior is weak in Nepalese taxpayers. This finding confirms the theory known as the Tax Compliance Theory (Allingham & Sandmo, 1972). This theory argues that tax compliance behavior depends on the level of enforcement, perceived risk and institutional trust. The findings support this because they agree with the theory by North (1990) and Kirchler (2007), who argued that low level of institutional trust makes one unwilling to be compliant with tax laws.

The second finding reveals that the primary reasons behind the problem of tax non-compliance include a lack of incentives for regular taxpayers, corruption within public offices, and poor tax education among taxpayers. The findings provide strong evidence in favor of behavioral and institutional theories of tax compliance, especially Torgler (2007). The author states that tax compliance behavior is mainly influenced by fairness, morality, and trust. In addition, according to Snider (2000, 2024), elite behavior and corruption affect public trust negatively and create tax evasion behavior. The prevalence of incentive and corruption issues indicates that people react to institutional fairness more than economic distress. It is surprising that economic issues and administrative relationships have received little attention in this study.

The regression and correlation analysis indicate a strong combined relationship among income tax, value added tax, excise duty, and tax revenue. Nonetheless, the individual impacts of these components on total tax revenue were not statistically significant even though there were positive relations between them. This is largely attributed to multicollinearity because all the tax elements are strongly correlated and have a tendency to move together in an integrated tax system like Nepal. Similar problems have been identified in previous literature as noted by Mascagni et al. (2022). The fact that the tax policy in Nepal is made up of different elements that work together means that the tax system works as a whole where income tax, VAT, and excise duty all contribute to tax revenue. Lastly, it has become apparent from this study that behavioral and institutional aspects of taxes are more influential than economic aspects in determining tax compliance and tax revenue in Nepal. This finding supports the ability-to-pay theory proposed by Pigou (1920) as well as tax compliance theory, but it goes beyond the scope of both by highlighting that non-economic aspects are even more critical in countries like Nepal. In general, the findings suggest that enhancing tax incentives, combating corruption, and raising the taxpayers' level of knowledge might have better outcomes than emphasizing economic changes alone. The paper's contribution to the field is that it has combined institutional, behavioral, and economic theories to explain how tax revenues evolve in Nepal.

Conclusion

This research analyzed the factors that influence the major tax components and how they affect tax revenue generation in Nepal through the integration of institutional, behavioral, and economic approaches to taxation using primary and secondary data. The results demonstrate that poor tax payment behavior is widespread among tax filers, which is caused primarily by lack of incentives for those who pay taxes, corrupt practices in government institutions, and low tax knowledge. Hence, tax compliance issues in Nepal are more influenced by governance quality and taxpayer education than by income or other economic factors.

The results of the main analysis indicate that taxpayers' behavior is highly affected by low level of trust in the governmental institutions, high corruption, absence of reward systems for the honest taxpayers, and tax evasion as a social norm. Secondary analysis reveals that despite income taxes, VAT, and excise duties contributing significantly to the total tax revenues, the significance of each on its own is minimal. Consequently, the findings show that the quality of institutions, trust of taxpayers, awareness levels, and behavioral norms have a greater influence than economic indicators alone. It can be concluded that the creation of appropriate incentives, reduction in corruption levels, transparency improvement, and increased tax knowledge are vital steps towards achieving effective tax revenues. Based on these findings, Nepal needs to adopt an approach based on trust and good governance in order to collect effective tax revenues.

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Teaching Business Communication in English to Nepali and English Medium Students: A Comparative Study of BBS Students in Tribhuvan University, Nepal

Shiva Chandra Ghimire
Lecturer, Triveni International College, Pokhara, Nepal

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Corresponding Author:
ghimireshiva9@gmail.com

Abstract

This study examines the effectiveness of teaching Business Communication in English to Bachelor of Business Studies (BBS) students from Nepali and English medium educational backgrounds under Tribhuvan University, Nepal. Using a quantitative research design, data were collected from 232 students across constituent, community, and private colleges in Pokhara Valley. The study analyzes differences in instructional preferences, satisfaction levels, and challenges faced by students using statistical tools such as t-test, correlation, and regression analysis. The findings reveal significant differences in instructional method preferences: English medium students favor interactive approaches such as role-playing and group discussions, whereas Nepali medium students prefer lectures and case studies. Teaching method effectiveness is identified as the most influential factor affecting student satisfaction, while English proficiency shows minimal impact. Nepali medium students face challenges related to terminology comprehension and communication confidence, whereas English medium students report concerns about repetitive content and lack of real-world application. The study concludes that inclusive and adaptive teaching strategies are essential to address diverse student needs and improve learning outcomes.

Introduction

As Nepal integrates into the global economy, demand for English proficiency in its workforce has grown increasingly imperative (Koirala & Adhikary, 2019). Tribhuvan University (TU), Nepal's oldest and largest academic institution, plays a pivotal role in shaping education and preparing students for modern business challenges. Business communication encompasses interpersonal, presentation, and cross-cultural skills (Guffey & Loewy, 2016), enhancing career prospects and contributing to organizational success and economic growth (Gurung, 2018).

Educational choices in Nepali and English medium schools significantly influence students' higher education trajectories. TU enrolls students from diverse linguistic backgrounds in Bachelor's programs conducted in both mediums, committing to address their linguistic needs (Pokharel & Pant, 2018). This bilingual approach shapes students' academic and professional futures.

The effectiveness of teaching Business Communication in English varies significantly depending on students' educational backgrounds. As Nepal further integrates into the global market, English and business communication proficiency is crucial for BBS students at TU. Nepali medium students face challenges including limited exposure to business terminology, difficulty adapting to English-based instruction, and lack of confidence hindering participation and learning.

This study investigates current teaching practices, identifies challenges faced by both student groups, and proposes strategies to improve learning outcomes. Nepali medium students often struggle with English proficiency, while English medium students may need instruction tailored to Nepal's business context (Poudel, 2020). Addressing these challenges is critical for equitable learning outcomes at TU.

TU requires effective teaching strategies for its diverse student body, especially for English-reliant courses like "Business Communication." Traditional methods may not adequately address Nepali medium students' challenges. This research seeks to enhance business communication education within TU's BBS program and compare teaching approaches and outcomes for both student groups.

Existing research may not fully capture the specific situation of Nepali medium students at TU. This research bridges that gap by investigating their challenges in the "Business Communication" course. Findings will inform curriculum development, instructional strategies, and educator initiatives (Shrestha, 2017), ultimately fostering an inclusive educational environment that equips graduates for the global marketplace.

This study is informed by three complementary theoretical perspectives: Cognitive Theory, Functional Theory, and Nativist Theory, which provide a foundation for understanding how students learn and use Business Communication in English. Cognitive Theory, primarily associated with the work of Piaget and Vygotsky, emphasizes the mental processes involved in learning, including memory, comprehension, problem-solving, and knowledge construction. According to this perspective, students' existing linguistic and educational experiences influence their ability to understand new concepts. In the context of Business Communication instruction, learners from Nepali-medium backgrounds may benefit from instructional strategies that connect new English-language concepts to their prior knowledge and gradually scaffold learning from familiar contexts to more complex business communication tasks (Vygotsky, 1978).

Functional Theory highlights the practical and contextual use of language for communication. Hymes (1972) argued that effective communication requires not only grammatical competence but also sociolinguistic and strategic competence. From this perspective, Business Communication teaching should focus on developing learners' ability to use language appropriately in real business situations. Similarly, Ellis (2003) emphasized the value of task-based learning and authentic communicative activities that mirror real-world contexts. Interactive instructional approaches such as role plays, group discussions, presentations, and case studies therefore become essential tools for developing practical communication skills among business students.

The study is further informed by Nativist Theory, particularly the work of Chomsky (1986), who proposed that human beings possess an innate capacity for language acquisition. This perspective suggests that learners can acquire additional languages effectively when provided with meaningful exposure and opportunities for interaction. Lenneberg's (1967) Critical Period Hypothesis further underscores the importance of sustained language input and practice in language development. Together, these theoretical perspectives suggest that effective Business Communication instruction should combine cognitive support, authentic communicative practice, and rich language exposure to address the diverse learning needs of both Nepali-medium and English-medium students. These theories therefore provide the conceptual foundation for examining students' learning experiences, instructional preferences, and satisfaction with Business Communication courses in Tribhuvan University.

Based on the contextual and theoritical backdrop and the observed practical problems, the objectives of this study are to compare the instructional preferences, learning experiences, satisfaction levels, and challenges encountered by Nepali-medium and English-medium BBS students while studying Business Communication in English, and to examine the influence of English proficiency, teaching method effectiveness, and course material adequacy on students' learning outcomes and satisfaction. The findings are expected to provide valuable insights for teachers, curriculum developers, and educational administrators in designing inclusive and effective pedagogical strategies for students from diverse educational backgrounds. Furthermore, the study offers empirical evidence to support improvements in Business Communication teaching practices and contribute to enhancing the overall quality of business education in Tribhuvan University.

Methodology

The present study seeks to address this gap by conducting a systematic comparative analysis of Business English communication teaching and learning among BBS students in Tribhuvan University, specifically comparing students who have received their prior schooling in Nepali medium institutions with those educated in English medium institutions. This study adopts a quantitative research design grounded in the positivist research paradigm, which holds that social phenomena can be measured objectively and that systematic analysis of empirical data can yield generalizable findings (Creswell, 2014). Specifically, the study employs a descriptive-comparative survey design, which is appropriate for characterizing the attributes of distinct groups and identifying systematic differences between them (Cohen, Manion, & Morrison, 2018). The use of a cross-sectional survey instrument enabled the simultaneous collection of data from Nepali medium and English medium BBS students, facilitating direct comparison of their business communication competencies, attitudes, and instructional experiences. The study further employs correlational and regression analyses to examine the relationships among key study variables and to identify the predictors of business communication performance.

The target population of the study comprises the students enrolled in the BBS program at Tribhuvan University-affiliated colleges in Pokhara Metropolis. Given the size of this population, a purposive sampling strategy was employed to select colleges representing diverse institutional types and geographic locations, including both urban and peri-urban settings (Etikan, Musa, & Alkassim, 2016). Within selected colleges, simple random sampling was used to select student respondents from the second and fourth years of the BBS program, as these years incorporate core Business Communication in English coursework. The final sample comprised respondents stratified by medium of prior schooling—Nepali medium and English medium—to ensure adequate representation of both groups for comparative analysis. Sample size was determined using the formula proposed by Yamane (1967), which provides an appropriate sample size for survey-based studies within known populations.

Data were collected through a structured questionnaire developed specifically for this study. The questionnaire was organized into four sections. The first section captured demographic and background information, including students' medium of prior schooling, geographic origin, and socioeconomic background. The second section comprised Likert-scale items measuring students' self-assessed business communication competencies in English, including proficiency in formal writing, oral presentation, professional correspondence, and reading comprehension of business texts. The third section contained items assessing students' attitudes toward learning Business English, their communicative self-efficacy, and their perceptions of instructional quality in their Business Communication courses. The fourth section included items capturing students' academic performance indicators, including self-reported grades in Business Communication courses.

The questionnaire was developed through a rigorous process of item generation guided by a review of relevant literature, pilot testing with a small sample of BBS students not included in the main study, and expert review by faculty members specializing in Business English and research methodology. Internal consistency reliability of the Likert-scale sections was assessed using Cronbach's alpha, with values above 0.70 considered acceptable (Nunnally & Bernstein, 1994). The questionnaire was made available in both English and Nepali to ensure comprehension across students of varying English proficiency levels.

The collected data were analyzed using the Statistical Package for the Social Sciences (SPSS) software. Three primary analytical approaches were employed. First, descriptive statistical analysis was used to summarize and characterize the distributions of all study variables, including frequency distributions, means, standard deviations, and percentages. Descriptive statistics were computed separately for the Nepali medium and English medium student groups to facilitate comparison of group profiles (Field, 2018).

Second, Pearson correlation analysis was conducted to examine the relationships among continuous study variables, including students' self-assessed business communication competencies, attitudes, communicative self-efficacy, instructional quality perceptions, and academic performance. Correlation coefficients were interpreted using standard benchmarks: values below 0.30 were considered weak, 0.30–0.59 moderate, and 0.60 and above strong (Cohen, 1988). The significance of all correlation coefficients was evaluated at the $p < .05$ level.

Third, multiple linear regression analysis was employed to identify the predictors of students' business communication performance. Separate regression models were estimated for the full sample and for each medium-of-instruction subgroup, with business communication performance (as measured by self-reported course grades and assessed competency scores) as the dependent variable. Independent variables entered into the regression models included medium of prior schooling, communicative self-efficacy, attitudes toward Business English learning, perceived instructional quality, and relevant demographic controls. The assumptions of multiple regression—including linearity, independence of residuals, homoscedasticity, and absence of multicollinearity—were verified prior to interpretation of results (Hair et al., 2019). The overall significance of each regression model was evaluated using the F-statistic, and individual predictor significance was assessed using t-tests at the $p < .05$ level.

All ethical protocols relevant to research involving human participants were strictly observed throughout the conduct of this study. Prior to data collection, institutional permissions were obtained from the administration of each participating college. Informed consent was obtained from all student respondents, who were clearly informed of the voluntary nature of participation, their right to withdraw at any point, and the confidentiality with which their responses would be handled. No personally identifying information was collected, and all data were stored securely and used exclusively for academic research purposes in accordance with standard ethical research practice (American Psychological Association, 2020).

Result

A total of 232 BBS students participated in the study. The majority of respondents were male (66.38%) compared to female (33.62%). Regarding medium of instruction, most students were enrolled in English medium (60.76%), while 90 students (39.24%) were in Nepali medium. Year-wise distribution showed the highest proportion of respondents in the third year (42.68%), followed by second year (29.31%) and first year (28.01%). The detailed demographic distribution of the respondents is presented in Table 1.

Table 1

Demographic Distribution of Respondents

Category	No. of Students	Percentage (%)
Gender: Male	154	66.38
Gender: Female	78	33.62
Medium: English	142	60.76
Medium: Nepali	90	39.24
Year: First	65	28.01
Year: Second	68	29.31
Year: Third	99	42.68
Total Respondents	232	100.00

English proficiency levels varied by gender. Table 2 indivates that among female respondents, the majority were not proficient (n = 50), followed by proficient (n = 25) and moderately proficient (n = 3), with no females reporting very proficient. Among male respondents, the majority were moderately proficient (n = 62), followed by proficient (n = 67) and not proficient (n = 25), with no males reporting very proficient. Overall, the largest group of respondents was proficient (n = 92), followed by moderately proficient (n = 65) and not proficient (n = 75). No respondents reported being very proficient in English

Table 2

Gender-wise previous English proficiency level of respondents

Gender	Moderately Proficient	Not Proficient	Proficient	Very Proficient
Female		3	50	25
Male	62		25	67
Grand Total	62	3	75	92

Instructional method preferences differed substantially between English and Nepali medium students. As presented in table 3, English medium students found role-playing exercises (n = 47), group discussion (n = 33), and multimedia presentations (n = 30) most effective. In contrast, Nepali medium students preferred case studies (n = 34) and lectures (n = 31). Only 2 found multimedia presentations effective. Among English medium students, only 12 found lectures effective and 17 found case studies effective.

Table 3

Medium of study and instructional methods' effectiveness

Medium	Lectures	Group Discussion	Case Studies	Role Playing	Multimedia
English	12	33	17	47	30
Nepali	31	8	34	18	2
Grand Total	43	41	51	65	32

The t-test confirms a highly significant difference ($p = .000$) in teaching effectiveness ratings between student groups. Table four shows a substantial mean difference of 0.855 proves that educational background heavily dictates how effectively Business Communication instruction is received, reinforcing the study's conclusion that teachers must deploy differentiated pedagogical strategies to accommodate both English and Nepali medium students.

Table 4

t-test for variance in Effectiveness of teaching Business Communication

	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
						Lower	Upper
Effectiveness Rating (1-5)	5	199	0	0.855	0.167	0.526	1.184

The two groups identified distinctly different challenges. Among Nepali medium students, the most frequently reported challenge was difficulty in understanding business terminologies (n = 86), followed by lack of confidence in English communication (n = 49), and fear of participating in group activities (n = 18). Among English medium students, the primary challenge was repetitive course content (n = 124), followed by limited real-world case examples (n = 55). These findings suggest that Nepali medium students face language-related barriers, while English medium students are more concerned with curriculum design and practical application.

Table 5

Challenges faced by Nepali and English medium students

Medium	Challenges	Number of Students
Nepali	Difficulty in business terminologies	86
	Lack of confidence in English	49
	Fear of group participation	18
English	Course content is repetitive	124
	Limited real-world case examples	55

Correlation analysis was conducted to examine the relationships among student satisfaction, English proficiency, teaching method effectiveness, and course material adequacy. As presented in Table 6, student satisfaction demonstrated a very strong positive relationship with teaching method effectiveness (r = .892), suggesting that higher perceptions of effective teaching were associated with greater satisfaction among students. Satisfaction also showed a moderate positive association with course material adequacy (r = .393), indicating that well-designed learning materials contributed to positive learning experiences. In contrast, the relationship between English proficiency and satisfaction was relatively weak (r = .170), implying that language proficiency alone was not strongly related to students' overall satisfaction with the course. Furthermore, the correlations among the independent variables were generally low to moderate, suggesting the absence of strong interrelationships among them.

Table 6

Test of correlation

Course Satisfaction Level	1.000	0.170	0.892	0.393
English Proficiency	0.170	1.000	0.191	0.105
Teaching Method Effectiveness	0.892	0.191	1.000	0.267
Material Adequacy	0.393	0.105	0.267	1.000

Multiple regression analysis was conducted to assess the influence of English proficiency, teaching method effectiveness, and course material adequacy on student satisfaction. Table 7 shows that teaching method effectiveness had the highest standardized coefficient (β = .849, p

< .001), followed by course material adequacy (β = .167, p < .001). However, English proficiency was not found to be a statistically significant predictor of satisfaction (β = –.009, p = .745). The results indicate varying contributions of the explanatory variables to the prediction of student satisfaction.

Table 7

Regression Analysis

Unstandardized Coefficients			Standardized Coefficients		
Model	B	Std. Error	Beta	t	Sig.
(Constant)	-.026	.128	-	-.204	.839
English Proficiency	-.007	.021	-.009	-.326	.745
Teaching Effectiveness	.879	.030	.849	28.845	.000
Course Material Adequacy	.142	.025	.167	5.733	.000

Discussion

The primary objective of this study was to examine the influence of English proficiency, teaching method effectiveness, and course material adequacy on the satisfaction levels of BBS students learning Business Communication in English. The findings yielded critical insights into how these variables function across Nepali and English medium students, challenging several conventional assumptions about language instruction in higher education.

Contrary to initial expectations, English proficiency demonstrated a minimal and statistically insignificant impact on student satisfaction (beta = -.009, p = .745). This finding suggests that while language ability is often presumed to be the primary barrier to learning in English-medium programs, it does not directly determine how satisfied students feel with their Business Communication course. The weak correlation (r = .170) between proficiency and satisfaction further supports this conclusion. This result diverges from traditional deficit-based views that frame Nepali medium students as inherently disadvantaged. Instead, it aligns with Poudel (2020), who argued that students can achieve meaningful learning outcomes when instructional support compensates for linguistic gaps, rather than when proficiency alone is elevated. This finding shifts the pedagogical focus away from remediating students' language deficits and toward improving instructional quality.

Among the three variables examined, teaching method effectiveness emerged as the strongest and most significant predictor of student satisfaction, with a very strong positive correlation (r = .892) and a large standardized coefficient (beta = .849, p < .001). This indicates that students, regardless of their linguistic background, derive satisfaction primarily from how the subject is taught rather than from their existing English skills. English medium students showed a clear preference for interactive methods such as role-playing, group discussions, and multimedia presentations, whereas Nepali medium students favored lectures and case studies. These differences reflect prior educational socialization, as noted by Shrestha (2019), who observed that students from traditional Nepali medium backgrounds often lack familiarity with participatory learning environments. Effective teaching, therefore, requires a differentiated approach that balances structure for Nepali medium students with engagement for English medium students. The strong regression weight confirms that investing in pedagogical training and interactive strategies yields the highest returns in student satisfaction.

Course material adequacy also contributed significantly to student satisfaction, although its effect was smaller than that of teaching method effectiveness (beta = .167, $p < .001$). The moderate correlation ($r = .393$) suggests that while students value well-designed textbooks, handouts, and online resources, materials alone cannot compensate for ineffective instruction. Importantly, the nature of dissatisfaction with materials differed by group. English medium students reported that the course content was repetitive and lacked real-world case examples, whereas Nepali medium students struggled with understanding basic business terminologies within the existing materials. This finding aligns with Ghimire and Bhattarai (2020), who noted that language-related barriers in materials disproportionately affect Nepali medium students. Thus, course material adequacy is not a one-dimensional construct; it must address both linguistic accessibility for Nepali medium students and intellectual challenge and relevance for English medium students. Enhancing materials without simultaneously improving teaching methods is unlikely to produce meaningful gains in student satisfaction.

Conclusion

This study set out to examine the effectiveness of teaching Business Communication in English to students from Nepali and English medium backgrounds within the BBS program of Tribhuvan University. The findings provide strong empirical evidence that student satisfaction and learning outcomes are influenced more by pedagogical approaches than by linguistic background alone.

One of the central conclusions of the study is that although linguistic differences exist between Nepali medium and English medium students, these differences do not solely determine the effectiveness of learning. While Nepali medium students face initial challenges related to comprehension, terminology, and communication confidence, these barriers can be significantly reduced through appropriate teaching strategies. Similarly, English medium students, despite having better language proficiency, are not necessarily more satisfied unless the teaching methods are engaging and the course content is relevant.

The study highlights that teaching method effectiveness is the most significant determinant of student satisfaction. Interactive teaching approaches such as role-playing, group discussions, and multimedia-based learning create a more engaging and participatory learning environment, particularly for English medium students. Furthermore, the statistical analysis reinforces the conclusion that English proficiency has a minimal and statistically insignificant impact on student satisfaction. This finding is particularly important as it shifts the focus from language ability to instructional quality. It suggests that even students with moderate English proficiency can achieve high levels of satisfaction and learning if the teaching methods are effective.

Overall, the study concludes that a flexible, inclusive, and student-centered teaching approach is essential in a linguistically diverse classroom. The findings emphasize the need for a balanced integration of traditional and interactive teaching methods to ensure that all students, regardless of their background, can achieve meaningful learning outcomes.

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Business Growth, Challenges, and Economic Impact of the Lekhnath Trade Fair, Kaski, Nepal

Sunil Datta Baral
Lecturer Triveni International College, Kaksi, Gandaki, Nepal

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Corresponding Author:
Bhesraj498@gmail.com

Abstract

This study examines the economic impact of the Lekhnath Trade Fair on local businesses in Lekhnath, a rapidly growing urban area within Pokhara. Trade fairs are recognized globally as platforms for business promotion, networking, and regional economic development. Originating from the "Orange Display" in 2001, the Lekhnath Trade Fair has evolved into a prominent annual event that attracts diverse business sectors. Despite its importance, limited empirical evidence exists regarding its direct economic contributions to local enterprises. Using a mixed-method research design, this study combines quantitative and qualitative data collected through structured questionnaires from 100 participating businesses. Analytical tools such as descriptive statistics, frequency analysis, chi-square tests, and paired t-tests were employed to evaluate market opportunities, challenges, and economic outcomes. The findings reveal that the primary benefits of the trade fair lie in expanding customer bases, accessing new market trends, and enhancing brand awareness. However, immediate increases in sales and revenue are perceived as limited by most participants. Key challenges include limited time for customer engagement and high competition among vendors. However, although only 27% of respondents reported revenue growth, statistical analysis indicates a significant positive impact on business expansion and profit margins. The study concludes that while the Lekhnath Trade Fair plays a vital role in fostering business visibility and networking, its financial benefits are unevenly distributed. Enhancing event duration, improving promotional strategies, and encouraging broader sectoral representation and gender diversity could significantly increase its effectiveness as a driver of local economic development.

Introduction

Trade fairs are defined as organized market events, which are held at specific periods and places, where a large number of companies present their offers and consumers get informed or buy goods (Pantano, 2011). The trade fairs or shows, though referred different ways, such as exhibitions, fairs, trade fairs etc., are the regularly scheduled events where companies have the opportunity to get to know their customers and other important parties of their industry.

Organizing trade shows is a complex undertaking and it requires the support of a whole industry, in order for participants to consider it as the perfect place to establish and cultivate future business relationships (Sharma and Patterson, 1999). They act as platforms for businesses to showcase their products and services, foster networking, and drive local economic activity. Among these, the Lekhnath Trade Fair stands out as a significant annual event in Nepal, specifically hosted in Lekhnath Chamber of Commerce situated in the Kaski District within the Gandaki Province. Trade fairs often feature cutting-edge technologies and solutions, providing a platform for knowledge exchange and fostering collaboration between research institutions and industry players (Hannover Messe, 2023).

Trade fairs exist as an intelligence process from the perspective of exhibitors that allow an exhibitor to apply data to its Information Management System, which consequently enriches its Strategic Marketing Management and, in the end, improves the Company's Competitiveness (Silva et al., 2020). Trade fairs create networking opportunities that are essential for business development. Trade fairs can enhance a region's reputation and attract further investment and tourism (Garcia, A., & Sanchez, A., 2021). Trade fairs can provide socio-economic benefits such as job creation and increased local activity, but may also pose challenges. Although, the Lekhnath Trade Fair, started its journey from "Orange Display" in 2001 has continuously organized the trade fair since 2004 and has been able to establish itself as one of the most prominent trade fairs in Nepal despite the various ups and downs. This research aims to explore the economic impact of the Lekhnath Trade Fair, evaluating its influence on local businesses.

Despite the increasing frequency and scale of trade fairs, there is a lack of comprehensive understanding regarding their specific economic impact on local businesses in the region. Local businesses, ranging from small enterprises to larger retail operations, are often pivotal to the economic vitality of the place where trade fairs take place .. However, there is limited empirical evidence on how these trade fairs affect their operational performance, revenue generation, and overall business growth. Key areas of concern include the direct financial benefits for local vendors, the potential for new market opportunities, and the extent to which these events influence local economic development. This study aims to identify both positive outcomes and challenges, and provide actionable insights to enhance the effectiveness and value of future trade fairs for the local economy.

Trade fairs are often seen as opportunities for businesses to showcase their products, connect with potential customers, and stimulate local economies through market access, marketplace dynamics, and product promotion. Trade fairs, such as those held in Lekhnath can offer a unique venue for businesses to engage with a larger audience and explore market opportunities.

Trade has long been a key driver of the dynamics of regional economic growth (Crescenzi, 2018). Rapidly developing globalization allows countries to connect more closely, exploit their comparative advantages, and improve production and distribution efficiency (Dahlman, 2020). Access to global markets provides new opportunities for countries to expand the reach of their products (Sakarya et al., 2021). International trade offers significant benefits, such as increased foreign investment, development of local industrial sectors, and job creation, the impacts of which are often complex and varied (Harrison, 2020). Past studies on the economic impact of trade fairs focus on various dimensions, including direct economic benefits, local and regional development, business growth, and local employment. Sánchez-Fernández, J., & González-Benito, J. (2021) studied the direct economic impact of international trade fairs on Barcelona, analyzing revenues from tourism, business activities, and local spending and concluded that trade fairs generate direct economic benefits such as revenue from attendees, exhibitors, and related activities. The study conducted by Hsu,

2020 examines how trade fairs contribute to regional economic development in Taiwan, focusing on infrastructure improvements and local business growth and found that trade fairs can drive regional development by boosting local economies and fostering infrastructure improvements. Trade fairs often provide insights into effective strategies for promoting and diffusing innovation required for various domains of economic prosperity. Kang, J., & Kim, H. J. (2022) conducted the study to explore how trade fairs facilitate business growth and networking opportunities in South Korea, highlighting the impact of company expansion and collaborations and thus concluded that trade fairs provide opportunities for businesses to grow through networking, partnerships and market expansion. Harrison, A., & Devaney, M. (2023) investigated the employment effects and local economic impacts of trade fairs in the U.K., focusing on job creation and income generation for local communities. This study concluded that trade fairs contribute to local economic activity by creating jobs and generating income for the local community. The trade fairs also enhance the host city's visibility. Thus, helps in branding of the host city. Tuzunkan, D., & Bati, M. (2021) on analyzing how trade fairs influence tourism and destination branding in Istanbul, examining the role of these events in attracting visitors and promoting the city found that such fairs attract tourists and enhance the branding of host cities as business and tourism destination. The study conducted by Ritchie, B. W., & Shipway, R. (2022) evaluates the long-term economic impacts of trade fairs on host cities including sustained business growth and regional economic benefits found that such fairs can have long term economic benefits, including sustained business growth and regional development.

Research on the economic impact of trade fairs in Nepal has received increasing attention in recent years, particularly due to the evolving dynamics of global trade and local economic conditions. The study by the Nepal Chamber of Commerce and Federation of Nepalese Chambers of Commerce and Industry (FNCCI) discusses the financial benefits of trade fairs, including revenue generation through direct and indirect channels. It highlights the economic contribution of trade fairs to local businesses and the multiplier effect on the local economy (Nepal Chamber of Commerce, 2023). The research published in the Journal of Rural Development examines how agricultural trade fairs impact rural economies in Nepal, focusing on market access for local farmers and the promotion of agricultural products (Sharma, A. K., & Shrestha, R., 2022). A report by the World Trade Organization (WTO) on small and medium-sized enterprises (SMEs) in Nepal highlighted how trade fairs serve as a significant platform for SMEs to expand their market reach and establish business networks (World Trade Organization., 2021). The study from the Nepal Tourism Board explores how trade fairs contribute to tourism in Nepal, including the benefits to hospitality services, transportation, and local attractions (Nepal Tourism Board, 2022). Research by Asian Development Bank (ADB) addresses the infrastructural challenges that affect the success of trade fairs in Nepal and provides recommendations for improvement (Asian Development Bank., 2023). While comprehensive, up-to-date studies specifically focusing on Nepal are somewhat limited, these studies serve as some relevant sources and insights for our study.

Multiple studies have examined in order to understand the social and economic impact of the trade fairs on the place where the fair took place as well as its effect on the local business men. These studies provide a comprehensive insight of the economic impacts of trade fairs, highlighting both direct and indirect benefits for host cities, businesses, and local communities. They offer insights into how trade fairs contribute to economic development, business growth, and regional branding. In the above context the objective of this research is to evaluate the effectiveness of Lekhnath trade fairs on the local business owners, such as market opportunities and business expansion for local vendors; challenges faced by local businesses in participating in trade fairs; and explore the economic impact of Lekhnath trade fairs on local businesses.

Methodology

This study employed a mixed method research design which combines both quantitative and qualitative approaches to gather and analyze the data. The descriptive method captures is used to understand the current state of local vendors and their experiences at the trade fair and the exploratory research to explore new market opportunities and strategies for business expansion.

The collected data are both quantitative and qualitative in nature. Some open-ended questions about challenges faced or opportunities seen in the market, reasons for attending trade fairs are of qualitative nature and serve as textual data that provides detailed information or context.

All the business entities having a membership of Lekhnath Chamber of Commerce who take part in Lekhnath Trade Fair is the population of this study. This comprises the businesses operating from wards no. 26 to 33 in Pokhara Municipality. The method of sampling used is purposive and stratified sampling. The purposive sampling helps select vendors on specific criteria (e.g. type of products, years in business) and the stratified sampling ensures representation across different vendor categories.

Structured questionnaires gathered data from the respondents who participated in Lekhnath trade fairs. It provides statistical data on how many businesses are affected, the extent of the impact and common challenges faced. After the survey, data is further analyzed to find out the sales data and other relevant metrics to quantify the economic impact. Thus, this research design helps capture the measurable impact of trade fairs and the subjective experiences of local businesses, providing a richer and more actionable understanding of the market opportunities and challenges.

The descriptive statistical measures are used to summarize responses related to market opportunities and expansion plans. The frequency analysis is used to count how often different challenges are mentioned by respondents to identify the most common issues faced by local businesses. Similarly, ranking analysis using ranking questions is used to prioritize the challenges faced by businesses. Similarly, the statistical methods like paired t-test are used to assess changed in business metrics before and after the trade fairs, such as sales figure and revenue growth. The analytical framework has been presented in table 1.

Table 1

Analytical Framework Chart

Research Objective	Data Collection Methods	Analysis Techniques
To identify the market opportunities and business expansion for local vendors	Surveys with vendors	Descriptive statistics
To assess the challenges faced by local businesses in participating in trade fairs	Interviews with vendors	Frequency Analysis
To explore the economic impact of Lekhnath trade fairs on local businesses	Surveys with businesses	Comparative analysis (pre/post-trade fair)

Result

The demographic profile of the respondent constitutes age, gender distributions etc. are described.

There are different age groups of people participating in the fair. Participants aged 40-60 are found to have the highest attendance while the people of age group 60 and above are the lowest. It can be seen in the table 2.

Table 2

Age-wise Distribution of Participants

Age Group	Number of Participants	Percentage
20–40	33	33.00
40-60	55	55.00
60 and above	12	12.00
Total	**100**	100.00

The table 3 shows the overall distribution of the participants of that trade fair. It shows that the males (66) are almost double in number compared to that of females (34). It shows that male participation is higher than that of females.

Table 3

Gender-wise distribution of participants

Gender	Number of participants	percentage
Male	66	66
Female	34	34

Various types of businesses participated in the Lekhnath Trade Fair. The various types of businesses taking part in the fair are agriculture (6%), clothing (2%), education (4%), footwear (2%), hotel (2%), internet service (4%), manufacturing (4%), restaurant (8%), retail (40%), service (18%), trading (2%) and wholesale (8%). The table 4 shows that the majorities of the participants belong to the retail and service industry.

Table 4

Businesses participating in Lekhnath Trade Fair

Types of Businesses	Count	Percentage
Agriculture	6	6.00
Clothing	2	2.00
Education	4	4.00
Footwear	2	2.00
Hotel	2	2.00
Internet	4	4.00
Manufacturing	4	4.00
Restaurant	8	8.00
Retail	40	40.00
Service	18	18.00
Trading	2	2.00
Wholesale	8	8.00
Grand Total	**100**	**100.00%**

The study assessed what opportunities do the participants see in the Lekhnath trade fair. They were given the five different factors presented in first column of table 5. On analyzing the data from the respondents, it was found that the majority of participants saw expansion of customer base as the greatest opportunity, followed by access to new market trend and increase in brand awareness. The table 5 also indicates that the participants do not see any Lekhnath trade fair as a means to provide opportunities for the increment of sales and revenue.

Table 5

Market opportunity analysis

Opportunities	1	2	3	4	5	Score	Rank
Expansion of customer base	13	20	19	25	23	325	1
Access to new market trend	17	17	25	29	12	302	2
Increase in brand awareness	22	15	18	30	15	301	3
Networking opportunity	14	31	27	18	10	279	4
Increase in sales and revenue	16	25	40	10	9	271	5

There are various challenges faced by the participants. On reviewing the data from the filled-out questionnaires, they ranked those challenges on a scale of 1 to 5 with 5 being the highest challenge. It was found that the greatest challenge they faced is the limited time to acquire potential customers, and the least challenging factor is the support from the concerned authority, as in table 6.

Table 6

Challenges faced by participants

Challenges	1	2	3	4	5	Score	Rank
Limited time to acquire potential customer	19	12	11	31	25	325	1
Competition	12	15	21	16	16	249	2
Difficult to attract customers	25	33	29	7	6	236	3
High Investment	55	20	6	10	9	198	4
Lack of support from the concerned authority	61	10	14	10	5	188	5

The participants were asked whether the Lekhnath Trade Fair helped them to increase the sales and revenue of their businesses or not. It was found that only 27 out 100 felt in a positive way as shown in the table 7. Among the 27 people who feel that the Lekhnath Trade Fair has helped increase the revenue the range of their revenue increase was analyzed. It is found that the 11 out of 27 feel that their revenue has increased above 100,000 but a very few 3 out of 27 feel a small increment of 10,000 in their overall revenue as shown in table 7.

Table 7

Range of revenue increase with count of participants

Increase in revenue	Count	Percent
Above 10,000	3	11.11
10,000 to 50,000	4	14.81
50,000 o 100,000	9	33.33
Above 100,000	11	40.74
Total	27	100.00

The first two hypotheses are tested using the chi-square test. The result in table 8 shows that both of the hypotheses are rejected and hence alternative hypothesis is accepted. It shows that there is a significant impact of Lekhnath trade fair on the local business expansion and also there is a significant market opportunity available for local businesses due to Lekhnath Trade Fair.

Table 8

Chi-square test results

Hypothesis	Value	df	Asymptotic Significance (2-sided)	Remarks
H01: There is no significant impact of Lekhnath Trade Fair on local business expansion	101.287[a]	4	.000	Rejected
H02: There is no significant market opportunities available for local businesses due to Lekhnath Trade fair	101.103[a]	4	.000	Rejected

The third hypothesis (H_03) is tested using the paired t-tests to test the significance of Lekthnath trade fair on the revenue and profit margin of local businesses. It is found that there is no significant impact of Lekhnath trade fair on the revenue but it has a significant impact on the profit margin of the local businesses as in table 9.

Table 9

Paired Sample t-test results

		Paired Differences			*95%* Confidence Interval of the Difference					
		$\bar{x}$	σ	*SE*	*lower*	*upper*	*t*	*df*	*Sig.*	H0
Pair 1	Annual review before-after	-7736.5	-6457.01	-645.701	-9017.7	-6455.3	-11.981	99	0	NS
Pair 2	Profit Margin (Before –After)	-0.5373	-2.42088	-0.24209	-1.0177	-0.057	-2.219	99	0.029	NS

Discussion

The findings of this study indicate that the Lekhnath Trade Fair has created important market opportunities for local businesses, particularly in terms of customer base expansion, access to new market trends, and enhancement of brand awareness. These findings are consistent with the study conducted by Kang and Kim (2022), who found that trade fairs provide businesses with opportunities for networking, collaboration, and market expansion. Similarly, Silva et al. (2020) emphasized that trade fairs function as intelligence platforms that improve strategic marketing management and business competitiveness. The present study supports these arguments because most participants viewed the trade fair as a platform for increasing visibility and understanding changing market trends rather than as a direct source of immediate revenue growth.

The results also correspond with the findings of Sánchez-Fernández and González-Benito (2021), who reported that trade fairs generate direct economic opportunities through business exposure and interaction with customers. In the case of the Lekhnath Trade Fair, vendors highly ranked customer base expansion and brand awareness as major opportunities. However, unlike the findings of Sánchez-Fernández and González-Benito (2021), where trade fairs contributed strongly to direct economic returns, the present study found that participants ranked increase in sales and revenue as the least important opportunity. This difference may be due to the smaller scale of the Lekhnath Trade Fair and the limited purchasing capacity of visitors compared to international trade fairs.

The study further revealed that retail businesses dominated participation in the trade fair, followed by service-oriented businesses. This finding supports the report of the Nepal Chamber of Commerce (2023), which stated that trade fairs in Nepal mainly benefit businesses engaged in direct customer interaction and local commercial activities. Likewise, the findings align with the World Trade Organization (2021) report, which highlighted that trade fairs are especially beneficial for small and medium-sized enterprises (SMEs) in expanding market reach and establishing business networks. Since most participating businesses in Lekhnath were retail and service enterprises, the trade fair appears to serve primarily as a promotional and networking platform for SMEs.

Regarding challenges faced by businesses, the study identified limited time to acquire potential customers and high competition among vendors as the most significant problems. These findings support Sharma and Patterson (1999), who argued that successful trade fairs require effective organization and sufficient opportunities for interaction to develop business relationships. The current findings suggest that although the Lekhnath Trade Fair attracts many businesses, the limited duration and crowded environment may restrict vendors from fully engaging with customers. Similarly, the intense competition among participants may reduce the ability of smaller businesses to attract consumer attention.

The chi-square test results showed that the Lekhnath Trade Fair has a significant impact on local business expansion and market opportunities. These findings are consistent with Hsu and Wang (2020), who concluded that trade fairs contribute to regional economic development and business growth. Likewise, Ritchie and Shipway (2022) found that trade fairs create long-term economic benefits through sustained business growth and regional development. The present study also suggests that the trade fair contributes positively to business expansion, although the financial benefits are not equally experienced by all participants.

The paired sample t-test showed that the trade fair did not have a statistically significant impact on annual revenue but had a significant effect on profit margins. This finding partially agrees with Harrison and Devaney (2023), who reported that trade fairs generate local economic activity and income opportunities. While the present study did not find strong evidence of immediate revenue growth for most businesses, the improvement in profit margins indicates that participation in the trade fair may enhance business efficiency, customer retention, and long-term profitability. This suggests that the economic contribution of the trade fair is more indirect and long-term rather than immediate and direct.

The findings also support Garcia and Sanchez (2021), who argued that trade fairs contribute to regional branding and economic visibility. The Lekhnath Trade Fair has established itself as an important annual event that attracts various business sectors and increases commercial activity within the region. However, the lower participation of women and underrepresentation of sectors such as manufacturing and agriculture indicate the need for more inclusive participation strategies. Greater sectoral diversity and gender inclusion could further strengthen the economic contribution of future trade fairs.

Overall, the findings of this study are largely consistent with previous national and international studies that identified trade fairs as important platforms for business promotion, networking, and regional economic development. However, unlike many international studies that reported strong direct economic returns, the present study shows that the Lekhnath Trade Fair contributes more significantly to customer expansion, market exposure, and long-term business development than to immediate sales growth.

Conclusion

The Lekhnath Trade Fair serves as a significant platform for local businesses, particularly those in the retail and service sectors, to engage with a working-age audience actively involved in business or professional activities.

The trade fair provides vendors with notable opportunities, especially in terms of expanding customer bases and accessing new market trends, although its potential to drive immediate sales and revenue is perceived as limited. The dominance of the retail sector highlights the fair's role as a critical space for businesses with direct-to-customer models, but the underrepresentation of other sectors like agriculture, education, and manufacturing points to opportunities for diversification in participation.

Thus, the Lekhnath Trade Fair has established itself as a valuable platform for local businesses, but targeted improvements in gender inclusivity and sectoral diversity, and event duration could further enhance its economic impact. The trade fair can further solidify its role as a catalyst for local business growth and economic development.

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Green Taxation and Environmental Sustainability: A Systematic Review of Fiscal Instruments, Environmental Outcomes, and Implementation Challenges

Surendra Karki
Assistant Professor, Gupteshwor Mahadev Multiple Campus, Tribhuvan University,
PhD Scholar, Pokhara University

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Corresponding Author:
surendrakarki2024@pusob.edu.np

Abstract

The objective of this study is to systematically review and synthesize recent empirical evidence on green taxation and environmental sustainability, with particular attention to fiscal instrument design, environmental and innovation outcomes, and implementation challenges. The study follows the PRISMA 2020 guidelines and reviews 32 peer-reviewed open-access journal articles published between 2016 and 2025, retrieved from Google Scholar and the Dimensions database. A structured Boolean search strategy was applied using the string: ("green tax*" OR "environmental tax*" OR "carbon tax" OR "pollution tax" OR "energy tax" OR "ecological tax") AND ("environmental sustainability" OR "emission reduction" OR "climate change" OR "environmental performance"). A qualitative thematic synthesis was conducted using a tri-dimensional analytical framework integrating fiscal instrument design, environmental and innovation outcomes, and governance and equity considerations. The findings indicate that well designed green taxes, particularly carbon and energy taxes, are effective in reducing greenhouse gas emissions and improving environmental quality, especially in contexts characterized by strong institutional capacity and policy credibility. The review also provides conditional support for the Porter Hypothesis, demonstrating that environmental taxation can stimulate green technological innovation when complemented by innovation subsidies and renewable energy incentives. From a policy perspective, the study implies that green taxation should be implemented as part of an integrated policy mix, supported by credible institutions, transparent revenue recycling, and equity-oriented compensation mechanisms to enhance effectiveness and public acceptance.

Introduction

Global environmental degradation has intensified markedly over recent decades, driven primarily by rising greenhouse gas emissions, industrial pollution, and unsustainable patterns of resource consumption. A growing body of empirical evidence demonstrates that anthropogenic economic activities have fundamentally altered the global climate system, resulting in higher average temperatures, increased frequency of extreme weather events, biodiversity loss, and accelerating ecosystem degradation (Haites, 2018; Metcalf, 2021). These environmental disruptions pose substantial risks not only to ecological systems but also to economic stability, public health, and long-term development trajectories, particularly in emerging and developing economies where institutional and adaptive capacities are often limited (Wolde-rufael & Mulat-weldemeskel, 2021). Consequently, environmental sustainability has become a central concern in economic policymaking, prompting governments to search for policy instruments capable of reconciling economic growth objectives with ecological protection (Chen et al., 2023). Among the available policy instruments, green taxation including carbon taxes and broader environmental and energy taxes has gained prominence as a market-based mechanism for addressing environmental externalities. Grounded in Pigouvian economic theory, green taxes aim to internalize the social costs of pollution by embedding environmental damages into market prices, thereby incentivizing producers and consumers to adopt cleaner technologies and less carbon-intensive behaviors (Metcalf, 2021). Compared with command-and-control regulations, environmental taxes offer flexibility, cost-effectiveness, and dynamic efficiency, allowing economic agents to choose the least-cost pathways for emission reduction while preserving market autonomy (Haites, 2018). Reflecting these advantages, environmental taxation has increasingly been incorporated into national climate strategies, fiscal reforms, and long-term decarbonization pathways since the mid-2010s, particularly following the Paris Agreement (Wahyudi & Leny, 2025).

A central strength of green taxation lies in its capacity to influence behavior across the entire economy while simultaneously generating public revenues. Unlike fixed regulatory standards, environmental taxes create continuous incentives for firms and households to reduce emissions, improve energy efficiency, and invest in cleaner production processes (Metcalf, 2021). Moreover, tax revenues can be recycled to support green innovation, renewable energy deployment, or social compensation mechanisms, thereby enhancing both environmental effectiveness and economic acceptability (Kumar & Stauvermann, 2025). Empirical studies from both OECD and non-OECD contexts increasingly suggest that well-designed environmental taxes can contribute to improved air quality, reduced carbon intensity, and strengthened innovation performance, particularly when embedded within coherent policy frameworks(Chen et al., 2023; Han & Li, 2020). Despite these theoretical advantages and promising empirical findings, the real-world effectiveness of green taxation remains uneven and highly context-dependent. While several studies report statistically significant emission reductions following the introduction of carbon or environmental taxes (Gao et al., 2019; Zhou et al., 2024), others document modest, delayed, or even negligible effects due to weak enforcement, low tax rates, Regulatory fragmentation, or institutional constraints (Li et al., 2025; Maiti, 2024). Distributional impacts further complicate policy outcomes, as energy and environmental taxes may disproportionately burden low-income households if revenue recycling and compensation mechanisms are poorly designed (Koh et al., 2021; Kumar & Stauvermann, 2025) These challenges underscore that the effectiveness of green taxation cannot be assessed solely on efficiency grounds but must be understood within broader governance, equity, and implementation contexts.

The academic literature on green taxation has expanded rapidly over the past decade, yet it remains fragmented across disciplines, regions, and methodological traditions. A large share of empirical research focuses on specific national experiences most notably China using quasi-natural experiments, panel econometric models, or computable general equilibrium approaches to evaluate policy impacts (Gao et al., 2019). While such studies provide valuable country-specific insights, their findings are often difficult to generalize across institutional settings and levels of economic development (Fan & Shi, 2025). Moreover, many studies examine isolated policy outcomes such as emission reductions or innovation effects without systematically linking these outcomes to tax design features or implementation conditions. This fragmentation is particularly pronounced in the post-2015 literature, a period characterized by intensified climate commitments, fiscal environmental reforms, and experimentation with hybrid policy instruments. Existing systematic and narrative reviews tend to focus narrowly on carbon pricing effectiveness, specific sectors, or individual regions, often treating policy design, outcomes, and implementation challenges as separate analytical domains (Haites, 2018; Metcalf, 2021; Yu & Cheng, 2021). As a result, important cross-cutting insights regarding how fiscal instrument design interacts with governance structures and socio-economic conditions remain underexplored.

Against this backdrop, this study advances the literature by offering three key contributions that distinguish it from existing reviews. First, the review adopts a tri-dimensional analytical framework that explicitly integrates fiscal instrument design, environmental and innovation outcomes, and implementation challenges within a single systematic synthesis. By examining these dimensions jointly rather than in isolation, the review provides a more holistic understanding of why green taxation succeeds in some contexts but underperforms in others. This integrative approach moves beyond outcome-focused assessments and highlights the institutional and political economy mechanisms that shape policy effectiveness. Second, the review makes a methodological contribution by focusing exclusively on peer-reviewed open-access literature. While many existing reviews rely heavily on subscription-based journals or grey literature, the exclusive use of open-access sources enhances transparency, reproducibility, and accessibility particularly for researchers and policymakers in developing economies. This approach also allows for a more inclusive representation of empirical evidence from diverse geographic and institutional contexts, addressing an important limitation of prior syntheses.

Third, the review places explicit emphasis on comparative analysis across governance contexts, rather than privileging a single country, region, or policy instrument. By synthesizing evidence from developed and developing economies, centralized and decentralized fiscal systems, and diverse regulatory environments, the study identifies patterns and divergences in policy performance that are not visible in country-specific or instrument-specific reviews. This comparative perspective enables the extraction of broader policy lessons regarding institutional capacity, enforcement quality, fiscal decentralization, and public acceptance.

Accordingly, the objective of this study is to systematically review and synthesize peer-reviewed open-access research on green taxation and environmental sustainability, with particular attention to three interrelated dimensions: (1) the design and types of fiscal instruments, including carbon and environmental taxes; (2) their environmental and innovation outcomes, such as emission reductions, air quality improvements, and green technological change; and (3) key implementation challenges related to governance, equity, and institutional capacity. The review focuses on studies published between 2016 and 2025, reflecting a period of intensified global adoption of green fiscal policies following major international climate commitments. To enhance methodological transparency and reproducibility, the review relies exclusively on open-access scholarly articles retrieved from Google Scholar and the Dimensions database.

Methodology

This study adopts a systematic literature review (SLR) approach to synthesize empirical and policy-oriented evidence on green taxation and environmental sustainability. The review was conducted in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA 2020) guidelines, which provide a standardized framework to enhance transparency, methodological rigor, and reproducibility in evidence synthesis (Page et al., 2021). A systematic review design is particularly appropriate given the rapid growth, disciplinary diversity, and methodological heterogeneity of research on carbon and environmental taxation across different economic, institutional, and governance contexts. Due to substantial variation in study designs, outcome indicators, data structures, and analytical techniques, a quantitative meta-analysis was not feasible. Accordingly, the study employs a qualitative thematic synthesis, which is widely recognized as suitable for integrating heterogeneous empirical findings while preserving analytical depth and contextual sensitivity (Sorrell, 2014).

The literature search was conducted using two major open-access academic databases: Google Scholar and Dimensions. These databases were selected due to their broad interdisciplinary coverage of peer-reviewed journals in environmental economics, energy policy, sustainability science, public finance, and governance studies, as well as their suitability for transparent and replicable searches (Haddaway et al., 2015). The review focused on peer-reviewed journal articles published between 2016 and 2025, reflecting the period following the Paris Agreement during which green fiscal instruments gained increased global policy prominence. Searches were restricted to English-language publications to ensure consistency in interpretation and synthesis. A structured keyword-based search strategy was developed using Boolean operators to capture studies examining taxation-based environmental policy instruments. Core search terms included combinations of “green tax,” “environmental tax,” “carbon tax,” “energy tax,” and “pollution tax” with outcome-related terms such as “environmental sustainability,” “emission reduction,” “climate change,” and “environmental performance.” The search process was iterative, and backward reference screening of influential studies was applied to enhance coverage and reduce the risk of omission. Explicit inclusion and exclusion criteria were applied to ensure relevance and analytical coherence. Studies were included if they were peer-reviewed journal articles that explicitly examined carbon taxes, environmental taxes, or green taxation instruments and analyzed environmental outcomes, economic impacts, innovation effects, or implementation challenges. Studies were excluded if they consisted of conference papers, policy briefs, dissertations, or purely technical optimization models without explicit fiscal policy relevance. Retracted studies and articles lacking full-text open-access availability were also excluded. The study selection followed a four-stage screening process consistent with PRISMA 2020. The initial search yielded 197 records, which were screened for duplicates, followed by title and abstract screening to remove irrelevant studies. Full-text eligibility assessments were then conducted using the predefined criteria, resulting in a final sample of 32 peer-reviewed articles included in the systematic synthesis. The complete selection process is documented using a PRISMA flow diagram presented in the Results section.

Data extraction was conducted using a structured framework to ensure consistency across studies. Extracted information included publication details, geographic focus, type of fiscal instrument, methodological approach, environmental and economic outcome indicators, key findings, and reported implementation challenges. Study quality was assessed qualitatively based on journal credibility, clarity of research design, methodological transparency, and logical consistency between research objectives, analytical methods, and conclusions, following established guidance for qualitative systematic reviews (Petticrew & Roberts, 2006). The synthesized evidence was analyzed using a thematic analysis approach, with findings organized into three overarching and interrelated themes: the design and structure of green taxation instruments, the environmental and economic outcomes of green taxation, and implementation challenges related to governance, equity, and institutional capacity. This tri-dimensional synthesis framework enabled systematic comparison across diverse methodologies and governance contexts while maintaining policy relevance and analytical rigor (Thomas & Harden, 2008). As the study relied exclusively on secondary data from published sources, ethical approval was not required. Despite its systematic design, the methodology has several limitations that warrant acknowledgment. The literature search was confined to Google Scholar and Dimensions, excluding subscription-based databases such as Scopus and Web of Science. While the selected databases provide broad interdisciplinary coverage, the exclusion of proprietary databases may result in the omission of some relevant studies, particularly those published in paywalled journals. Additionally, the review was limited to open-access journal articles, which enhances transparency, replicability, and accessibility, particularly for researchers and policymakers in resource-constrained contexts. However, this restriction may introduce selection bias, as some high-quality studies are not represented. Furthermore, although study quality was assessed qualitatively, the review did not apply a formal quantitative scoring or ranking system to evaluate methodological robustness across studies. These limitations suggest that the findings should be interpreted with appropriate caution regarding representativeness and generalizability. Future research could address these constraints by incorporating additional databases, including non–open-access literature, and applying standardized quality appraisal tools to further strengthen comparative inference.

Table 1

Inclusion and Exclusion Criteria

Criterion	Inclusion	Exclusion
Publication type	Peer-reviewed journal articles	Book chapters, editorials, policy briefs
Time period	2016–2025	Published before 2016
Language	English	Non-English
Policy focus	Carbon tax, environmental tax, green taxation	Non-tax environmental regulations
Outcome focus	Emissions, environmental quality, green innovation, sustainability	No environmental outcome analysis
Methodological scope	Empirical, simulation, econometric, CGE/DSGE, policy analysis	Purely technical or engineering optimization

Accessibility	Full-text open access	Paywalled or unavailable full text
Quality status	Peer-reviewed, non-retracted	Retracted or non-peer-reviewed

Result

Descriptive Characteristics of Included Studies

Following the systematic screening process described in the Methodology section, a total of 32 peer-reviewed journal articles were included in the final synthesis. These studies were selected from an initial pool of 197 records after duplicate removal, title and abstract screening, and full-text eligibility assessment in line with PRISMA 2020 guidelines. The selected articles represent a diverse range of geographic contexts, analytical methods, and policy instruments, providing a comprehensive basis for synthesizing evidence on green taxation and environmental sustainability.

In terms of geographical coverage, the majority of studies focus on China, reflecting the country's extensive use of carbon taxes, environmental taxes, and hybrid policy instruments within its dual-carbon policy framework. Additional studies examine experiences from OECD countries, European Union member states, emerging economies in Asia, Africa, and Latin America, and selected global or multi-country samples. This distribution allows for comparative insights across different institutional and developmental contexts.

Methodologically, the reviewed studies employ a variety of quantitative and qualitative approaches. Computable General Equilibrium (CGE) and Dynamic Stochastic General Equilibrium (DSGE) models are the most frequently used methods, particularly in macroeconomic and sectoral impact analyses. Econometric techniques including panel data models, ARDL approaches, and causality tests are commonly applied to assess empirical relationships between environmental taxation and emissions outcomes. A smaller but important subset of studies adopts evolutionary game theory, system dynamics, and policy simulation models to examine strategic interactions and behavioral responses to green taxation.

Table 2

Meta Table including Author (Year) and Key Findings

Author (Year)	Summary of Key Findings
Yu & Cheng (2021)	Environmental taxes stimulate green process and product innovation, with stronger effects in large and export-oriented firms, supporting the Porter Hypothesis.
Ding & Hu (2022)	Low-carbon regulation enhances innovation efficiency and carbon mitigation; institutional quality conditions effectiveness.
Zhang et al. (2020)	Carbon taxes combined with innovation subsidies outperform single instruments in promoting green technology adoption.
Zhou et al. (2025)	Environmental taxation mediates growth–sustainability trade-offs via innovation and renewable energy expansion.

Yasmeen et al. (2023)	Environmental taxes improve energy efficiency indirectly through green technology adoption; resource dependence weakens effects.
Liu (2024)	Implementation faces institutional fragmentation, regional disparity, and coordination challenges.
Feng et al. (2022)	Low-carbon taxes reduce emissions but suffer from fragmented design and weak intergovernmental coordination.
Wang & Hu (2022)	Environmental tax reform significantly improves corporate environmental performance, especially among compliant firms.
Wulandari & Semertzidis (n.d.)	Public acceptance depends on perceived fairness, transparency, and revenue recycling.
Putranti et al. (2025)	Legal and enforcement gaps hinder effective internalization of environmental externalities.
Hughes & Landry (2024)	Political resistance and regional inequality undermine long-term policy stability.
Gao et al. (2019)	Environmental concern amplifies the effectiveness of environmental taxation on emission reduction.
Varadi et al. (2025)	Policy coherence and regulatory certainty are critical for business adaptation to climate policies.
Lobont et al. (2025)	Environmental taxes guide energy transition when revenues are recycled and legitimacy is maintained.
Hasan et al. (2021)	Carbon taxes reduce aviation emissions when combined with efficiency measures; exemptions weaken outcomes.
Renner et al. (2018)	Carbon taxes reduce emissions but create regressive welfare effects without redistribution.
Tsai (2020)	Carbon taxes deliver more stable emission reductions than trading schemes; offsets are complementary.
Duan et al. (2022)	Highlights strengths and limitations of carbon markets and need for integration with taxation.
Zhou et al. (2024)	Carbon taxation can mobilize climate finance but governance challenges persist.
Huang et al. (2022)	Fiscal instruments improve building efficiency when aligned with technical standards.
Metcalf (2021)	Carbon taxes are cost-effective instruments when designed with predictability and transparency.

Haites (2018)	Carbon taxes are efficient but politically constrained by distributional concerns.
Li et al. (2025)	Carbon taxes reduce emissions with modest GDP impacts when revenues are recycled.
Wahyudi & Leny (2025)	Carbon taxes significantly contribute to long-term net-zero targets.
Fan & Shi (2025)	Fiscal decentralization affects environmental tax effectiveness across regions.
Kumar & Stauvermann (2024)	Environmental taxes require redistribution to avoid regressive outcomes.
Dées & Seghini (2024)	Hybrid policy mixes outperform standalone carbon taxes.
Koh et al. (2021)	Equity concerns dominate political feasibility in developing contexts.
Chen et al. (2023)	Green fiscal policies reduce carbon intensity and promote innovation.
Wolde-rufael & Mulat-weldemeskel (2021)	Weak institutions reduce the effectiveness of environmental taxes.
Maiti (2024)	Enforcement quality determines real-world effectiveness of green taxation.
Han & Li (2020)	Environmental taxes significantly improve air quality indicators.

Evidence Integration and Analytical Strategy

This section presents the results of the systematic review in direct alignment with the predefined research objectives and advances beyond descriptive reporting by offering a comparative and integrative synthesis of evidence across regions, income levels, and institutional contexts. Drawing on 32 peer-reviewed studies published between 2016 and 2025, the findings are organized thematically to assess (i) environmental effectiveness, (ii) innovation and technological outcomes, (iii) governance and implementation challenges, and (iv) equity and public acceptance dimensions of green taxation. Rather than summarizing studies individually, the synthesis emphasizes patterns of convergence, divergence, and conditional effectiveness, reflecting differences in governance quality, economic structure, and policy design. Evidence is drawn from quantitative, qualitative, mixed-method, and review-based studies to ensure analytical breadth and robustness.

Environmental Effectiveness of Green Taxation

Across the reviewed literature, a strong consensus emerges that green taxation particularly carbon and energy taxes has a statistically significant impact on reducing greenhouse gas emissions. Quantitative studies conducted in both developed and emerging economies consistently show that carbon taxes reduce emissions by increasing the cost of carbon-intensive activities and encouraging substitution toward cleaner energy sources (Li et al., 2025; Wahyudi & Leny, 2025). However, the magnitude and stability of these effects vary systematically across institutional contexts. Comparative evidence suggests that carbon taxes tend to generate more predictable and sustained emission reductions than emissions trading schemes, particularly in countries with stable fiscal institutions. While carbon markets are vulnerable to allowance over-allocation, price volatility, and regulatory uncertainty, carbon taxes provide a clearer and more durable price signal for long-term investment decisions (Duan et al., 2022; Tsai, 2020). This distinction is especially pronounced in developing and transition economies, where administrative capacity constraints often undermine the effectiveness of complex trading mechanisms.

Beyond climate mitigation, multiple studies document co-benefits for environmental quality, including reductions in air pollution and energy intensity (Chen et al., 2023; Han & Li, 2020). Nevertheless, the synthesis highlights significant heterogeneity. In regions characterized by weak enforcement, fiscal decentralization, or fragmented governance, environmental gains are smaller and less consistent despite the formal presence of environmental taxes (Fan & Shi, 2025; Wolde-rufael & Mulat-weldemeskel, 2021). Studies converge in identifying low tax rates, sectoral exemptions, and policy instability as recurring factors that dilute environmental effectiveness, particularly in lower-income contexts (Maiti, 2024). These findings indicate that environmental outcomes are not solely driven by the existence of green taxes but are highly contingent on institutional and design conditions.

Innovation and Technological Outcomes

Addressing the second research objective, the reviewed literature provides robust evidence that green taxation can stimulate green innovation, technological upgrading, and energy efficiency improvements, though again with notable cross-country and sectoral variation. Firm-level quantitative studies in China and other emerging economies demonstrate that environmental taxes incentivize both process and product innovation by raising the relative cost of pollution-intensive production (Chen et al., 2023; Yu & Cheng, 2021). However, these innovation effects are not uniform across firms. Comparative analysis reveals that large firms and export-oriented enterprises respond more strongly to green taxation, reflecting greater access to capital, higher absorptive capacity, and exposure to international environmental standards (Yu & Cheng, 2021). Institutional quality further conditions outcomes: firms operating within credible and predictable regulatory environments exhibit stronger innovation responses than those in weak governance settings (Ding & Hu, 2022). This pattern holds across multiple empirical contexts, suggesting that green taxation operates most effectively as an innovation driver when embedded in institutionally supportive ecosystems.

A recurring cross-study finding is the superiority of policy complementarities over standalone instruments. Carbon taxes combined with innovation subsidies, renewable energy incentives, or green finance mechanisms consistently outperform single-policy approaches in accelerating low-carbon technological transitions (Chen et al., 2023; Dées & Seghini, 2024). Conversely, studies focusing on resource-dependent economies report weaker innovation responses, as environmental taxes primarily increase production costs without inducing meaningful technological change (Gao et al., 2019). Review-based evidence reinforces this conclusion, emphasizing that environmental taxation stimulates innovation primarily under strong institutional, financial, and policy coordination frameworks (Metcalf, 2021; Zhou et al., 2025).

Governance and Institutional Implementation

Governance and implementation challenges emerge as a central explanatory factor for divergent outcomes across the literature. Qualitative and mixed-method studies consistently identify fragmented policy design, weak intergovernmental coordination, and inconsistent enforcement as major barriers to effective green taxation (Feng et al., 2022; Liu, 2024). Comparative evidence from decentralized governance systems shows that misalignment between national tax objectives and subnational implementation capacity often undermines compliance and policy coherence (Fan & Shi, 2025).

Political economy factors further differentiate outcomes across contexts. In high-income countries, resistance often stems from competitiveness and employment concerns, whereas in developing economies, institutional fragility and administrative limitations play a more prominent role (Hughes & Landry, 2024). Across regions, regulatory certainty emerges as a critical enabling condition. Firms are significantly more likely to invest in low-carbon technologies when environmental taxes are predictable, transparently administered, and aligned with complementary regulations (Lobont et al., 2025). Legal analyses further reveal persistent gaps between the polluter-pays principle and its practical enforcement, particularly in contexts with limited monitoring and legal capacity (Putranti et al., 2025).

Equity, Distributional Effects, and Public Acceptance

The synthesis of equity-related evidence reveals both convergence and contention within the literature. Quantitative and simulation-based studies widely agree that carbon and energy taxes are regressive in the absence of compensatory mechanisms, disproportionately affecting low-income households due to higher relative energy expenditures (Renner et al., 2018). However, cross-study comparison shows that these outcomes are policy-contingent rather than inevitable. Evidence from both developed and developing contexts demonstrates that revenue recycling through targeted transfers, tax reductions, or public investment can offset welfare losses and, in some cases, produce progressive distributional effects (Duan et al., 2022; Lobont et al., 2025). Public acceptance emerges as a decisive mediator of effectiveness. Survey-based studies consistently find that perceived fairness, transparency, and trust in government institutions significantly influence societal support for environmental taxation (Koh et al., 2021). Behavioral studies further show that environmental concern amplifies the emission-reduction impact of green taxes, highlighting interaction effects between fiscal instruments and social norms (Xu et al., 2025). In developing-country settings, unresolved equity concerns remain a dominant constraint on political feasibility and long-term policy durability (Koh et al., 2021).

Discussion

This systematic review set out to synthesize recent empirical and review-based evidence on green taxation through a tri-dimensional analytical lens encompassing (i) environmental effectiveness, (ii) innovation and technological transformation, and (iii) governance, equity, and implementation challenges. The revised Results demonstrate substantial convergence across quantitative, qualitative, mixed-method, and review studies, while also revealing systematic differences across regions, income groups, and institutional settings. This

Discussion interprets those findings in relation to established economic theory and contemporary policy debates, with particular emphasis on explaining why green taxation performs unevenly across contexts rather than reiterating individual study outcomes.

Environmental Effectiveness in Comparative Context

The reviewed evidence provides strong support for the environmental effectiveness of green taxation, particularly carbon and energy taxes, when implemented under stable and credible institutional conditions. Across a wide range of empirical settings, environmental taxes are shown to reduce greenhouse gas emissions, improve air quality, and contribute to long-term decarbonization objectives (Han & Li, 2020; Li et al., 2025; Zhou et al., 2024). These findings are consistent with Pigouvian economic theory, which posits that pricing negative externalities alters behavior by internalizing social costs (Metcalf, 2021). However, the synthesis highlights that environmental effectiveness is highly context-dependent. Comparative evidence suggests that carbon taxes tend to generate more stable and predictable emission reductions than emissions trading schemes, particularly in countries with weaker market institutions and limited administrative capacity (Duan et al., 2022; Tsai, 2020). In such contexts, the simplicity and price certainty of taxation-based instruments appear to outweigh the theoretical efficiency advantages of market-based trading systems. Conversely, in jurisdictions characterized by weak enforcement, fiscal decentralization, or extensive exemptions, emission reductions are smaller and less consistent despite the formal adoption of environmental taxes (Fan & Shi, 2025; Maiti, 2024; Wolde-rufael & Mulat-weldemeskel, 2021). These findings help reconcile conflicting results in the literature by demonstrating that institutional quality and policy design not instrument choice alone largely determine environmental outcomes.

Innovation Effects and Conditional Support for the Porter Hypothesis

A key contribution of the reviewed literature lies in its nuanced support for the Porter Hypothesis. Firm-level and sectoral studies consistently indicate that environmental taxation can stimulate green process and product innovation, particularly among large firms, export-oriented enterprises, and technologically capable sectors (Chen et al., 2023; Yu & Cheng, 2021). Environmental taxes increase the relative cost of pollution-intensive production, thereby incentivizing investments in cleaner technologies and energy efficiency (Kumar & Stauvermann, 2025). At the same time, the synthesis demonstrates that innovation effects are conditional rather than automatic. Regulatory stringency alone is insufficient to induce widespread technological upgrading. Instead, innovation responses are significantly stronger when environmental taxes are embedded within complementary policy frameworks that include innovation subsidies, renewable energy incentives, and green finance mechanisms (Dées & Seghini, 2024; Zhang et al., 2020). This cross-study evidence supports a growing consensus that hybrid policy mixes outperform standalone instruments, particularly in capital-intensive and high-emission sectors. In resource-dependent economies or sectors with limited access to capital, environmental taxes often raise production costs without generating commensurate innovation benefits, highlighting structural constraints that limit policy effectiveness (Gao et al., 2019). By emphasizing policy interaction effects, this review advances existing scholarship beyond single-instrument evaluations.

Governance and Institutional Capacity as Binding Constraints

Governance and institutional capacity emerge as the most significant constraints on the real-world performance of green taxation. Across qualitative and mixed-method studies, fragmented policy design, weak intergovernmental coordination, and inconsistent enforcement repeatedly undermine environmental and innovation outcomes (Feng et al., 2022; Liu, 2024). These challenges are particularly pronounced in decentralized governance systems, where misalignment between national tax objectives and subnational implementation capacity reduces compliance and policy coherence (Fan & Shi, 2025). Political economy considerations further shape implementation trajectories. Evidence from Canada and other jurisdictions illustrates how political resistance, regional inequality, and concerns about competitiveness can destabilize green taxation frameworks and weaken long-term credibility (Hughes & Landry, 2024; Wulandari & Semertzidis, 2024). The synthesis suggests that technical efficiency alone is insufficient to ensure policy durability. Regulatory certainty, transparency, and institutional coherence are essential preconditions for sustained private-sector investment in low-carbon technologies (Lobont et al., 2025). Where policies are perceived as unstable or reversible, firms tend to delay or minimize green investments, undermining the dynamic efficiency of environmental taxes.

Equity, Distributional Outcomes, and Public Acceptance

Equity considerations represent a central axis around which the political feasibility of green taxation revolves. Quantitative general equilibrium and simulation studies consistently show that carbon and energy taxes can be regressive in the absence of compensatory measures, disproportionately affecting low-income households due to higher relative energy expenditures (Renner et al., 2018). These effects are particularly salient in developing economies, where household vulnerability to energy price increases is more pronounced (Koh et al., 2021). Importantly, the synthesis demonstrates that regressive outcomes are not inherent to green taxation but are largely determined by revenue-use design. When tax revenues are recycled through targeted transfers, reductions in distortionary taxes, or investments in clean energy access, negative welfare impacts can be mitigated or reversed (Li et al., 2025; Metcalf, 2021). Public acceptance studies further indicate that perceptions of fairness, transparency, and earmarking play a decisive role in shaping societal support for environmental taxes (Gao et al., 2019; Koh et al., 2021). These findings underscore that environmental taxation must be designed as a socially embedded fiscal reform rather than a narrowly technical instrument.

Conclusions

This study provides a systematic synthesis of recent empirical and review-based evidence on green taxation and environmental sustainability, with a particular focus on fiscal instrument design, environmental and innovation outcomes, and implementation challenges. By reviewing peer-reviewed open-access studies published between 2016 and 2025, the study consolidates a fragmented literature and enhances understanding of the role of environmental taxation within contemporary climate and energy policy debates. The reviewed evidence indicates that green taxation especially carbon and energy taxes can generate meaningful and cost-effective reductions in greenhouse gas emissions and improvements in environmental quality when implemented within stable and credible policy environments. Across diverse national contexts, carbon taxes are consistently associated with lower emissions, improved air quality, and enhanced energy efficiency. Compared with emissions trading schemes, carbon taxes tend to provide more predictable price signals and more consistent outcomes, particularly in settings characterized by market design limitations, regulatory uncertainty, or weak enforcement. However, the magnitude and durability of these effects vary substantially across countries, reflecting differences in institutional capacity, enforcement quality, and policy coordination.

Beyond direct environmental outcomes, the review finds consistent evidence that environmental taxes can stimulate green technological innovation and support energy-efficient structural transformation. These findings provide conditional support for the Porter Hypothesis, indicating that innovation responses depend on regulatory credibility, institutional quality, and complementary policy measures. Environmental taxes implemented in isolation are generally less effective, whereas integrated policy mixes that combine taxation with innovation subsidies, renewable energy incentives, and regulatory standards are more successful in advancing long-term decarbonization. Governance and political economy constraints emerge as central determinants of policy performance, with fragmented policy design, weak intergovernmental coordination, and inconsistent enforcement frequently undermining effectiveness, particularly in decentralized systems and developing economies. Distributional impacts further influence political feasibility and public acceptance, highlighting the importance of equity considerations in environmental tax design.

Implications

The findings of this study provide important implications for policymakers, researchers, and practitioners concerned with environmental sustainability and fiscal reform. First, the evidence suggests that green taxation should be conceptualized as part of a broader and integrated climate and energy policy framework rather than as a standalone fiscal instrument. The effectiveness of environmental taxes depends not only on tax rates but also on policy coherence, regulatory stability, and institutional credibility. Second, the study highlights the critical role of governance and institutional capacity in shaping the outcomes of green taxation. Strengthening administrative systems, improving intergovernmental coordination, and ensuring consistent enforcement are essential for maximizing environmental and innovation-related benefits. These institutional considerations are particularly relevant in decentralized governance systems and in developing and emerging economies, where implementation challenges are more pronounced.

Third, the findings underscore the importance of addressing distributional and equity concerns in the design of environmental taxes. While green taxes may impose regressive burdens if poorly designed, transparent revenue recycling through targeted transfers, reductions in distortionary taxes, or investments in clean energy access can substantially mitigate adverse welfare effects and enhance public acceptance. Finally, the study has implications for future research. The synthesis reveals a need for more comparative and longitudinal studies that explicitly link fiscal instrument design with governance quality, innovation dynamics, and distributional outcomes across different institutional contexts. Expanding empirical evidence from developing economies and incorporating mixed-method approaches would further strengthen understanding of how green taxation can contribute to sustainable development.

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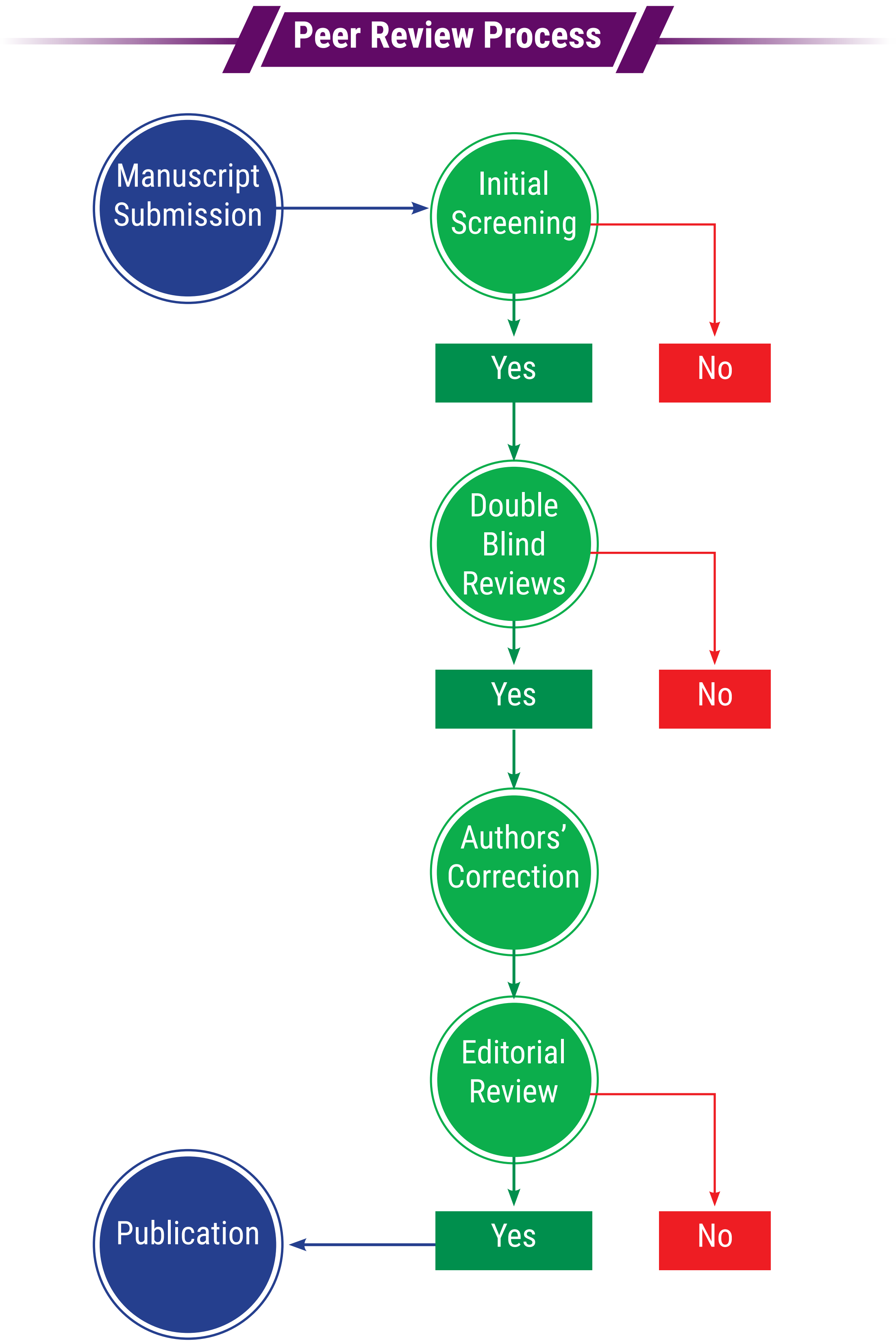
Chairman's Message

It is a matter of great pride and satisfaction that *TIC Journal of Society and Enterprise* is publishing its **first volume**, marking a significant milestone in the academic journey of Triveni International College. This publication reflects our collective commitment to research, innovation, and the dissemination of knowledge. On this historic occasion, on behalf of the BoD, I extend my heartfelt gratitude to the Editorial Board, faculty members, authors, reviewers, students, and all contributors whose dedication and hard work have made this inaugural volume possible. I am confident that this journal will serve as a valuable platform for scholarly exchange and intellectual growth. I congratulate everyone involved and wish this publication continued success in the years ahead.

Suman Bhattarai
Chairman
Board of Directors
Triveni International College, Pokhara



Peer Review Process
Manuscript Submission
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Yes
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Authors' Correction
Editorial Review
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