



ISSN: 2288-7709

JEMM website: <https://accesson.kr/jemm>doi: <http://dx.doi.org/10.20482/jemm.2025.13.2.111>

# Factors Affecting the Tourism Industry of Central Luzon, Philippines

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Received: February 24, 2025. Revised: March 10, 2025. Accepted: April 30, 2025.

## Abstract

Central Luzon, Philippines, boasts a wealth of cultural experiences and natural attractions, yet its tourism industry faces several significant challenges. Issues such as inadequate infrastructure, environmental degradation, and socio-political instability hinder the region's ability to sustain tourism demand. Poor transportation, environmental damage, and safety concerns further exacerbate these challenges. Additionally, political factors can skew resource allocation, favoring more developed areas over marginalized communities. Emerging trends like digitalization and shifting consumer preferences necessitate innovative marketing strategies. To revitalize and sustain the region's tourism industry, it is crucial to address these challenges and understand the impact of socio-economic demographics and PESTLE (Political, Economic, Social, Technological, Legal, and Environmental) factors.

**Keywords :** PESTLE, Tourism, Socio-Demographic, Sustainable, Central Luzon

**JEL Classification Code:** A12,E0,Q01

## 1. Introduction

Today, tourism stands as the most powerful sector in global development and economic growth. The industry is recognized as one of the world's largest and fastest-growing economic sectors, even surpassing the automotive and food industries (Inkson and Minnaert, 2022; Bulilan, 2021).

Being closely related to the production, marketing, and development of services, tourism also greatly impacts the societies it touches, compared to traditional industries (Abbas et al., 2021); (Robinson et al., 2020). Its close relationship with other economic branches increases the commodity demand through the foreign population, therefore pushing industrial development and addressing challenges in employment (Khan et al., 2020). Additionally, Alrwajfah et al. (2019) emphasize the benefits of tourism to the economy, social culture, and environment of host communities in the development stage by improving the quality of life.

In the Philippines, an archipelago comprised of 7,107 islands and islets, the current economic growth and development are driven by its reputation as an emerging tourist destination (Aquino & Porter, 2022). Moreover, the Philippine Statistics Authority recorded the highest tourism growth in 2024 since 2000, with an 8.6% contribution to the 2023 Tourism GDP of PHP 404.02 billion (USD 7 billion). This amounted to PHP 2.09 trillion in Tourism Gross Domestic Value Added (TVGDA), representing a 47.9% increase from 2022 and a 109% rise from 2021 (Tourism Posted Highest Growth in 2023, Contributing 8.6 Percent to the Economy, 2024).

Specifically, located in one of the country's three main islands, Central Luzon (Region III)'s tourism sector thrived, brought about by its two major tourism-oriented freeports: Clark Freeport Zone in Pampanga and Subic Bay Freeport Zone in Zambales (Costamero, 2024). Also, the Clark International Airport (CRK), with an 8 million passenger capacity, serving both international and domestic flights from its 82,600-square-meter, four-level terminal within the

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Clark Freeport Zone;(Development of Central Luzon Regional Tourism Branding Terms of Reference, n.d.). Besides this, Central Luzon has become a must-visit destination with its emerging tourist spots and diverse tourism experiences.

The tourism industry in Central Luzon faces several challenges despite its rich cultural heritage and natural attractions. Key issues include inadequate infrastructure, limited marketing efforts, environmental degradation, and socio-political instability. The COVID-19 pandemic has exacerbated these problems, leading to a decline in tourist arrivals and economic losses (Bulilan, 2021). Additionally, political considerations may influence resource allocation, leading to disparities in tourism development.

Emerging trends such as digitalization and changing consumer preferences require innovative marketing and service delivery approaches. Understanding these issues is crucial for developing effective strategies to address the challenges. Both internal factors, like demographics, and external factors, such as political, economic, social, technological, legal, and environmental aspects, play significant roles in ensuring the sustainability of the region's tourism industry.

Analyzing these factors is essential for determining responsive interventions to strengthen sustainability efforts and support the growth of Central Luzon's tourism industry, as well as for evidence-based policymaking and strategic planning (Tourism Posted Highest Growth in 2023, Contributing 8.6 Percent to the Economy, 2024; Aquino & Porter, 2022).

### 1.1. Research Objectives

This study aimed to analyze the factors affecting the tourism industry in Central Luzon, Philippines, which plays a crucial role in the region's economic development. Contributing significantly to both local and national economic development, an understanding of the key drivers and the present challenges faced by the industry to identify strategies to foster sustainable development and improve the overall competitiveness of Central Luzon as a tourism destination in the Philippines.

Thus, specifically, this study aimed to gather data and achieve the following objectives:

1. Determine the socio-demographic profile of the tourists in Central Luzon be described in terms of:
  - a. Age;
  - b. Sex;
  - c. Marital Status;
  - d. Highest Educational Attainment; and
  - e. Monthly Income?
2. Describe the Central Luzon tourism industry in terms of the following PESTLE factors:

- a. Political;
- b. Economic;
- c. Social;
- d. Technological;
- e. Legal; and
- f. Environmental?

3. Determine whether there is significant relationship between the profile of the respondents based on the socio-demographic factors and each PESTLE factor?

4. Determine if there is a significant relationship between each PESTLE factors?

5. To prove or disprove the following hypotheses:

5.1. There is no significant relationship between the demographic profile of the respondents and each PESTLE factor.

5.2. There is no significant relationship between the PESTLE factors.

## 2. Literature Review

### 2.1. Socio-Demographic Factors

Kara and Mkwizu (2020) define demographic factors as a descriptive segmentation technique involving sociodemographic aspects. Huy and Phuc (2023) describe socio-demographic profiles as traits like age, gender, education, and income, essential for decision-making. Parsons et al. (2024) emphasize that reporting research participant demographics aids in understanding a study's generalizability.

In the tourism industry, recognizing and managing change across economic, political, environmental, technological, social, and demographic factors is crucial (Robinson and Schänzel, 2019). Demographic changes directly affect tourism demand and the labor market, with indirect impacts on jobs and services. Understanding these trends is key for future tourism growth.

Uslu et al. (2020) identify multiple demographic variables influencing tourism, including residence length, proximity, income dependence, destination life cycle, age, sex, and education. These factors affect community perceptions of tourism's economic, socio-cultural, and environmental impacts.

- **Age:** Influences leisure demand, desire for relaxation and nature exploration, and wildlife activity participation (Kara and Mkwizu, 2020). Younger populations view tourism development more positively (Bhat and Mishra, 2020).
- **Sex:** Men and women have different travel patterns and motivations. Men travel more for business, women for social reasons, impacting participation in activities (Figueroa-Domecq and Segovia-Perez, 2020; Kara and Mkwizu, 2020).

- **Marital Status:** Influences vacation decisions and leisure time. Married individuals have more positive attitudes towards tourism's social and environmental impacts (Bhat and Mishra, 2020; Wang'ombe et al., 2022).
- **Education:** Educated individuals generally view tourism development more positively. Education broadens perspectives and increases tourism participation (Bhat and Mishra, 2020; Wang'ombe et al., 2022).
- **Income:** Higher income levels correlate with increased tourism participation. Income influences travel decisions, though not always predictably (Wang'ombe et al., 2022).

## 2.2. PESTLE Factors

PESTLE stands for Political, Economic, Social, Technological, Environmental, and Legal factors. It's a valuable tool for understanding major macroeconomic trends that impact businesses, such as economic downturns or demographic shifts, which are beyond a company's control. Recognizing these PESTLE factors helps businesses analyze their external environment and strategically respond in their planning and decision-making processes. In industries like tourism, understanding these external factors is crucial for management's decision-making and sustainability. According to Mir and Mir (2019), the PESTLE framework is widely used for evaluating an organization's macro-environment, aiding in strategic planning and response.

### Political

Political factors involve the region's political structure, status, and system, including government policies. They encompass regulations related to employment, environmental standards, tax policies, and political stability. Political risk is significant in tourism, as poor governance and high political risk can hinder the industry's growth (Mir & Mir, 2019; Susilo, 2020; Ghalia et al., 2019).

### Economic

For many countries, especially developing ones, tourism is a crucial revenue source, influencing the balance of payments and living standards. The economy affects purchasing power and the cost of capital, considering factors like economic growth, interest rates, and inflation. Tourism expansion boosts foreign exchange, stimulates local production, creates employment, and contributes to economic growth. While tourism brings several positive economic effects, it also has negative impacts such as rising prices and inflation (Nunkoo et al., 2019; Susilo, 2020; Uslu et al., 2020).

### Social

Social factors encompass demographic and cultural elements that affect customer needs and market sizes. Excessive or unplanned tourism development can benefit local economies but also negatively impact local communities and resources. Local communities must adapt to changes brought by tourism, maintaining both optimistic and pessimistic outlooks. Understanding local perspectives on tourism development helps minimize negative impacts and maximize benefits (Susilo, 2020; Wang et al., 2020; Uslu et al., 2020; Lim & Lee, 2020; Thetsane, 2019).

### Technological

Technological factors include research and development activities, automation, and the rate of technological change. Technology is crucial in the tourism sector, aiding daily operations and enhancing the customer experience. Advancements in Information Communication Technology (ICT) have positively impacted the tourism industry, aiding business transactions and increasing tourism demand. The strategic use of ICT can help tourism businesses achieve sustainable development (Susilo, 2020; Giotis & Papadionysiou, 2022).

### Legal

Legal factors relate to the rules or laws governing the industry. Changes in law can alter industry behavior. Legal factors include laws and policies regarding labor, capital, and trade aspects. A robust legal framework is vital for tourism development, addressing issues like the documentation process for visitors (Susilo, 2020; Mir & Mir, 2019).

### Environmental

Sustainable tourism manages resources to meet social, economic, and aesthetic needs while respecting cultural integrity, biodiversity, and ecological processes. Environmental factors include maintaining ecological balances, sustainability, and implementing environmental laws. Tourism has both positive impacts on economies and negative effects on the environment, such as local resource depletion and pollution. Environmental sustainability is crucial due to economic and demographic growth's adverse effects on natural resources. The tourism sector significantly impacts the environment, using non-renewable resources. Sustainable tourism considers the present and future impacts on the economy, society, and environment. The hospitality industry is shifting to prioritize renewable energy, efficient resource use, and waste recycling to minimize environmental impact (Elmo et al., 2020; Mir & Mir, 2019; Saviolidis et al., 2021; Moliner et al., 2019).

### 3. Research Methods and Materials

#### 3.1. Research Design

The research used a descriptive correlational design to analyze Central Luzon's tourism industry, focusing on tourists' socio-demographic profiles (age, sex, marital status, education, income) and the PESTLE factors (Political, Economic, Social, Technological, Legal, Environmental). It aimed to determine the relationships between these factors. Data was gathered using a descriptive research methodology with a quantitative approach, specifically through survey questionnaires.

#### 3.2. Research Population and Sample Selection

The study focused on various tourist destinations in Central Luzon, Philippines, including provinces like Aurora, Bataan, Bulacan, Nueva Ecija, Pampanga, Tarlac, and Zambales. The target respondents were gastronomic tourists aged 15 and older. Based on data from the Philippine Department of Tourism, the average number of travelers in Central Luzon from 2021-2023 was 3,777,435. Using Slovin's formula with a 5% margin of error, the sample size was determined to be 400, divided equally among local and foreign tourists.

#### 3.3. Data Collection Methods

Data was gathered using a self-developed survey questionnaire with a 5-point Likert scale, divided into two parts: one for socio-demographic profiles and one for PESTLE factors. Validity and reliability tests, particularly face validity and pilot testing, were conducted. The pilot-tested questionnaires yielded a Cronbach's alpha of .96, indicating excellent internal consistency.

#### 3.4. Data Analysis Technique

Data was treated statistically using frequency distribution, percentage, and weighted mean. The weighted means of the criteria set to measure the PESTLE factors affecting Central Luzon's tourism industry were interpreted based on predefined interpretations as presented in Table 1.

**Table 1:** Interpretation of the factors affecting the tourism industry in Central Luzon

| Rating | Statistical Range | Adjectival Rating | Interpretation  |
|--------|-------------------|-------------------|---|
| 1      | 1.00 – 1.80       | Strongly Disagree | Never observed and did not affect the tourism experience during the visit in Central Luzon, |

|   |             |                |   |
|---|-------------|----------------|---|
|   |             |                | Philippines.  |
| 2 | 1.81 – 2.60 | Disagree       | Seldom observed but did not affect the tourism experience of the visit in Central Luzon, Philippines at all.            |
| 3 | 2.61 – 3.40 | Somewhat Agree | Sporadically observed and barely affected the tourism experience of the visit in Central Luzon, Philippines.            |
| 4 | 3.41 – 4.20 | Agree          | Observed and slightly affected the tourism experience of the visit in Central Luzon, Philippines.                       |
| 5 | 4.21 – 5.00 | Strongly Agree | Consistently observed and strongly affected the positive tourism experience of the visit in Central Luzon, Philippines. |

To determine the relationships between each PESTLE factor and the socio-demographic factors of the respondents, the researcher used the Pearson Correlation Coefficient (r) formula. This formula produces results ranging from -1 to 1: a positive value indicates a positive correlation, zero indicates no correlation, and a negative value indicates a negative correlation. Table 2, adapted from Abela (2019) referencing Evans (1996), presents the interpretations for the degree of positive correlation.

**Table 2:** Positive Correlation Value Interpretation

| Range     | Interpretation |
|-----------|----------------|
| .01 – .19 | Very Weak      |
| .20 – .39 | Weak           |
| .40 – .59 | Moderate       |
| .60 – .79 | Strong         |
| .80 – 1.0 | Very Strong    |

### 4. Results and Discussion

#### 4.1. Socio-Demographic Profiles of the Respondents

##### 4.1.1. Socio-Demographic Profile According to Age

The data gathered indicates a predominance of younger tourists in Central Luzon, with the 20 to 24 years old group being the most significant among both foreign and local respondents. This suggests that Central Luzon attracts a youthful demographic, potentially due to activities, events, and attractions that appeal to younger individuals. The lack of respondents in the 50 years and above category implies that the region's tourism offerings are less attractive to older age groups or that they prefer different destinations.

The significant representation of tourists aged 20 to 24

years or 48.3% of the total respondents could be attributed to several factors, including the presence of universities and colleges in the region, youth-oriented festivals, and adventure tourism activities popular among younger individuals.

These align with the statement of Kara and Mkwizu (2020), indicating that the likelihood of participating in wildlife activities is higher among younger individuals and decreases with age. This suggests that the viability of tourism attractions can be influenced by the age of the target audience. Additionally, the findings support the notion that age is a determinant of demand in the tourism industry, as discussed by Kara and Mkwizu (2020). While some studies challenge the link between age and tourism demand, it has been observed that age positively influences individuals' desire for relaxation and nature exploration. This aligns with Bhat and Mishra (2020), who noted that age impacts tourism perceptions, with the younger generation viewing tourism development more positively than other age groups.

#### 4.1.2. Socio-Demographic Profile According to Sex

According to the data analyzed, there is a higher proportion of male tourists compared to female tourists in Central Luzon, with males constituting nearly two-thirds (63.8%) of the total respondents. This trend is evident among both foreign and local tourists, with an even higher male dominance among local tourists (67.5%). The higher number of male tourists could be due to the types of activities and attractions available in the region, which might be more appealing to male tourists.

These findings align with Kara and Mkwizu (2020), who observed that travel patterns differ between men and women based on their travel motivations. Men tend to travel more for business-related activities, while women travel mainly to visit friends and relatives and prefer shorter trips. Women are more involved in shopping and are more affected by intrapersonal or structural constraints such as cost, time, and family commitments. Consequently, women participate more in shopping, dining, and cultural activities, while men are more likely to engage in outdoor and adventure activities, such as skiing.

#### 4.1.3. Socio-Demographic Profile According to Marital Status

The data reveals a stark contrast between the marital status of foreign and local tourists visiting Central Luzon. A vast majority of foreign tourists are single at 92%, while the majority of local tourists are married represented by 66% or 132 out of the 200 respondents. This indicates that single foreign individuals are more likely to visit Central Luzon compared to married ones, while the local tourist demographic shows a higher proportion of married visitors.

The predominance of single foreign tourists in Central

Luzon could be due to factors like greater freedom to travel, the appeal of adventure and social activities, and opportunities for cultural exchange. On the other hand, the higher proportion of married local tourists suggests that Central Luzon may be a preferred destination for family-oriented trips or vacations among locals.

These findings corroborate Bhat and Mishra (2020), who stated that marital status significantly influences vacation decisions. Married couples spend less time on leisure activities than singles due to social and family obligations, while singles prefer shorter but more frequent trips and have more free time for various activities. Additionally, Bhat and Mishra (2020) found that married residents have a positive attitude towards tourism's effects on social life and the local environment.

The findings also align with Wang'ombe et al. (2022), who noted that travel behavior and destination choices vary depending on marital status, affecting individuals' priorities, decision-making, disposable income, and preferences.

#### 4.1.4. Socio-Demographic Profile According to Highest Educational Attainment

The data suggests a difference in the educational backgrounds of foreign and local tourists visiting Central Luzon. Foreign tourists tend to have higher educational attainment, with a significant portion having completed college-level education or holding college degrees. In contrast, local tourists show a more varied distribution, with a substantial proportion being high school graduates.

The disparity in educational attainment between foreign and local tourists could reflect differences in travel motivations, spending capacity, and preferred activities. Foreign tourists with higher educational attainment may have greater financial resources and a preference for cultural, historical, or adventure experiences. Local tourists, including high school graduates, may prioritize leisure activities or family-oriented trips, reflecting different travel patterns within the Philippines.

The findings affirm the observations of Bhat and Mishra (2020), that education significantly influences residents' attitudes toward tourism development. The educated segment of the host population generally views tourism development more positively compared to the less educated segment. Additionally, these findings corroborate the analysis by Wang'ombe et al. (2022), which indicates that education broadens an individual's perspectives, fosters experiences of different cultures, and establishes curiosity. Education serves as a primary indicator of status and tastes in society, with individuals possessing similar education levels sharing similar tastes, preferences, values, and perceptions.



#### 4.1.5. Socio-Demographic Profile According to Monthly Income

Data indicates differences in the income distribution between foreign and local tourists visiting Central Luzon. While both groups have a significant portion earning less than \$20 per month, foreign tourists show a higher proportion in the \$180 to \$259 income range compared to local tourists.

The income distribution reflects variations in spending power, travel motivations, and lifestyle preferences between foreign and local tourists. Foreign tourists with higher incomes may have more discretionary funds for travel and leisure activities, allowing them to explore more upscale accommodations, dining options, and attractions. Local tourists with lower incomes may prioritize budget-friendly travel options and seek affordable leisure activities within their means.

These findings support the claims by Wang'ombe et al. (2022) that income significantly influences tourism demand. They noted that different income levels correspond to varying lifestyles, behaviors, and values that affect tourism participation. Higher income groups and professionals, who have more disposable income, tend to participate more in tourism.

### 4.2. Correlation Analysis with PESTLE Factors

#### 4.2.1. Political Factors

The combined grand mean for respondents' agreement on various political factors affecting the tourism industry in Central Luzon is 3.89 (Agree), indicating that the majority observed these factors, which slightly impacted their tourism experience. While, the highest combined Average Weighted Mean (AWM) of 4.11 was for "Government policies and regulations in Central Luzon support sustainable tourism development." The next highest was 3.97 for "I feel confident about the safety and security measures implemented by the government in Central Luzon." The lowest was 3.74 for "The government's efforts in promoting tourism initiatives effectively enhance the attractiveness of Central Luzon as a tourist destination."

The average weighted mean indicates that perceived political stability significantly influences tourist decisions. Political conflicts or instability can create uncertainties and safety concerns among potential visitors, negatively impacting tourist arrivals and revenues. Stakeholders in the tourism industry rely on a stable political environment to plan investments and promotional activities effectively.

This underscores the importance of transparency and accountability in governance for fostering trust among tourists and stakeholders. Transparent practices, such as open procurement processes and accessible information on tourism regulations, promote fair competition and

investment confidence. Accountability ensures that government actions align with public expectations, enhancing the quality of tourism services and infrastructure. By promoting transparency and accountability, Central Luzon can attract responsible investments and build a positive reputation as a reliable and ethical tourism destination. This, in turn, supports long-term sustainable growth and enhances visitor satisfaction.

The data further shows that both foreign and local tourists agree on the political factors affecting the tourism industry in Central Luzon, Philippines. Specifically, there is strong consensus that government support for sustainable development and safety measures is well observed and significant in the region's tourism industry. However, while the government's efforts to promote tourism initiatives have positively contributed to the appeal of Central Luzon, Philippines as a tourist destination, additional interventions may be needed to further enhance their tourism advocacy.

The findings support Ghalia et al. (2019), stating that tourists avoid regions with poor governance, preferring destinations with better governance, even if less traditionally attractive. Political risks, including poor governance, impede tourism growth, as instability often leads to the suspension of operations by service providers and operators. Central Luzon's continued appeal as a tourist destination can be attributed to positive political support and activities, promoting sustainable tourism.

#### 4.2.2. Economic Factors

The combined grand mean for respondents' agreement on various economic factors affecting tourism in Central Luzon is 3.79 (Agree) which indicates that these factors are observed and slightly affect their tourism experience. The highest combined Average Weighted Mean (AWM) was 3.95 for "Economic growth and prosperity in Central Luzon contribute to the overall quality of the tourism experience," followed by 3.87 for "The affordability of accommodations and services in Central Luzon influences my decision to visit the region." The lowest was 3.62 for "Income inequality in the region creates disparities in access to tourism opportunities and experiences," still interpreted as "Agree," indicating that these factors are observed and slightly affect the tourism experience in Central Luzon.

The findings imply that the quality of the tourism experience in Central Luzon is closely linked to economic development. Economic progress enhances infrastructure, services, and cultural amenities, making the region more attractive to tourists. Affordability is crucial for attracting visitors, and lower prices can make Central Luzon accessible to a wider range of people. Currency exchange rates affect travel costs, but tourism stakeholders can mitigate these effects through strategic pricing and value-added experiences. Tourism promotes local economic

growth by creating job opportunities, particularly in rural areas. Seasonal variations in tourist demand can impact business sustainability, requiring diverse tourism offerings and targeted marketing strategies. Infrastructure deficiencies in remote areas and limited access to banking services may hinder tourism development. Taxation policies influence travel expenses and reducing income disparity can enhance social cohesion and support sustainable tourism growth.

The findings align with Nunkoo et al. (2019), who emphasize that tourism is a vital revenue source, positively impacting the balance of payments and living standards. Susilo (2020) also notes that the economy affects both purchasing power and industry improvement costs. Government support for local economic activities is essential, as tourism directly impacts various economic aspects. Nunkoo et al. (2019) state that tourism expansion boosts foreign exchange, stimulates local production, creates jobs, and provides financial resources for developing capital goods, driving economic growth.

#### 4.2.3. Social Factors

The combined grand mean for respondents' agreement on various social factors affecting tourism in Central Luzon is 3.90 (Agree), indicating that these factors are observed and slightly impact their tourism experience. The highest combined Average Weighted Mean (AWM) was 3.98 for "The cultural diversity and heritage of Central Luzon enrich my tourism experience in the region." The lowest was 3.79 for "Social unrest or conflicts in the region deter me from visiting tourist sites in Central Luzon," still interpreted as "Agree," indicating that these factors are observed and slightly affect the tourism experience.

The findings confirm Susilo's (2020) explanation that social factors encompass demographic and cultural elements of the macro-environment, which affect customer needs and potential market sizes. These factors include aspects such as health awareness, population growth rates, age distribution, career or occupation, and safety concerns. While the visibility of cultural diversity in the region attracts tourists, social unrest or conflicts deter them. The results then highlight the importance of preserving cultural diversity and addressing social unrest to enhance the tourism experience in Central Luzon.

#### 4.2.4. Technological Factors

The combined grand mean for respondents' agreement on various technological factors affecting tourism in Central Luzon is 3.90 (Agree), indicating that these factors are observed and have slightly contributed to the positive tourism experience of tourists visiting Central Luzon.

The highest combined Average Weighted Mean (AWM) was 4.03 for "Data privacy concerns related to online

bookings and digital transactions impact my trust and confidence in tourism services in Central Luzon." The lowest was 3.64 for "Limited access to technology and digital literacy skills among local residents in rural areas affects the inclusivity of tourism development initiatives," but still interpreted as "Agree."

From these findings, it can be inferred that stakeholders prioritize data privacy and security in tourism transactions through robust protection measures, compliance with regulations, and transparent practices, enhancing trust and supporting sustainable tourism growth in Central Luzon. Technological advancements in transportation infrastructure improve accessibility to remote sites, expanding tourism opportunities and promoting economic development. Digital signage and wayfinding systems enhance visitor experiences with clear navigation aids and informative displays. High-speed internet and mobile connectivity provide seamless information access and real-time sharing, supporting tourism competitiveness and engagement.

Mitigating cybersecurity risks through secure payment gateways and encryption technologies promotes trust and protects visitor data. Contactless payment systems offer convenience, reduce transaction times, and improve financial inclusivity. Technological innovations like virtual reality tours and augmented reality applications enrich visitor experiences and promote cultural understanding. Online booking platforms and travel apps streamline travel planning and enhance service delivery.

Digital marketing strategies shape tourist perceptions and destination awareness, leveraging technology for social media campaigns, targeted advertising, and online content. Addressing digital inclusivity and access disparities in rural areas through literacy programs and infrastructure investments empowers local communities and fosters inclusive tourism development. Enhancing digital capabilities supports economic opportunities, preserves cultural heritage, and ensures equitable distribution of tourism benefits across Central Luzon.

The findings concur to the statements of Giotis and Papadionysiou (2022) that technology is a crucial component of the tourism sector, aiding businesses in their daily operations while enhancing the customer experience and increasing the appeal of destinations to potential visitors making latest technological innovations as a vital injection various tourism enterprise such as the utilization of ICT as a promotional tool through various online platforms.

Giotis and Papadionysiou (2022) further emphasized that the significant advancements in Information Communication Technology (ICT) have a positive impact on the tourism industry in various ways.

#### 4.2.5. Legal Factors

The combined grand mean for respondents' agreement

on various legal factors affecting tourism in Central Luzon is 3.87 (Agree), indicating that these factors are observed and have slightly contributed to the positive tourism experience. On the other hand, the highest combined Average Weighted Mean (AWM) was 3.98 for "Inadequate legal protections for cultural heritage sites and artifacts threaten their preservation and conservation in the region" and "Corruption and bribery within the legal system undermine trust and confidence in the rule of law in Central Luzon." The lowest was 3.68 for "Licensing requirements and regulations for tourism businesses in Central Luzon promote quality and safety standards," but still interpreted as "Agree."

These findings imply that stakeholders prioritize addressing corruption to foster trust and accountability in tourism, highlighting the importance of robust legal protections for preserving cultural heritage. Legal frameworks promote responsible land use and sustainable tourism practices, while intellectual property protections encourage tourism innovation and creativity. There are concerns about legal uncertainties impacting tourism development, emphasizing the need for effective enforcement of environmental regulations. Local regulations addressing noise pollution and public behavior enhance visitor experiences. Simplifying permit processes and reducing legal complexities can boost tourism business growth. Addressing legal liabilities through comprehensive insurance and risk management enhances business resilience, while licensing requirements ensure quality assurance and safety in tourism services, fostering trust among tourists.

The findings align with the study by Mir and Mir (2019), which highlighted that a strong legal framework is essential for the effective development of tourism emphasizing that tourism legislation and laws regulating interactions affecting tourism are typically critical for the industry's overall growth. Therefore, the legal environment governing tourism should address issues related to the documentation process for visitors attending various events, such as conferences and conventions, with particular attention to target markets.

#### 4.2.5. Environmental Factors

The combined grand mean for respondents' agreement on various environmental factors affecting tourism in Central Luzon is 3.87 (Agree), indicating these factors are observed and slightly contribute to a positive tourism experience.

Among foreign tourists, the highest rated factor was "Natural disasters and environmental hazards, such as typhoons and earthquakes, pose risks to tourist safety and well-being in Central Luzon" (3.92), while the lowest was

"The degradation of natural habitats and ecosystems diminishes the biodiversity and ecological integrity of Central Luzon" (3.67). While, among local tourists, the highest rated factor was "Water scarcity and resource depletion pose challenges for maintaining tourism operations and amenities in Central Luzon" (4.11), and the lowest was "The impact of tourism activities on wildlife and marine habitats requires careful management and regulation in Central Luzon" (3.76).

The findings suggest that the destruction of biodiversity impacts tourism experiences, making conservation programs crucial for maintaining ecological balance. Conservation initiatives, such as creating protected areas and promoting eco-tourism, enhance destination allure and attract nature enthusiasts. Coastal vulnerabilities and climate change effects on tourism infrastructure are significant concerns, necessitating sustainable practices and community involvement in environmental stewardship. This implies that the majority of respondents observed these environmental factors, slightly contributing to a positive tourism experience in Central Luzon.

Additionally, the findings suggest that water scarcity impacts tourism operations, highlighting the need for conservation measures and sustainable water management. Sustainable practices like waste reduction and energy-efficient technologies promote environmental stewardship and destination attractiveness. Awareness of natural disaster risks underscores the need for disaster preparedness plans and resilient infrastructure. Pollution affects destination aesthetics, emphasizing the importance of waste management systems and eco-conscious behaviors. Habitat degradation impacts biodiversity, making conservation initiatives vital for preserving ecological balance.

Furthermore, conservation efforts attract eco-conscious travelers and enhance destination appeal. Coastal protection measures and climate adaptation strategies are crucial for beach tourism resilience. Responsible tourism practices mitigate impacts on wildlife and marine habitats, balancing tourism activities with habitat conservation. Awareness of climate change impacts on tourism infrastructure highlights the importance of climate resilience strategies. Community engagement in environmental stewardship fosters sustainable tourism development. Overall, these factors contribute to a positive tourism experience in Central Luzon.

The findings are consistent with those of Elmo et al. (2020), who described sustainable tourism as a way of managing resources to meet social, economic, and aesthetic needs while honoring cultural integrity, biodiversity, and essential ecological processes. Additionally, the findings are supported by Saviolidis et al. (2021), who noted that while tourism is often promoted for its positive effects on economies, employment, and job creation, it is also increasingly acknowledged that tourism can have significant



negative environmental impacts. These impacts range from local issues like the depletion of water resources and pollution to global challenges such as land-use changes and greenhouse gas emissions.

#### **4.2.6. Correlation of the profile of the respondents based on the socio-demographic factors and the PESTLE factors**

Across the indicators: (a) Age shows weak to negligible correlations with all PESTLE factors; (b) Sex exhibits weak correlations, except for Technological and Legal factors where it shows slightly stronger correlations; (c) Marital Status displays weak correlations across PESTLE factors; (d) Educational Attainment indicates weak to moderate positive correlations with PESTLE factors; and (e) Monthly Income shows moderate to strong positive correlations with all PESTLE factors, indicating that higher income levels tend to correlate with more positive perceptions across the PESTLE dimensions.

The data indicates that age has little to no significant impact on perceptions across the PESTLE factors. This suggests that individuals of varying ages share similar views regarding the political, economic, social, technological, legal, and environmental aspects of tourism in Central Luzon. Tourism stakeholders should consider that age is not a major determinant of attitudes towards these dimensions, allowing for more generalized strategies across different age groups.

Sex appears to have a minimal impact on most PESTLE factors, with slightly stronger correlations noted in the technological and legal factors. This indicates that men and women may have somewhat different perspectives on technology-related and legal issues in tourism. Such that, women may have more pronounced concerns about data privacy and safety, while men may focus more on legal structures and regulatory compliance. Tailoring technological and legal strategies to address gender-specific concerns can enhance overall satisfaction and trust among tourists.

Marital status indicated weak correlations among other PESTLE factors, suggesting that marital status does not significantly influence perceptions of the tourism industry's political, economic, social, technological, legal, and environmental factors. Tourism policies and initiatives can therefore be designed to appeal broadly, without needing to specifically target different marital status groups. Higher levels of educational attainment are associated with more positive perceptions across most PESTLE factors.

Educated individuals may have greater awareness and understanding of political policies, economic benefits, social initiatives, technological advancements, legal frameworks, and environmental conservation efforts. Enhancing educational content and communication

strategies about tourism policies and practices can leverage this positive correlation to improve overall perceptions.

Higher income levels are strongly associated with more positive perceptions across all PESTLE dimensions. Wealthier individuals may have greater access to high-quality tourism services, better technological amenities, and more favorable interactions with legal and political structures. This suggests that economic prosperity enhances the overall tourism experience. Strategies to broaden access to high-quality services and experiences can help bridge the perception gap between different income levels, fostering a more equitable and satisfying tourism environment for all.

The demographic analysis reveals varying degrees of correlation between personal characteristics and perceptions of the PESTLE factors in the tourism industry. Understanding these correlations helps tailor tourism strategies to different demographic groups, enhancing overall satisfaction and addressing specific needs and concerns. By focusing on inclusivity, awareness, and equitable access, Central Luzon can improve its appeal and effectiveness as a tourism destination. The study's findings align with the observations made by Robinson and Schänzel (2019), which highlight that a crucial aspect of a thriving tourism industry is its ability to recognize and adapt to changes across various key factors and their interactions.

They emphasize that significant external drivers of global change—such as economic, political, environmental, technological, social, and demographic factors can influence tourism. The analysis of the demographic trends' sheds light on important change agents affecting both supply and demand in tourism. The future growth of the industry will depend on its understanding of social and demographic trends that shape traveler behavior.

Additionally, the findings support Uslu et al. (2020), who, citing various studies, assert that tourism is significantly impacted by multiple demographic variables. The impact of tourism on the local community and perceptions of its economic, socio-cultural, and environmental effects varies according to these socio-demographic characteristics, including age, gender, education, occupation, marital status, vacation habits, income, and birthplace.

#### **4.2.7. Correlation between each of the PESTLE Factors**

The highest correlations are between Social and Technological dimensions (0.85910), Social and Environmental dimensions (0.83797), and Legal and Environmental dimensions (0.84046). Moderate to strong correlations exist between other pairs of dimensions, suggesting interdependencies among political, economic, social, technological, legal, and environmental aspects of the tourism industry.

The strong correlation between the social and

technological dimensions suggests that technological innovations, such as virtual reality tours, interactive exhibits, and social media platforms, play a crucial role in enriching social interactions and cultural experiences for tourists. High-speed internet and mobile connectivity facilitate better communication and engagement between tourists and local communities, fostering social bonds and cultural exchange.

Moreover, social media and online reviews significantly shape tourists' perceptions and decisions, highlighting the importance of a robust digital presence for tourism businesses. Additionally, technological tools enhance inclusivity by providing accessible information and services to diverse tourist groups, including those with disabilities, thereby improving overall social equity in tourism.

The strong correlation between social and environmental dimensions suggests that social factors are closely linked to environmental sustainability in tourism. This correlation underscores the importance of community-based conservation efforts, where social initiatives involving local communities in conservation practices lead to more effective and sustainable environmental management, such as protected areas and eco-tourism programs.

Environmental conservation efforts often go together with preserving cultural heritage and traditions, which are integral to the social fabric of Central Luzon. Public awareness campaigns about environmental issues drive responsible tourism behavior, promoting waste reduction, pollution control, and biodiversity conservation. Furthermore, the aesthetic and ecological integrity of natural habitats and ecosystems directly impact the social experience of tourists, emphasizing the need for sustainable environmental management to enhance social satisfaction.

The strong correlation between legal and environmental dimensions highlights the importance of legal frameworks in ensuring environmental sustainability in tourism. Effective enforcement of environmental regulations and conservation laws ensures the protection of natural resources and habitats, which is crucial for sustainable tourism development. Legal protections for cultural heritage sites, natural landscapes, and biodiversity are essential for preserving the environmental integrity of Central Luzon.

Legal mandates for responsible tourism practices, such as waste management, pollution control, and sustainable land use, help mitigate environmental degradation and promote ecological sustainability. Additionally, addressing legal disputes related to land ownership and environmental conservation ensures that tourism development projects are carried out responsibly, balancing economic growth with environmental preservation.

The highest correlations derived from the social factors against technological and environmental factors, as well as the derived interdependencies amongst political, economic, technological, legal, social and environmental factors is

evident as described by Uslu et al. (2020) that while tourism development primarily impacts social and cultural aspects, it was seen to trigger economic, cultural and environmental changes.

The findings of this study also strengthen the statement of Saviolidis et al. (2021) stating that while tourism is often promoted for its positive impacts on economies, employment, and job creation, it has been increasingly recognized to have numerous negative effects on the environment such as the depletion of local water resources and pollution, to global issues like land-use change and greenhouse gas emissions.

## 5. Conclusions

The study determined that tourists visiting Central Luzon exhibit a diverse demographic profile, with the dominant age group being 20-24 years old. More males visit the region than females, and most tourists are single, holding college degrees or higher. Foreign tourists tend to have higher monthly incomes than local tourists, highlighting Central Luzon's broad appeal to both local and international visitors from various socioeconomic backgrounds.

Regarding the PESTLE factors (political, economic, social, technological, legal, and environmental) affecting the tourism industry in Central Luzon, government policies supporting sustainable development contribute more to increasing tourism demand than efforts to promote the industry. Economic growth and prosperity in the region enhance the overall quality of the tourism experience. Cultural diversity and heritage enrich tourists' experiences, while data privacy concerns related to online bookings impact trust in tourism services. Legal factors affecting the industry include inadequate protections for cultural heritage sites and corruption within the legal system. Environmental factors, such as resource scarcity and natural disasters, also pose threats to the tourism industry.

Significant relationships exist between tourists' profiles and issues in all PESTLE dimensions, indicating that factors like age, gender, civil status, education, occupation, and income influence perceptions and experiences. The PESTLE dimensions also impact the tourism experience differently, highlighting the need to address each dimension's unique challenges and opportunities.

Thus, based on the findings of this study, enhancing transparency, promoting economic inclusivity, fostering cultural events, improving technological infrastructure, strengthening legal enforcement, and implementing robust environmental conservation initiatives is highly recommended. These actions aim to address the identified challenges and leverage opportunities for sustainable tourism development in Central Luzon.

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