Lebanon Mountain Trail

Economic Impact & Valuation Study









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List of Acronyms

BTM	Benefit transfer methods
CBA	Cost-benefit analysis
CV	Contingent valuation
HP	Hedonic pricing
IO	Input-output
LMT	Lebanon Mountain Trail
LMTA	Lebanon Mountain Trail Association
MPM	Market price method
TCM	Travel cost method
TE	Total expenditure
TEV	Total economic value
TrC	Transportation cost
WTP	Willingness to pay

Introduction

The Lebanon Mountain Trail (LMT) stands as a groundbreaking initiative in Lebanon, embodying the principles of sustainable tourism and environmental conservation across its extensive 470-kilometer route, in addition to 150 km of side and network trails. Stretching from Aandaqet in the north to Marjaayoun in the south, the LMT meanders through diverse and picturesque landscapes, connecting over 75 towns and villages. This remarkable pathway not only highlights Lebanon's stunning natural beauty but also serves as a living archive of its rich cultural heritage. The LMT is meticulously designed to promote responsible travel and community-based tourism, attracting both tourists and outdoor enthusiasts. At the same time, it plays a crucial role in stimulating local economies, fostering community well-being, and enhancing the overall quality of life in the regions it traverses.

Increasingly, trails like the LMT are being recognized for their significant socio-economic benefits. Beyond the immediate revenue generated through tourism, such trails catalyze job creation in sectors like hospitality and tourism. They also offer recreational opportunities that strengthen community bonds and promote environmental stewardship. Understanding the LMT's far-reaching impact is essential for guiding future development and ensuring the trail's sustainability. Consequently, this study seeks to provide a comprehensive assessment of the LMT's socio-economic impact and value.

The study's objectives are multifaceted; first, it aims to analyze the demographic profiles and usage patterns of LMT visitors, shedding light on who uses the trail and how they engage with it. Second, it seeks to evaluate the economic contributions of the trail to local communities, both directly and indirectly. This includes an examination of how the trail supports local businesses, creates jobs, and influences economic activity. Finally, the study will calculate key economic indicators, such as the trail's total economic value, using methods like the Travel Cost Method and Cost-Benefit Analysis to assess its economic viability. These efforts are geared toward generating actionable insights that can inform trail management strategies and policy decisions.

The study employs a mixed-methods approach, integrating quantitative data from user surveys and economic impact analyses with qualitative insights from key informant interviews. This comprehensive methodological framework ensures a thorough exploration of the LMT's socio-economic dynamics, providing a nuanced understanding of its contributions to Lebanon's tourism landscape. The following sections outline a brief literature on the economic impacts of hiking trails, the methodology used, the collected data and findings of the analysis. By offering a detailed evaluation of the LMT's socio-economic footprint, this study aims to support ongoing efforts in trail management, conservation, and the sustainable development of tourism in Lebanon.

I. Literature Review

I.1. Trails Definition and Classification

Trails, with their historical origins traced back to ancient paths traversed by pilgrims and shepherds, have significantly shaped human movement patterns across various modes of transportation (Lukoseviciute et al., 2022a). According to the International Union for Conservation of Nature (IUCN), trails are carefully managed pathways that enhance public access to natural and cultural heritage sites. They are designed to provide opportunities for outdoor recreation, education, and environmental appreciation (IUCN, 2021). These pathways not only serve as physical routes for activities such as hiking, biking, and horseback riding but also play a pivotal role in promoting sustainable tourism practices by minimizing ecological impact and fostering conservation efforts. The classification of trails, as illustrated in Table 1, reflects their diverse intended uses, environmental considerations, and the range of experiences they offer to users. This systematic categorization facilitates appropriate trail design and management, supporting sustainable tourism development and conservation initiatives worldwide.

Table 1 Classification of Trails Based on Location and Intended Use

Category	Description and Definition	Tourism Activity
Urban Trails	Trails located within or near urban areas, providing easy access to recreational activities for city dwellers **(Abraham & Ramaswamy, 2013)**	Popular for walking, jogging, and biking, attracting both residents and tourists.
Rural Trails	Trails found in rural settings, often surrounded by natural landscapes **(Bedford County Commissioners, 2014)**	Attract tourists seeking nature experiences and rural charm.
Heritage Trails	Trails that highlight historical, cultural, or archaeological sites **(Bowker et al., 2004)**	Attract tourists interested in history, culture, and educational tours.
Nature Trails	Trails that run through natural landscapes, often within protected areas **(Du Preez & Lee, 2016)**	Popular among eco-tourists, bird watchers, and nature enthusiasts.
Multi-Use Trails	Trails designed for various activities such as walking, biking, and horseback riding **(Scipione, 2014)**	Frequented by a diverse group of users, enhancing their recreational appeal.
Water Trails	Routes on navigable waterways used for activities like kayaking, canoeing, and boating **(Pollock et al., 2012)**	Attract tourists interested in water-based recreation and scenic waterway views.
Mountain Trails	Trails located in mountainous regions, offering challenging terrains and scenic vistas **(Heintzman, 2020)**	Popular among adventure tourists, hikers, and mountaineers.
Forest Trails	Trails within forested areas, providing shaded paths and opportunities for wildlife observation **(Cordell et al., 2021)**	Attract nature lovers, bird watchers, and educational groups.

I.2. Services and Benefits Provided by Trails

Responding to heightened environmental concerns and an increasing demand for access to trail networks, trail development has emerged as a crucial tool in ecotourism management. The global rise of long-distance trails, such as the National Recreation Trails Program in the United States, Trans Canada Trail, and The European Greenways Association initiative (Bennett et al., 2003), highlights a noticeable shift in societal trends. Today, recreational trail use is increasingly recognized as a key element in global economic development, representing a fresh approach to tourism, particularly evident in nature and heritage-based recreation. This paradigm shift emphasizes developing sustainable and responsible tourism destinations and improving overall tourism experiences through engagement and connection with nature (Bedford County Commissioners & Fulton County Commissioners, 2014). Furthermore, trails offer a range of leisure pursuits including hiking, biking, and observing wildlife, enriching visitor experiences and encouraging rural tourism (McConnell et al., 2015). In urban settings, trails provide convenient access for pedestrians, joggers, and cyclists, appealing to both locals and visitors seeking recreational options (Abraham & Ramaswamy, 2013).

Trails significantly contribute to economic and social development through various mechanisms. The surge in national trail development is driven by perceived economic advantages, including tourism-based job creation, rural diversification, environmental sustainability, and urban regeneration (Bennett et al., 2003; Bowker et al., 2004; Otto et al., 2007; McConnell et al., 2015; do Val Simardi Beraldo Souza et al., 2019; Lukoseviciute et al., 2022b). Additionally, they promote recreational activities recognized for their positive impacts on human health and societal well-being (Brownson et al., 2000; Otto et al., 2007; Lake, 2014; Kim & Miller, 2019), and facilitate rural tourism through activities such as hunting, fishing, and wildlife watching, which contribute to business expansion and increases in land value (McConnell et al., 2015). Moreover, trail-related tourism has a substantial economic impact, evidenced by expenditures on retail, lodging, and goods, as highlighted in the 2010 Outdoor Foundation's Outdoor Recreation Participation Report (Bennett et al., 2003; Bedford County Commissioners & Fulton County Commissioners, 2014).

Trails attract a diverse array of visitors who contribute to local economies through expenditures on accommodations, guiding services, trip lengths, group sizes, travel distances, and visitor income levels (Bowker et al., 2004; Pollock et al., 2012; Du Preez & Lee, 2016). They also promote sustainable tourism by connecting visitors with natural and cultural heritage sites, fostering environmental appreciation, and enhancing overall well-being (Brownson et al., 2000; Otto et al., 2007; Lake, 2014; Kim & Miller, 2019). Economic analyses derived from trail-related tourism data are instrumental in evaluating benefits, guiding strategic decisions, and shaping policies that support long-term sustainability and economic growth in tourism destinations (Lawson, 2022).

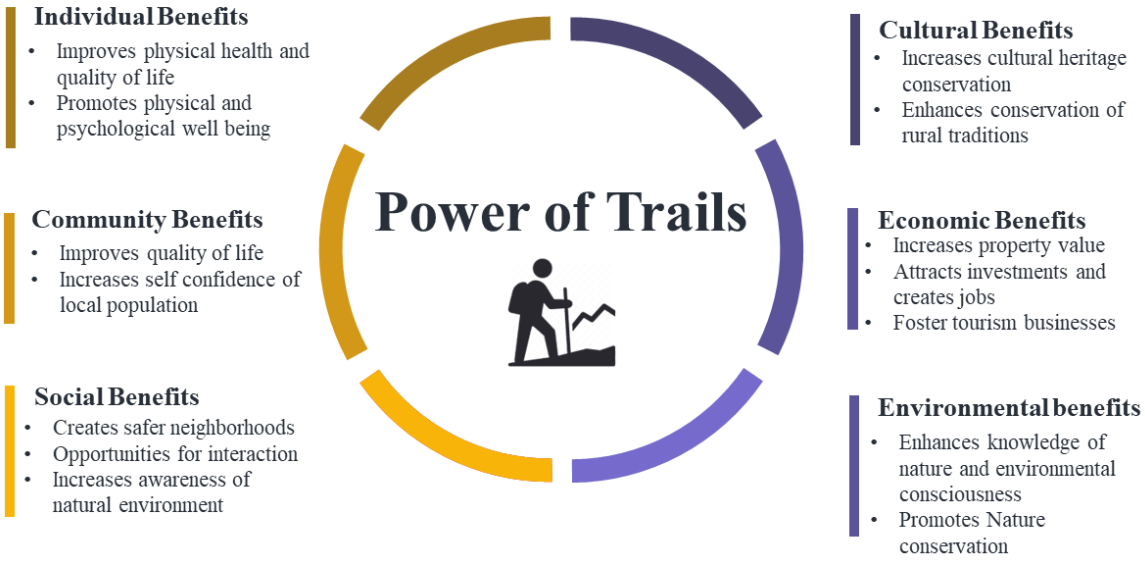


Figure 1 Benefits of Hiking Trails for the Local Communities at the destination

I.3. Economic Valuation of Trails

Despite the acknowledged importance of tourism in revenue generation, a notable gap exists in standardized methodologies for calculating and reporting economic impacts. Recreational areas attract diverse user profiles with varying preferences in accommodations, guiding services, trip lengths, group sizes, travel distances, and income levels, leading to significant variations in visitor expenditures (Bowker et al., 2004; Pollock et al., 2012; Du Preez & Lee, 2016). This spending diversity underscores the critical role of visitor expenditures in stimulating job creation and entrepreneurial activities within and beyond trail networks (do Val Simardi Beraldo Souza et al., 2019).

Economic data is crucial for understanding the relationship between tourism, resource protection, and economic benefits. This data guides decision on new trails, businesses, and policies. Economic impact analysis evaluates the potential of trail development to attract new visitors, inject new money into local economies, and foster overall economic growth (Lawson, 2022). Thus, economic valuation is a vital link between trail development and its broader economic implications.

The concept of total economic value is a well-established framework for identifying the various values associated with protected areas. The total economic value of trails (Figure 2) comprises use and non-use values. Use values are further divided into direct use values, indirect use values, and option values. Non-use values include bequest values and existence values (Moran, 2005).

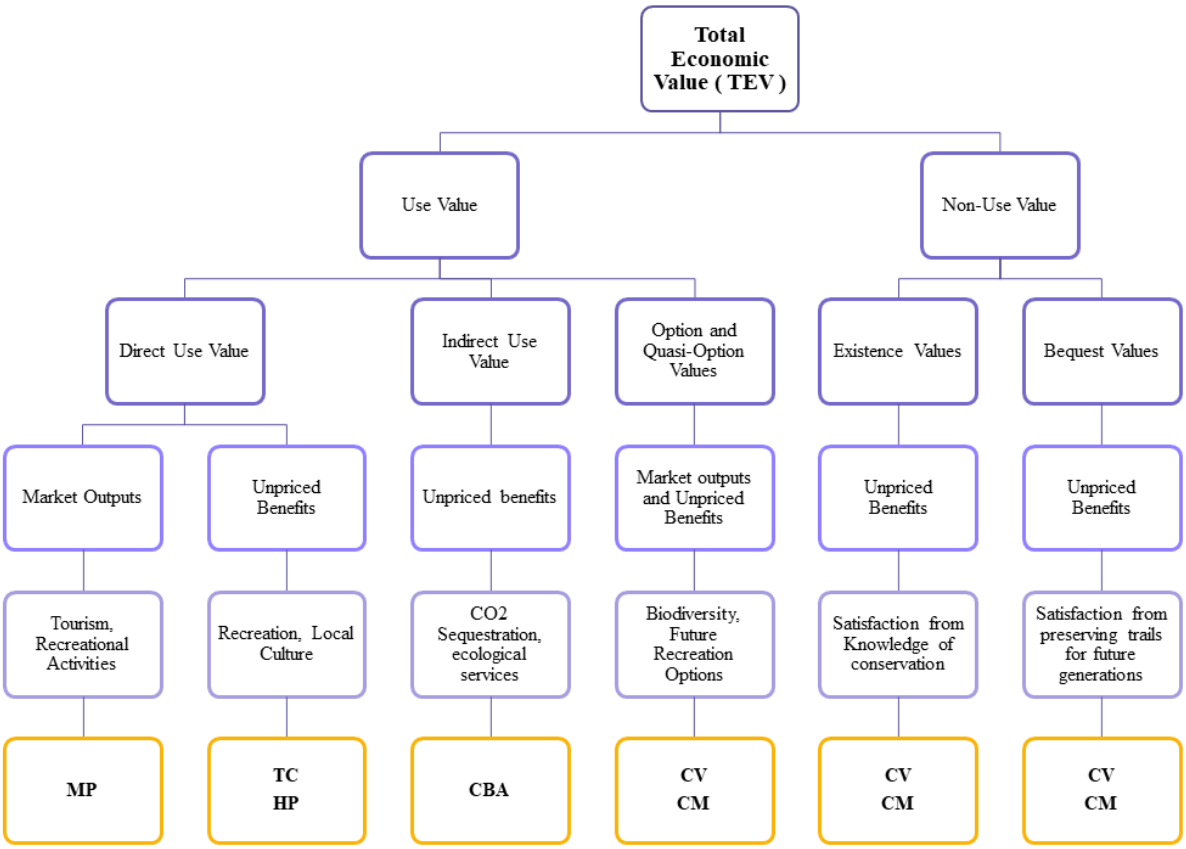


Figure 2 components of total economic value and associated valuation method

Several methods have been developed to elicit both market and non-market values for environmental goods and services. Some of the more common and widely used methods include:

- Travel Cost Method **(TCM)** Evaluates the economic value of recreational sites by analyzing visitors' travel expenses.
- Hedonic Pricing **(HP)** Examines how trail proximity influences property values, reflecting the added value of recreational access.
- Market Price Method **(MPM)** Considers direct spending on goods and services associated with trail use, such as equipment and entrance fees.
- Cost-based Approaches **(CA)** Focus on the costs of providing and maintaining trails relative to the benefits derived from their use.
- Contingent Valuation **(CV)** Involves surveys to determine the willingness to pay for trail access.
- Choice Modeling **(CM)** Assesses preferences for different trail attributes.
- Benefits Transfer Method **(BTM)** Applies valuation estimates from similar contexts to new trail projects, providing a cost-effective way to estimate economic benefits.

I.4. Economic Impact of Trails

Monitoring the economic performance of nature attractions such as hiking trails is essential for understanding the impact of investments in nature-based recreation destinations, and for providing crucial insights to prioritize sectors that require more focus and investment (Lukoseviciute et al., 2022). On the other hand, economic impact analysis is a systematic approach that evaluates the net changes in a regional economy resulting from the influx of financial resources by visitors from outside the local community. It assesses the commercial activities associated with recreational pursuits to determine their effects on local economies (Pollock et al., 2012; do Val Simardi Beraldo Souza et al., 2019). This analysis quantifies the impact of visitor spending on the regional economy, estimating shifts in economic activity, such as changes in expenditures, income, and employment. This framework is vital for achieving consensus among all stakeholders, and supports sustainable development by ensuring equitable distribution of economic benefits while preserving and enhancing the natural environment (Bowker et al., 2007; Pollock et al., 2012; do Val Simardi Beraldo Souza et al., 2019).

Economic impact can be described as the effects of a program or project on the level of economic activity in a given area and it generally concentrate on three types of effects:

1. ***Direct*** effects refer to those that result from direct consumer spending. For a multi-use trail, direct effects apply to purchases made by trail users, such as food, gas, gear, bikes, and services. This also includes tourism expenditures such as lodging and recreational activities supporting worker's salaries.
2. ***Indirect*** effects are the consequences of a change in the economy. In the trail-related industry, these effects include buying supplies and materials from manufacturers. This means using some of the money earned to purchase goods and services from local businesses. Indirect impacts also happen when businesses buy from each other (Çela et al., 2009; Scipione, 2014; McDonald, 2015; McConnel et al., 2015; Maria Raya et al., 2018; State, 2019; Camoin Associates, 2021; Lukoseviciute et al., 2022a; Lukoseviciute et al., 2022b).
3. The term ***induced*** effects implies the increase or decrease in purchasing power caused by changes in household income. Producers may purchase production supplies and materials as a result of household purchases in the trail area (Çela et al., 2009; Scipione, 2014; McDonald, 2015; McConnel et al., 2015; Maria Raya et al., 2018; State, 2019; Camoin Associates, 2021; Lukoseviciute et al., 2022a; Lukoseviciute et al., 2022b). A useful comparison is to think of indirect and induced impacts as the ripple effect of direct impacts.

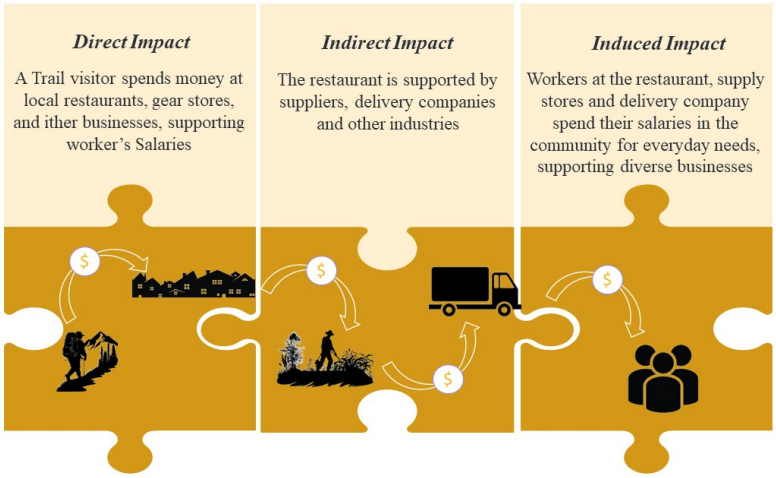


Figure 3 A representation of Direct, Indirect and Induced Impacts

Data derived from economic impact analyses provide planners with essential insights into the economic changes resulting from trail use, informing policies and management strategies for tourism destination development. The magnitude of economic impact varies depending on specific determinants such as visitor numbers, spending levels, the mix of local and non-local users, and the extent of economic leakage within the local economy (Çela et al., 2009; Pollock et al., 2012). These impacts manifest through direct, indirect, and induced effects, stimulated by tourist expenditures that influence changes in income, employment, and overall economic output (Maria Raya et al., 2018; State, 2019; Lukoseviciute et al., 2022).

The following table summarizes various definitions of direct, indirect, and induced effects from various articles, providing a solid foundation for this study **(Table 2).**

Table 2 Direct, Indirect, and Induced Effects in Economic Impact Analyses

Reference	Direct effects	Indirect effects	Induced effects
State (2019)	The output, jobs, and employee compensation supported by the increase in spending directly attributable to trail-based recreation.	The economic effects supported by trail-based recreation spending in the local economy due increases in supply chain purchases.	The changes in regional household spending patterns caused by changes in household income. These are typically referred to as consumption effects.
Lukoseviciute et al., (2022a)	The business owner's revenue from tourist expenditures on products and services.	A general output of the area rise, such as demand for sufficient resources and employment.	The increased personal incomes due to the tourists' spending that will be re-spent on final goods and services.
Maria Raya et al., (2018)	The increase in sales revenues of firms or tourist spending.	Firms purchasing inputs from other firms in the region, which in turn purchase inputs from other firms, and so on. They are generally distributed among many economic sectors as opposed to only those most directly associated with tourism.	Generated when the receipts (increased incomes, such as employees' wages) of direct and indirect spending are spent.
Baronak et al., (2022).	The first round of spending, or where the initial purchase occurs. If a trail user makes a purchase at a nearby restaurant, the total value of that purchase is the direct impact.	Portions of direct revenues used to purchase goods and services from businesses within the region.	Income earned by workers from direct and supplier sales transactions that is then spent within the region's economy.
Camoin Associates (2021)	The most immediate impacts, which include spending by trail users at local businesses.	Occur at businesses within the region that supply goods and services to the businesses that users are visiting.	Ripple effect that occurs when workers at both the directly and indirectly impacted businesses spend a portion of their wages at businesses within the state for things such as retail goods and services.
Scipione (2014)	Direct effects represent the jobs, income, taxes, and sales in the businesses that receive money directly from trail users such as motels, restaurants, attractions, retail stores.	Represent the jobs, income, taxes, and sales resulting from tourism businesses buying goods and services from other industries in the region.	Households re-spending income earned from trail user spending.
Çela et al., (2009)	Initial visitor spending.	Total value of supplies and services supplied to tourism-related businesses.	Occurs when tourism-related businesses and businesses in the indirect industries spend their earnings in goods and services in the area.
McDonald (2015)	The direct impacts resulting from consumer spending, such as purchases on greenways, such as food, gasoline, gear, or services.	The effects of a change in the Economy. For example, when consumers purchase more bicycles, local suppliers may need to buy more parts.	Includes purchases of production supplies and materials by producers, resulting from purchases by households in the study area.
McConnell et al. (2015)	New money that is being put into the economy	Purchases of goods and services By businesses patronized by visitors and wages spent by employees of those businesses and further circulation of those dollars in the local economy	
Lukoseviciute et al. (2022b)	The direct effect is the business owner's revenue from tourist expenditures on products and services	The secondary effect refers to a general output of the area rise, such as demand for sufficient resources and employment, and increased personal incomes due to the tourists' spending that will be re-spent on final goods and services	

Originating from John Maynard Keynes' work, the multiplier concept is applied in economic studies, particularly in tourism, to analyze the influx of non-local funds into a region (Lukoseviciute et al., 2022a). The income multiplier, focusing on income maximization, has been widely used in tourism research since the 1990s (Archer & Fletcher, 1996; Hsu, 2019; Tafel & Szolnoki, 2020), underscoring its importance in guiding policy decisions.

Multipliers are essential tools for assessing the comprehensive impact of projects by considering economic indicators like gross output, aggregate personal income, value added, and employment in the studied region. Two commonly used multipliers include the Type 1 Multiplier, which measures industrial response through direct and indirect effects, and the Type 2 Multiplier, which incorporates consumption-induced responses by adding induced effects to the numerator (Sacks et al., 2002; Lukoseviciute et al., 2022b). In economies with diverse industry profiles, employing formal economic models becomes crucial for accurate analysis, as a single multiplier may not suffice (Morgan, 2010).

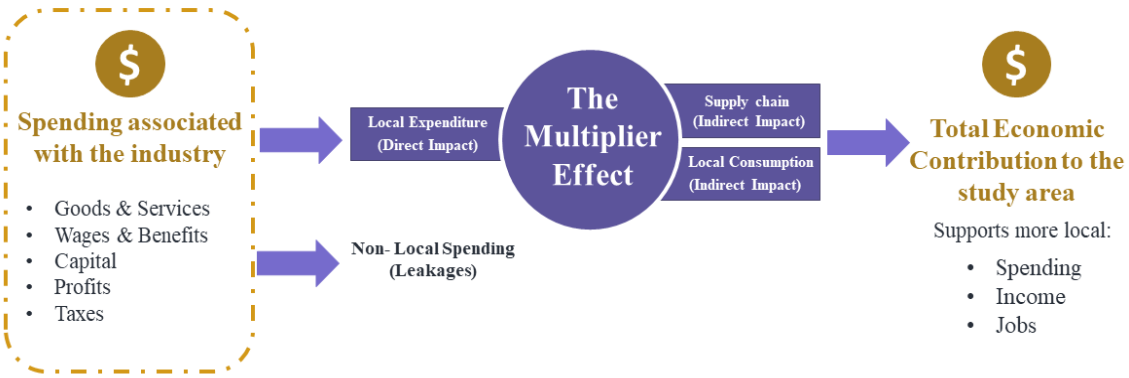


Figure 4 The economic multiplier effect

I.5. Economic Impact Assessment Models & Valuation Methods

Various methodologies exist for scrutinizing the economic impact and computing the multiplier effect, incorporating two fundamental frameworks: input–output (I–O) analysis, pioneered by Leontief (1936), and the Keynesian multiplier, leading to the development of the Ad hoc multiplier (Archer & Owen, 1971). Within the domain of tourism, the Ad hoc multiplier and I–O analysis emerge as the prevailing approaches for examining multiplier effects.

These nuanced methods contribute to a comprehensive understanding of the intricate economic dynamics, allowing for meticulous evaluations in diverse sectors (Lukoseviciute et al., 2022a; Lukoseviciute et al., 2022b).

I.5.1 Economic Impact Assessment Models

a) Keynesian-Type Model

The Keynesian multiplier technique, pioneered by Lord Keynes, provides a rapid assessment of changes in tourism expenditure by comparing exogenous spending to economic leakages (Archer, 1977; Dwyer et al., 2010). This model is particularly advantageous for its cost-effective application in local and regional studies within the tourism sector, as demonstrated by Mayer et al. (2010) in their analysis of recreational trail users in Germany's national parks (Lukoseviciute et al., 2022a).

b) Ad hoc Multiplier Model

Derived from the Keynesian approach and refined by Hsu (2019), the Ad hoc multiplier model estimates direct and indirect economic impacts of tourism expenditure changes. It utilizes simplified formulas and surveys of trail visitors, local businesses, and residents to calculate income multipliers. Despite its focus solely on tourism and limitations in inter-sectoral analysis, this model proves valuable where statistical data is scarce, particularly for assessing nature-based tourism impacts in rural areas near recreational trails (Archer & Owen, 1971; Lukoseviciute et al., 2022a; Lukoseviciute et al., 2022b).

c) Input/Output Model

The Input/Output (I-O) model is a prominent tool for estimating multiplier effects and analyzing regional economic changes resulting from various projects or programs (Bowker et al., 2007; Çela et al., 2009; Pollock et al., 2012; Bedford County Commissioners & Fulton County Commissioners, 2014; O'brien et al., 2015; do Val Simardi Beraldo Souza et al., 2019; Baronak et al., 2022; Lukoseviciute et al., 2022). It provides transparency by calculating direct, indirect, and induced impacts, illustrating monetary circulation within local economies.

However, challenges lie in assessing dynamic impacts and changes in industry structure due to data limitations at smaller scales. Combining I-O models with economic simulation methods enhances their analytical scope and reliability for comprehensive economic impact assessments. Software platforms like IMPLAN, REMI, and MGM2 integrate I-O models using US Department of Commerce data (McDonald, 2015; Brown, 2019). IMPLAN excels in regional impact assessments but faces data challenges in smaller-scale applications (Bowker et al., 2004; O'brien et al., 2015). MGM2 simplifies local economic impact assessments but is constrained to the US context, while REMI offers a comprehensive approach by integrating various economic modeling techniques (Scipione, 2014; do Val Simardi Beraldo Souza et al., 2019; Lukoseviciute et al., 2022b). This integration enhances the applicability of I-O models for nuanced economic impact analyses across different spatial and sectoral dimensions.

Table 3 compares the following three main models of economic impact assessment approaches using six criteria based on Hsu (2019) recommendations: data requirements, spatial scale, operational costs, time required for analysis, the magnitude of multiplier and economic sectors covered (Hsu, 2019; Lukoseviciute et al., 2022a).

Table 3 The comparison of five main different theoretical economic impact assessment models.

Criteria	I-O Model	Keynesian- type Model	Ad hoc Model
Data Requirements	I-O table	Employment, income or output data, tourists' expenditure, data on taxes, direct and indirect multipliers for all tourism economic sectors	Employment, income or output data, tourists' expenditure, residents' income and local expenditure
Spatial scale	Up to spatial scale of available I-O table	No Limit	No Limit
Operational cost	High	Low	Medium
Time required for analysis	It is not time-consuming unless an I-O table or adequate data is not available.	It is time-consuming to collect all required data	It is time-consuming to collect all required data
The magnitude of multiplier	I-O Multiplier >	Keynesian Multiplier >	Ad hoc Multiplier
Economic sectors covered	All economic sectors	Tourism Sectors	Tourism Sectors

In economic impact analysis, the multiplier is used to assess both direct and secondary effects between economic sectors, quantifying their cumulative impact (do Val Simardi Beraldo Souza et al., 2019). *The secondary effect*, encompassing indirect and induced impacts, significantly shapes the overall economic environment (Çela et al., 2009). This *cumulative impact*, known as the total economic value of visitor expenditure, combines direct spending by nonlocal visitors with secondary spending, thereby stimulating local economic activity within recreation and tourism sectors.

Secondary economic effects, such as changes in sales, income, and employment among local suppliers, are measured through the multiplier effect, providing insights into the interaction between direct spending and broader economic outcomes (Çela et al., 2009; McDonald, 2015; Lukoseviciute et al., 2022a).

To assess these impacts, economists employ various methodologies. Total economic valuation methods (Figure 5) are categorized into two types: revealed preferences and stated preference techniques (McDonald, 2015; Lukoseviciute et al., 2022a).

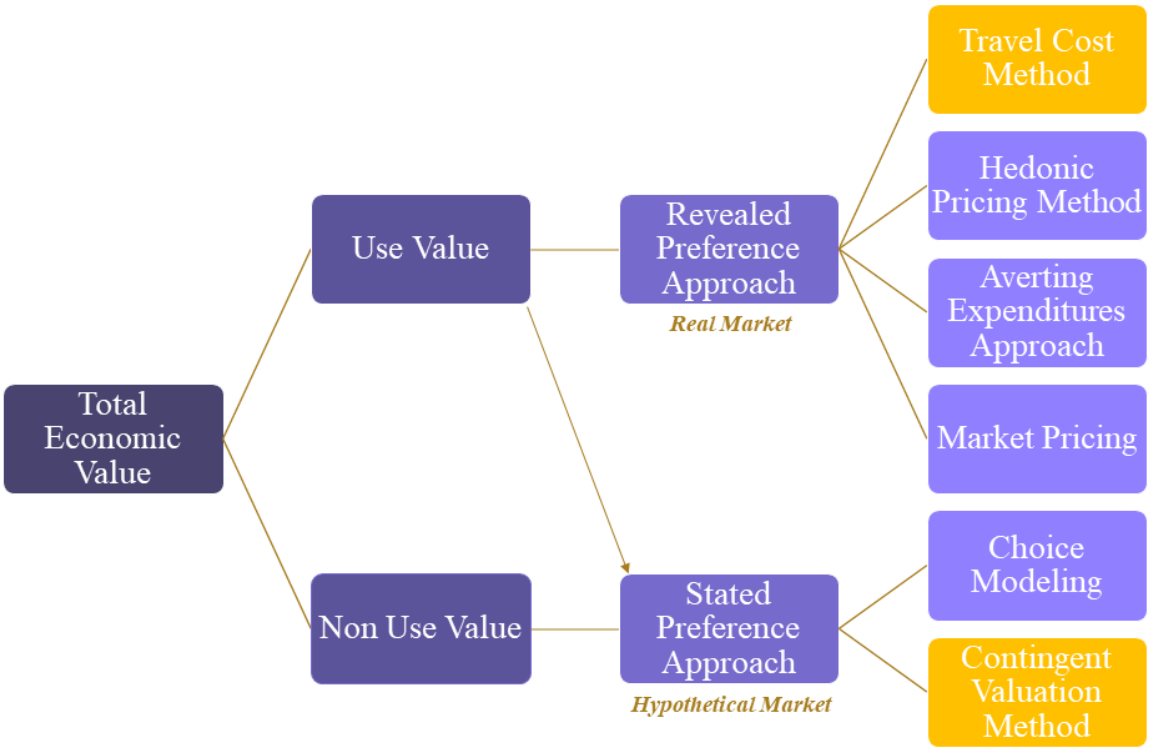


Figure 5 The Total Economic Value

I.5.2 Economic Valuation Methods

Revealed preferences methods link environmental changes to observed market prices, while stated preference techniques derive consumer preferences directly from questionnaires. These methods are instrumental in capturing both the direct economic effects of visitor spending and the broader economic benefits generated through secondary effects.

a) Revealed Preferences

Travel Cost Valuation: The Travel Cost Valuation method is essential for assessing the economic impact of recreational activities, focusing on determining the expenditure per trip. It plays a pivotal role in understanding visitor financial implications, encompassing factors like travel distances, accommodation proximity, and associated costs within the study area. However, TC methods are known for their reliance on comprehensive data collection, assumptions about consumer behavior, and sensitivity to statistical methodologies employed (IUCN, 2007; Bowker et al., 2004; Du Preez & Lee, 2016; do Val Simardi Beraldo Souza et al., 2019; Lukoseviciute et al., 2022a).

Hedonic pricing: The Hedonic Pricing (HP) Valuation method plays a pivotal role in assessing the economic value of environmental goods by utilizing existing markets such as housing or labor markets. It aims to isolate the value attributed to environmental benefits, which is reflected in property values or wages. This method is particularly useful in establishing aesthetic values of protected areas, where residential properties adjoining these areas often hold higher values due to perceived benefits. Conversely, HP can also quantify environmental damages by evaluating their negative effects on property values or wages. However, hedonic pricing faces challenges in markets that are distorted or lack widespread information about environmental products, making data scarce (IUCN, 2007).

Market Price Method: The Direct Market Valuation Approach plays a crucial role in assessing the value of environmental goods and services traded in markets. By applying standard economic techniques of measuring supply and demand, it determines changes in producer and consumer surplus using market price methods. This approach utilizes actual market prices where they exist for environmental goods and services, providing a direct measure of their economic value (Mburu et al., 1993).

Cost-Based Approaches: The Estimation of Ecosystem Service Costs approach evaluates the financial implications of recreating ecosystem service benefits through artificial means. One technique is the Avoided Cost Method, which calculates the costs that would have been incurred without ecosystem services. This method helps highlight the economic value of natural services by comparing them to the hypothetical expenses of artificial alternatives (Pascual & Muradian, 2010).

b) Stated Preferences

Contingent Valuation: The Contingent Valuation Method directly evaluates the value of environmental goods or services by surveying individuals or conducting experiments to gauge their willingness to pay for the good or willingness to accept compensation for its loss. This method is particularly advantageous in estimating values for goods that lack markets or viable substitutes. Therefore, CVM is extensively applied to assess existence values, option values, indirect use values, and non-use values (Baral, N., Stern, M., Bhattarai, R., 2007).

Choice Modeling: Choice Modeling is a stated preference technique similar to contingent valuation but differs by asking individuals which situation they prefer rather than how much they are willing to pay. Survey respondents choose between alternatives with shared attributes at different levels, with the cost of the service as a key attribute. This method captures preferences by presenting options with varying combinations of service attributes, including price (Adjaye, 2000).

Benefits Transfer Approach: The Benefits Transfer approach uses values from existing studies to estimate economic values for ecosystem services and habitats when primary studies are too costly or time-consuming. This widely accepted method transfers findings from other studies to the specific context being evaluated. The accuracy of this approach depends on how closely the original study's context matches the new setting (Hölzinger & Dench, 2011; Krieger, 2001).

I.5.3 Cost-benefit analysis

In addition to total economic valuation methods, which include stated and revealed preferences, other approaches such as Cost-Benefit Analysis (CBA) and Social Impact Assessment (SIA) can also be employed. CBA systematically evaluates the economic pros and cons of a project, ensuring that the benefits outweigh the costs.

SIA, on the other hand, assesses the social consequences of projects, capturing impacts on community well-being and social dynamics. These methods complement economic valuation by providing a broader perspective on the overall impacts of environmental goods and services. Cost-Benefit Analysis (CBA) is the systematic process of comparing the anticipated costs and benefits (or opportunities) linked to a project decision, aiming to evaluate its viability and overall business sense. In essence, it entails a comprehensive assessment, wherein the projected costs of a project or decision are tallied and subtracted from the total anticipated benefits (Bowker et al., 2007; Otto et al., 2007; McDonald, 2015). This calculation often results in a numerical representation, such as a ratio, providing a clear indication of the project's economic feasibility. In the context of recreational trails, Cost-Benefit Analysis (CBA) examines the potential of a trail to be economically beneficial for the LMT, while simultaneously contributing to the well-being of the environment and users' health. This step involves a thorough examination of both costs and benefits associated with trail construction, establishing it as an independent and legitimate tool for evaluating potential trail investments. Utilizing a template provided by (Hans et al., 2005), trail advocates can systematically present a compelling case to policymakers at all levels of government for trail construction. Additionally, surveys can be employed to gather comparable data on costs and benefits specific to a trail project.

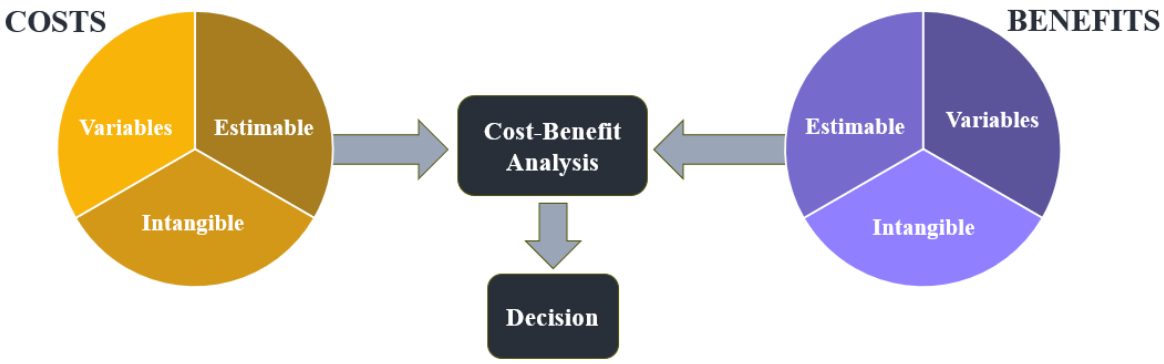


Figure 6 The Cost Benefit Analysis

In trail building, the costs typically include Acquisition costs, encompassing the procurement of the land for trail construction, Construction costs influenced primarily by the choice of materials for surfacing, and Maintenance costs, which vary due to factors affecting the trail's lifespan.

Conversely, the benefits derived from trails include health benefits, environmental advantages, and economic benefits. These calculations and considerations provide a comprehensive framework for decision-makers to assess the viability and desirability of investing in trail construction (Hans et al., 2005; Bowker et al., 2007; Otto et al., 2007; McDonald, 2015).

I.5.4 Social Impact Assessment

Recreational trails serve as integral contributors to the social fabric, offering a multitude of benefits and values. Beyond their physical appeal, these trails significantly influence the social dynamics of communities. The presence of natural amenities attracts individuals to live and work in such areas, enhancing overall quality of life (Otto et al., 2007;Progano, 2018; Baronak et al., 2022). Clean air, minimal noise pollution, and scenic views create a positive living environment. Engaging in outdoor activities like walking and bicycling not only promotes physical well-being but also brings about various health benefits, from weight maintenance to reducing the risk of cardiovascular diseases and cancer (Hans et al., 2005; Kim & Miller, 2019; Baronak et al., 2022). Also, trails amplify physical activity levels, leading to reduced healthcare costs and improved overall health, which in turn positively impact local, regional, and national economies (Bennet et al., 2003). Moreover, the social impacts extend beyond individual health. Trails provide expanded leisure opportunities, fostering community engagement and cultural activities. They raise awareness of local heritage, instill a sense of cultural identity, and contribute to the overall well-being of residents. The assessment of social benefits assigns monetary value to these various dimensions, recognizing the trail's role in enhancing community services and cultural experiences (Brownson et al., 2000; Kim & Miller, 2019). Nature Trails, in particular, demonstrate a positive impact on health, evident through physical and psychological benefits, place attachment, and Body Mass Index levels (Brownson et al., 2000; Otto et al., 2007; Kim & Miller, 2019). These often-overlooked social dimensions underscore the profound and multifaceted contributions of recreational trails to the well-being of individuals and the vibrancy of communities.

II. Methodology

For the development of the economic assessment tool for trails and its application on selected sections along the LMT, a multi-phase approach incorporating various methods and tools is used taking into account that economic impact does not occur within a single industrial sector. The methodology consists of 1) Desk review, 2) Elaboration of the general economic assessment tool, and 3) Data collection and quantitative analysis.

II.1. Desk Review

The initial phase involved a Systematic Literature Review (SLR) method. This structured approach minimizes bias and ensures a comprehensive collection of data regarding the economic impact and value of trails. Systematic reviews offer a detailed overview of advanced economic impact studies applied to recreational and nature trails, ensuring objectivity and thoroughness (Lukoseviciute et al., 2022a). Articles related to recreational trails, nature trails, hiking trails, ecotourism, economic impact, socioeconomic impact, ecosystems and heritage valuation, new trail projects, and global case studies were systematically collected. This data was cross-referenced to identify relevant information applicable to the context of Lebanon and the LMT.

II.2. Elaboration of the Economic Assessment Tool

The second step in the methodology involves developing a detailed economic assessment tool, which aims to understand the methods used in the economic valuation of hiking trails (Lukoseviciute et al., 2022a). This includes economic impact assessment, travel cost valuation (TC), contingent valuation (CV), a review of social benefits, and benefit-cost analysis (BCA).

II.2.1 Travel Cost

Travel Cost Valuation is pivotal in evaluating the economic impact of recreational activities, aiming to ascertain the cost per trip. It is a crucial tool in comprehending the financial implications of visitor expenses, considering factors such as distances from accommodations, transportation costs, and other pertinent expenditures within a specified study area.

The proximity of a tourist's lodging to the recreational site significantly influences transportation expenses (Bowker et al., 2004; Du Preez & Lee, 2016; do Val Simardi Beraldo Souza et al., 2019; Lukoseviciute et al., 2022a). According to our literature review, we will follow the strategy The sum of Transportation Cost (TrC) and Total Expenses (TE) gives us

Travel Cost = Transportation Cost + Total Expenses per Trip

Where transportation cost is the sum of travel distance and travel time and Total expenses is the sum of all expenses along the trail, including costs for local guides, food, local products, entrance fees to museums and nature reserves, equipment, and transportation.

II.2.2 Contingent Valuation (CV)

Contingent Valuation (CV) is an economic method designed to determine the value individuals attribute to a specific good or service. This method engages participants by asking whether they are willing to pay for trail services or contribute to the conservation of these trails (FAO, 2000). Even when no expenditures are incurred during outdoor recreation, natural resources still hold value. Beyond actual consumer spending on recreational activities, a surplus value represents what individuals would be willing to pay for that recreational opportunity, a crucial component in valuing the outdoor recreation experience and assessing the value of nearby recreation facilities that residents can utilize without significant travel expenses.

In the sector of outdoor recreation, CV evaluates individuals' willingness to pay for non-market goods, including the experience of recreation and passive use values like existence, option, or bequest values (Bennett et al., 2003; Otto et al., 2007; Haefele et al., 2016). Willingness to pay (WTP) is the maximum amount individuals would pay rather than forego an increase in a specific good or service, defining economic values encompassing both direct use and passive use values. The CV technique employs direct questioning, eliciting valuations through hypothetical markets and assessing WTP. It is crucial to approach WTP estimates from CV studies cautiously due to potential biases that may influence the measure. Nonetheless, the estimated mean WTP serves as a valuable tool for deriving benefits, particularly in evaluating the value of access to trails for users.

CVM is particularly attractive because it can estimate values where markets do not exist or where market substitutes cannot be found. Thus, it is widely used to measure existence values, option values, indirect use values, and non-use values (Bennett et al., 2003; Otto et al., 2007; Haefele et al., 2016). To assess the willingness of trail users to pay (WTP) for specific benefits related to the conservation and management of the LMT, participants were asked about their trip expenditures to consider their financial constraints. Participants' willingness to donate to the LMT Association for the trail's management, maintenance, and protection in 2024 was assessed. Additionally, their willingness to voluntarily pay access fees for trail use was explored. The estimated mean WTP serves as a valuable tool for deriving benefits, particularly in evaluating the value of access to trails for users.

II.2.3 Benefit-Cost Analysis

Benefit-Cost Analysis is a systematic approach to estimating the strengths and weaknesses of alternatives. It is used to determine options that provide the best approach to achieving benefits while preserving savings. The benefits and costs of each alternative are quantified and compared to provide a baseline for making informed decisions regarding the allocation of resources. BCA in this context will help to assess the overall economic efficiency of the trail projects, factoring in both direct and indirect economic impacts, as well as social and environmental benefits.

II.3. Data Collection and Quantitative Analysis

The final step in the methodology is the fieldwork and data collection where applicable assessment tools are tailored to the context of Lebanon and the specific sections of the LMT under study. While existing literature has offered valuable insights into international trends concerning the economic impact of trails, the LMT possesses distinct characteristics, and specific data for Lebanon are not always readily available. To bridge this gap, surveys and key informant interviews were conducted, involving trail users, tour organizers, service providers, and business owners along the trail.

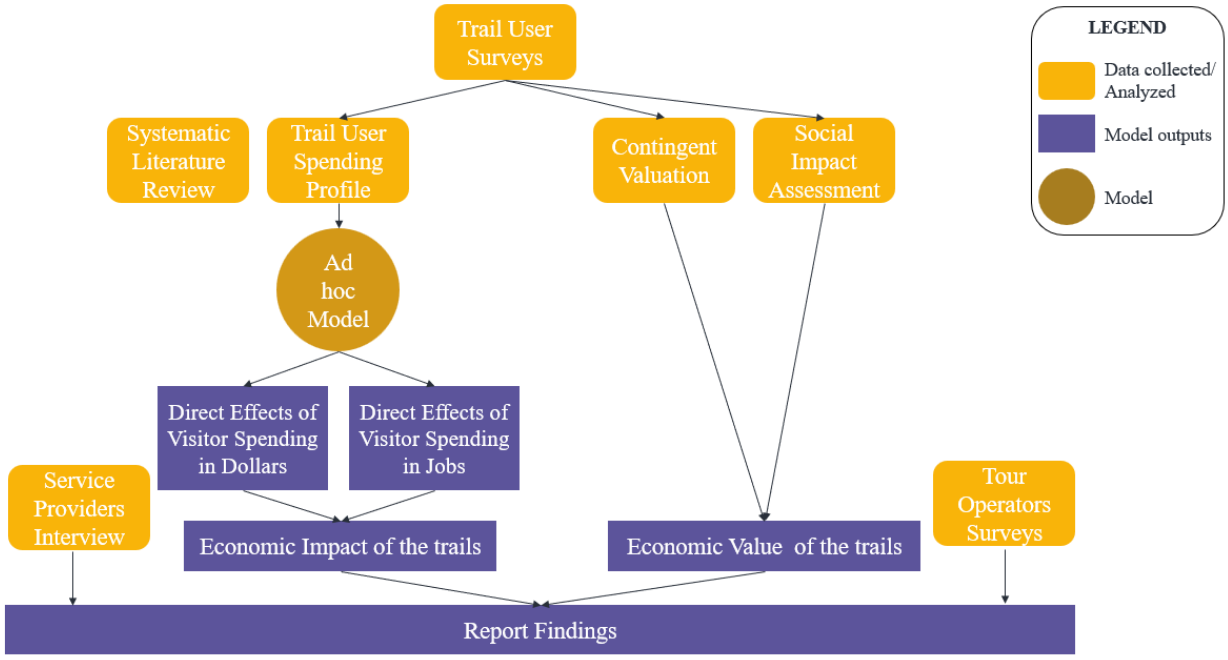


Figure 7 The Study Design Flowchart

This thorough multi-phase methodology offers a comprehensive and systematic approach to creating an economic assessment tool for trails, with a focus on specific sections of the LMT. The integration of international insights with context-specific data collection techniques demonstrates a commitment to bridging gaps in the existing literature and providing nuanced perspectives on the economic dynamics of trail systems, particularly within the unique context of the LMT.

The absence of previous studies on Lebanon and the LMT's economic impact is largely due to the lack of essential national statistical data, such as the number of visitors on recreational trails and nature-based visitor expenditures. These statistics are critical for various economic impact models. This data deficiency restricts the use of traditional approaches that rely on inputs such as annual family income and other statistics. To address this gap, the current study employs detailed surveys and interviews, recognizing that these methods are time-consuming but necessary. To bridge the data gap, surveys and key informant interviews will be conducted. Data collection involves creating a survey for trail users, individuals, and tour organizers, as well as conducting key informant interviews with local service providers and businesses. This step will help gather more detailed information regarding the selected study areas.

II.3.1 Surveys

An online, self-administered survey will be completed by at least 300 trail users, and 20 tour operators specialized in hiking. The valid responses collected were 109 trail users, and 11 tour operators, corresponding to those who engaged in at least one hike along the LMT during the year 2023. Questions were designed to align with the study's goals while maintaining a reasonable length, using multiple-choice options to facilitate data analysis. Specific data points, including user age, gender, distance traveled, origin, destination, stops made, purpose, and frequency, were collected. Distributed through Google Forms, the survey focuses on socio-demographics, hiking habits, interests, trail use, spending patterns, willingness to pay for recreational value, and travel costs (Tomes et al., 2005; Trail Facts, 2005; Scipione, 2014; Lawson, 2022). The survey's primary purpose is to gather information about LMT users' demographics and visit patterns to capture direct spending, assess the direct impact, and gather data for calculating travel costs and contingent value. To ensure widespread participation, collaboration with the LMT Association was utilized for promotion and distribution through relevant channels. Additionally, a snowball sampling approach encouraged respondents to share the survey link, expanding the study's reach. Separate online interviews were conducted with tour operators and organizers in Lebanon, aiming to gather information on both direct and indirect impacts. Questions covered topics including socio-demographics, hiking habits, trail use, potential trail uses, interactions, and volunteering potential (K. Seville et al., 2014). This Tour Operators Survey provides insights into the tourism industry's perception of the trail's economic benefits, exploring hiking trends and potential trail uses. Before their administration, the online surveys were tested and validated with the LMT Association. Detailed survey questionnaires and interview guides are provided in Annexes.

II.3.2 Key Informant Interviews

Face-to-face and phone interviews will be conducted with service providers along the trails, focusing on guides, accommodation services, local small businesses, and food and beverage services. Personal interviews were chosen to enhance participation and ensure accurate responses.

The primary objective is to gain insights into the indirect economic effects of the trail sections. The interviews cover topics including the financial aspects of providing services and running businesses, socio-demographics, revenue, costs, net profit, local expenditure, etc.

These key informant interviews aim to understand the indirect economic impacts of businesses and local service providers associated with the LMT. A total of 30 key informant interviews were conducted in the five selected sections along the LMT. These interviews cover a range of services, including guides, accommodation facilities, and food and beverage establishments, with the goal of identifying the indirect impact of the trail. The detailed interview guide is provided in Annexes.

By utilizing these methodologies, we can evaluate the trail's value to its users. This assessment hinges on two key factors: demand estimation and willingness-to-pay. Trail usage serves as an indicator of demand, and both travel demand results and survey data will be incorporated. Regression models can then be developed for each variable, with distance traveled to access the trail being a statistically significant variable often observed. This relationship can be linked to consumer surplus, considering the average distance from the trail. Consumer surplus tends to favor users in close proximity to the trail, and the surplus benefits can be calculated by estimating the disparity between the maximum amount a typical user would pay to access the trail and the actual direct cost paid by an individual user.

II.4. Site Selection and Analysis

The sampling sites chosen represent sections of the Lebanon Mountain Trail, strategically dispersed across the five governorates through which the trail passes (Figure 8). The specific sections were selected with the goal of capturing the diverse tourism dynamics found in different regions of Lebanon. While some areas experience more seasonal tourism with limited infrastructure development, others witness year-round tourism with enhanced infrastructure and services. This deliberate selection aims to encompass a wide spectrum of tourism scenarios, facilitating a nuanced understanding of variations, particularly concerning indirect impacts.

The selected sections vary in length and level of difficulty, spanning from 13.2 to 20.7 kilometers, further enhancing the diversity of the study sites (Table 4).

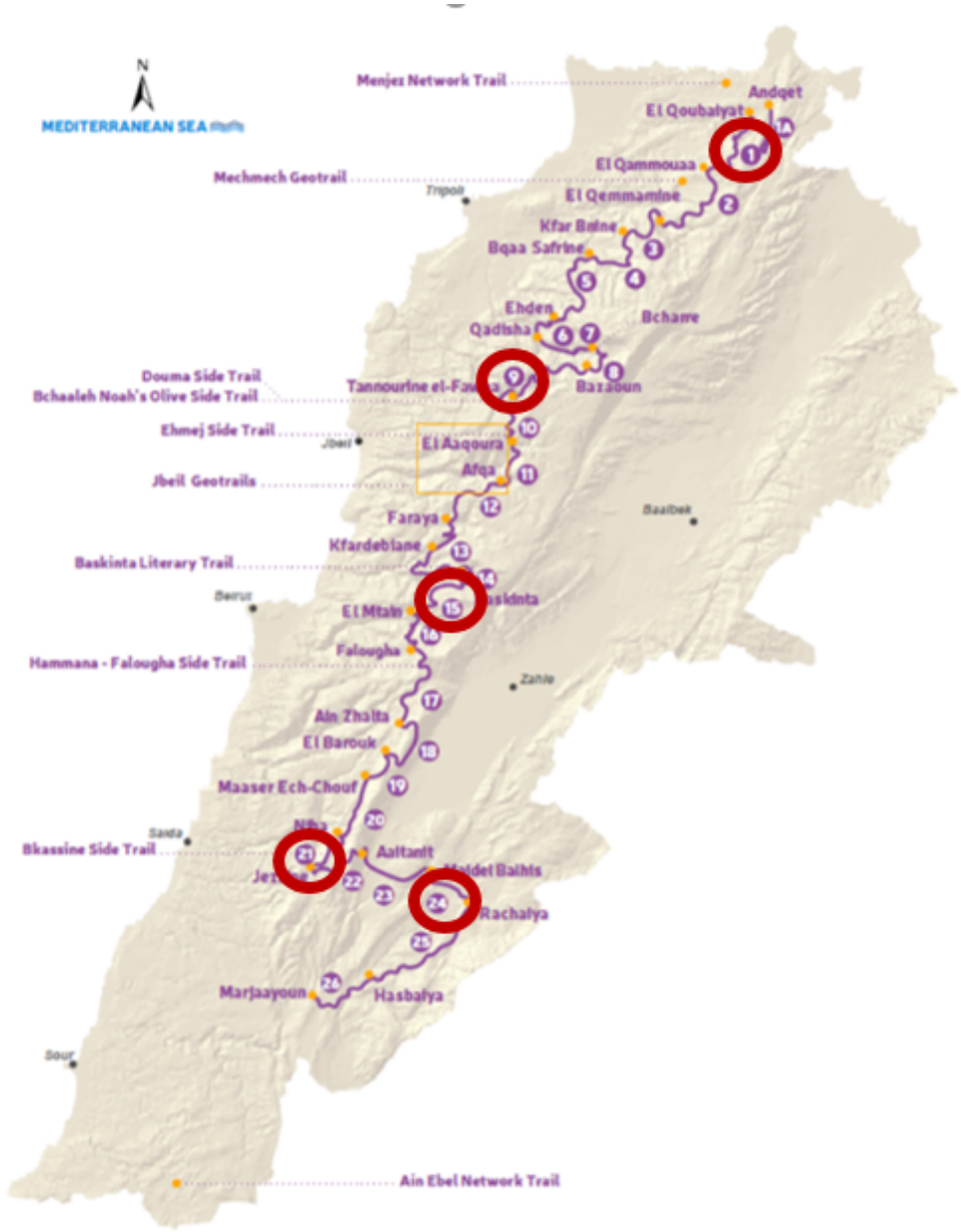


Figure 8 Selected sections along the Lebanon Mountain Trail (LMT, 2024)

Table 4 Selected sections along the LMT

Study Area	LMT Section	Section Name	Total Length
Akkar	1	EL QOUBAIYAT – EL QAMMOUAA	15.5 km
North Lebanon	9	BAZAOUN – TANNOURINE EL-FAOUQA	20.7km
Mount Lebanon	15	BASKINTA – EL MTAIN	16.5 km
South Lebanon	21-22	JEZZINE – BKASSINE side trail	15 km
West Beqaa-Rachaiya	24	MAJDEL BALHIS – RACHAYA EL OUADI	13.2 km

III. Results & Analysis

The results and analysis section is organized into three parts: profiles of trail users, profiles of service providers, and subsequent analysis. First, we detail demographic data such as residence, gender, age, household income, employment, and marital status of trail users. We also explore their interests, reasons for trail use, preferred trail sections, days and seasons of activity, activities engaged in, travel group composition, and accommodation preferences.

Next, we provide insights from interviews with service providers including guides, accommodations, local businesses, and food services along the LMT, highlighting their economic contributions and perspectives.

The analysis begins with calculations for transportation costs, total expenses, and overall travel costs. We then evaluate both direct and indirect economic impacts of these expenditures, followed by a Cost-Benefit Analysis (CBA) to assess the economic feasibility and benefits associated with the LMT.

III.1. Trail Users Profiles

III.1.1 Demographics

Residence-Primarily local

Usage of the LMT is predominantly by local residents, defined as individuals residing within Lebanon. Among surveyed respondents, 93% are Lebanese nationals living in Lebanon, while 7% are foreigners. This mix of local and international users highlights the trail's appeal to a diverse range of hikers, both from within Lebanon and beyond its borders.

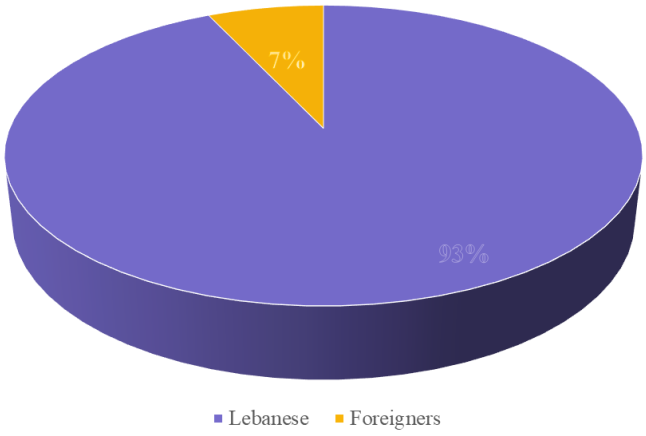


Figure 9 Residence Distribution of Trail Users

Gender – majority male

Survey respondents consisted of 63.4% males and 36.6% females. This gender distribution differs from other studies, which typically show a more balanced split. Recent research indicates that gender participation in outdoor activities often varies by no more than 10% from an even 50-50 split, with around 55% male participation being common (Scipione, 2014). Notably, the Outdoor Foundation (2022) reported that in 2022, an average of 53.5% of males and 46.5% of females participated in outdoor activities such as hiking, biking, running, and camping in the US.

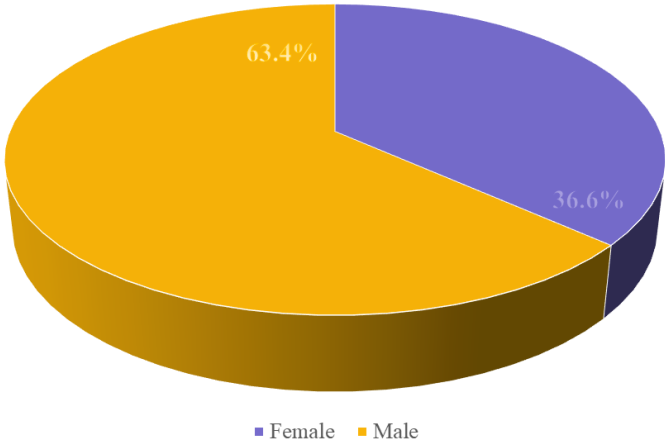


Figure 10 Gender Distribution of Trail Users

Age – Generation X

The largest percentage of trail users (29.7%) were in the 26-35 age group, likely due to their higher physical fitness and enthusiasm for outdoor activities. This was followed by the 46-55 age group at 27.7%, as individuals in their forties and fifties often have more leisure time for outdoor pursuits. Additionally, 21.8% of trail users were aged 36-45. Only 10% of those surveyed were aged 18-25, with another 8.9% between 56-65. Notably, only 2% of trail users were over 65 years old. These numbers are similar to findings by Moore and Graefe (2018), who reported that 38% of outdoor enthusiasts are aged 25-44, followed by 21% in the 45-61 age group (Moore & Graefe, 2018).

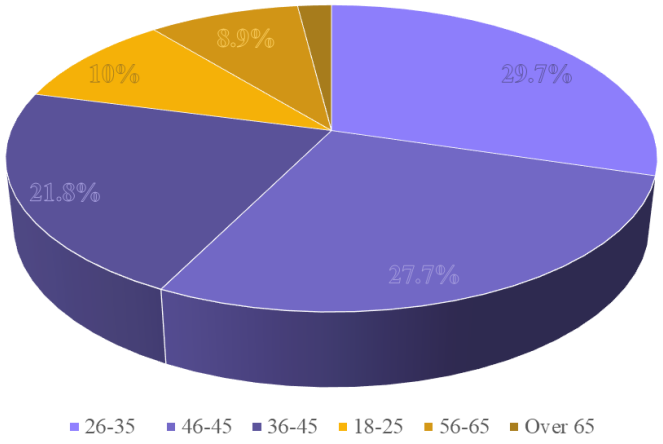


Figure 11 Age Distribution of Trail Users

Household Income

About one-quarter of trail users (24.8%) reported a household income between $1,000 and $2,000 per month, while 21.8% had a household income of less than $1,000. Additionally, 18% reported household incomes of $2,001 to $3,000, and 35.3% had household incomes of $3,000 and above, including 16.7% earning $6,000 or more. These findings align with Heintzman's research, which indicates that participation rates in outdoor activities and recreation increase with income level (Heintzman, 2020).

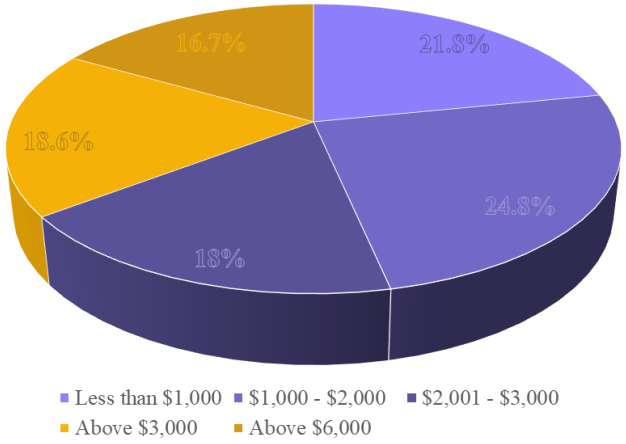


Figure 12 Household Income Distribution of Trail Users

Employment – Private sector

Nearly half of the survey respondents work in the private sector 52.5%, while 26.7% are freelancers, 6% are employed in the public sector, 5% are retired, and 6% are students. Previous studies have shown a higher proportion of retirees participating in outdoor activities globally. For instance, Lu and Lee reported that 12% of outdoor recreation participants were retired (Lu & Lee, 2019). However, the decrease in their numbers in this survey may be attributed to changed economic circumstances. Similarly, Cordell et al. found that about 8% of outdoor recreation participants were students, which aligns closely with the 6% found in this survey (Cordell et al., 2021)

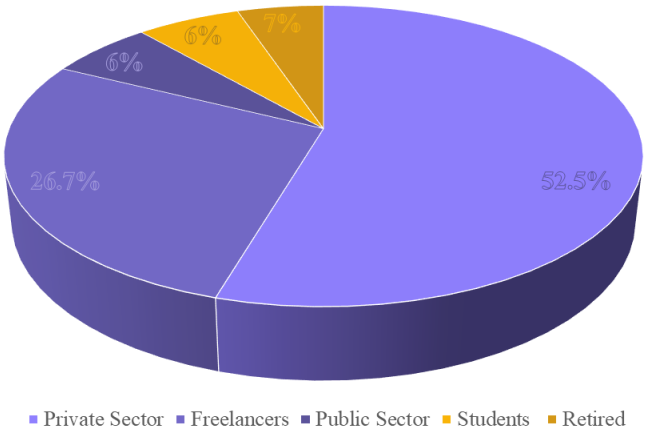


Figure 13 Employment Status of Trail Users

Marital Status- Married

Of the respondents, 53.5% reported being married, while 41.6% identified as single. The remaining respondents were either divorced or widowed. These findings are consistent with Abraham and Ramaswamy, who found similar percentages and distributions in their study of outdoor recreation participants (Abraham & Ramaswamy, 2013).

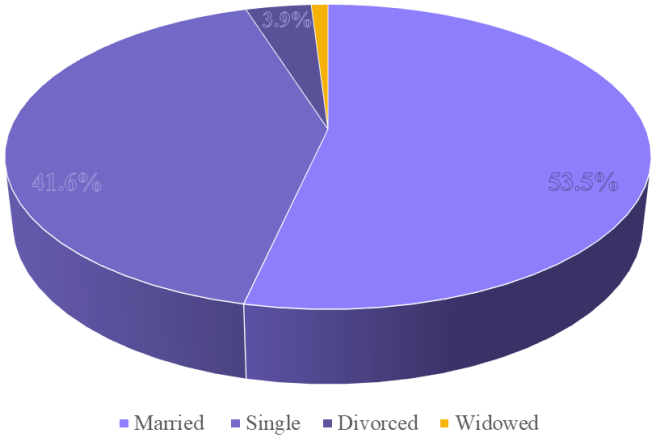


Figure 14 Marital Status of Trail Users

III.1.2 Interests

Nature and cultural discovery emerged as the primary motivations for using the LMT, cited by the highest percentage of trail users at 81.2%, followed by tourism and recreation at 77.2%, health and exercise at 59.4%, and sports and fitness at 56.4%. Approximately 19.8% of users reported commuting on the LMT for work, studies, or research, while the remaining 2% was divided between scouting and reconnecting with their heritage. This substantial emphasis on nature and cultural discovery as a motivation for hiking along the LMT contrasts with findings from previous studies. For instance, Smith et al. (2020) found that 45% of trail users cited exercise and fitness as their main reason for trail use, followed by enjoyment of nature and scenery at 30% (Smith et al., 2020).

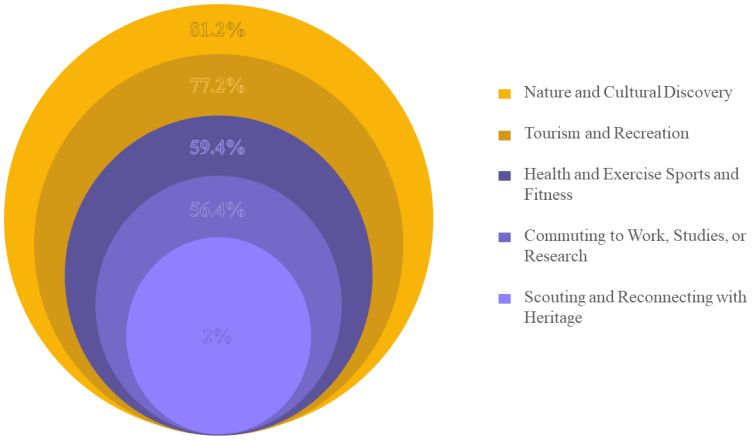
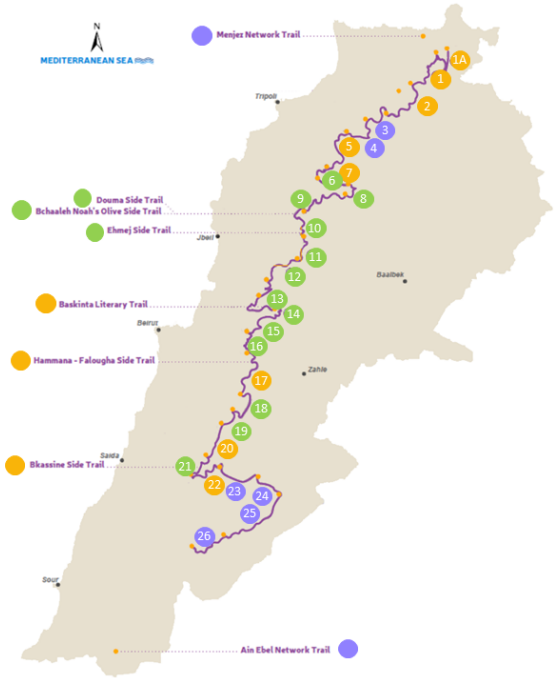


Figure 15 Main Reasons for trail Use

III.1.3 Trail Use Patterns

Section Selection – Nature reserves and side trails

The survey results reveal that certain sections of the LMT were hiked more frequently in 2023. The sections with the highest percentage of hikers include Section 6, Section 10, Section 13, Section 16, Section 18, and Section 19. Additionally, two side trails, Douma Side Trail and Ehmej Side Trail, also received a high number of votes. We can observe that two of the sections, Section 6 and Section 10, contain nature reserves and Important Bird Areas (IBAs)—Horsh Ehden and Tannourine, respectively. Section 13 includes the Faqra Natural Bridge, a protected area. Sections 18 and 19, located in Ain Zhalta and Barouk, encompass the Shouf Biosphere Reserve and the Al Shouf Cedar Nature Reserve, the largest nature reserve in Lebanon. All these sections are home to ancient cedar trees and diverse wildlife, making them key destinations for eco-tourism and nature lovers.In addition to these sections, the Douma Side Trail, known for its Loop Trail, and the Ehmej Side Trail, featuring the Arez Ehmej Conservation Park, also showed high popularity. The Douma Side Trail offers varied terrain and scenic views, making it a well-rounded hiking experience, while the Arez Ehmej Conservation Park within the Ehmej Side Trail attracts hikers interested in conserved landscapes and natural beauty.



Section	Percentage
Section 1A	17.8%
Section 1	16.8%
Section 2	10.9%
Section 3	5.9%
Section 4	7.9%
Section 5	13.9%
Section 6	19.8%
Section 7	12.9%
Section 8	29.7%
Section 9	26.7%
Section 10	32.7%
Section 11	22.8%
Section 12	28.7%
Section 13	31.7%
Section 14	26.7%
Section 15	29.7%
Section 16	31.7%
Section 17	18.8%
Section 18	36.6%
Section 19	31.7%
Section 20	14.9%
Section 21	20.8%
Section 22	13.9%
Section 23	5.9%
Section 24	8.9%
Section 25	6.9%
Section 26	3%
Baskinta Literary Trail	17.8%
Douma side trail	25.7%
Bchaaleh side trail	19.8%
Ehmej side trail	31.7%
Hammana – Falougha side trail	12.9%
Jezzine – Bkassine side trail	12.9%
Menjez Network Trail	6.9%
Ain Ebel Network Trail	3%

<10% 10% - 20% >20%

Figure 16 Section Selection for Trail users

The popularity of these sections and side trails can be attributed to their unique natural features, ecological significance, and the opportunities they offer for hikers to engage with Lebanon's rich biodiversity and stunning landscapes. These factors collectively contribute to their high visitation rates, highlighting their importance as key attractions within the Lebanon Mountain Trail.

Days and Seasons of Trail Use

A majority of trail users surveyed indicated they visit the LMT on both weekdays and weekends. This pattern contrasts with findings from other studies, such as the data from Outdoorsy et al. (2019), which showed that 60% of trail users visit on Saturdays and Sundays only (Outdoorsy et al., 2019). When asked about the seasons during which they use the trail, 42.6% mentioned using the trail in autumn, 57.4% in spring, 29.7% in summer, and 23.8% in winter. This indicates a notable deviation from typical usage patterns, as winter hiking usually has very low participation rates (10%) (Trailblazer et al., 2021). The significant percentage of winter hikers can be validated by the proportion of users who engage in snowshoeing.

Activity – Hiking

Recreational hiking was identified as the primary trail activity by 85.1% of survey respondents, followed by long-distance trekking (37.6%) and snowshoeing (25.7%). Less common activities included walking a pet (10.9%), trail running (8.9%), mountain biking (4%), and birdwatching (6.9%). The combination of activities such as walking a pet and birdwatching into the broader walking/hiking category highlights hiking as the dominant trail use. Survey respondents often engaged in at least two activities along the trail, with recreational hiking and long-distance trekking being the most common. This finding aligns with Hiker et al. (2018), who also reported that hiking had the highest percentage of participants, followed by jogging or running. The greater popularity of recreational hiking on the LMT may be attributed to its accessibility and suitability for local, short-duration use. Additionally, many sections of the trail are easily accessible from neighborhoods, making hiking a convenient and favored activity among trail users (Hiker et al., 2018).

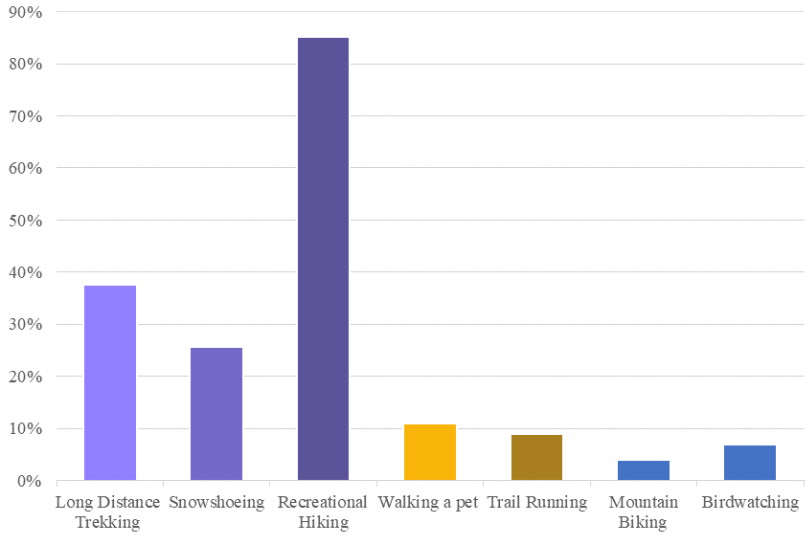


Figure 17 Activity preference for trail users

Composition of Travel Group – Small Groups of friends

Almost nine out of ten survey respondents (83.3%) indicated they usually travel the trail with others, with the majority opting for small groups of friends and relatives (75%), followed by large groups (20.8%), colleagues, and couples. Another 16.8% usually travel alone, while 33.7% prefer hiking in couples. This finding highly contradicts the study entitled "Exploring Group Dynamics on Trails: An Ethnographic Study," which revealed that 70% of trail users visit alone or in pairs (Group Explorer et al., 2017). An interesting observation is that 13% of respondents travel with tour operators, indicating a potential economic impact of trails through organized hiking tour.

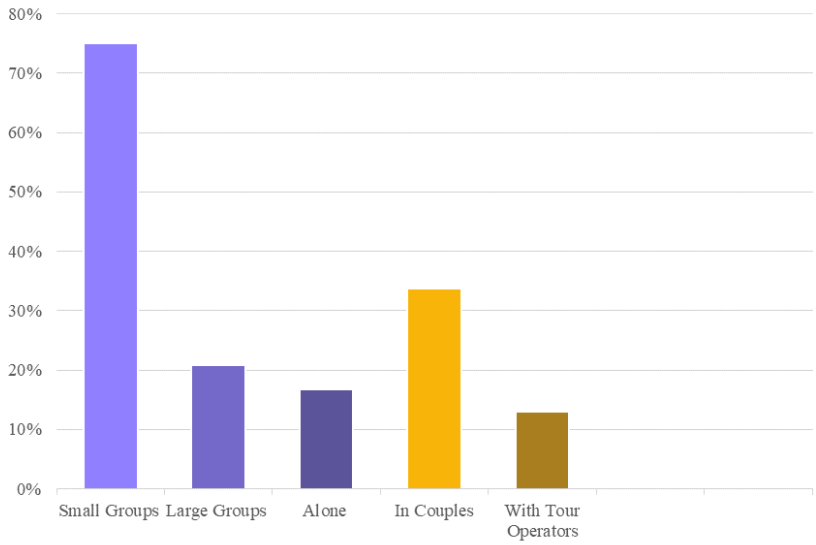


Figure 18 Composition of travel groups for trail users

Preference for Accommodations – Guesthouses

When considering accommodation options for overnight trips along the LMT, survey respondents displayed a diverse range of preferences. The majority (80.3%) favored guesthouses, indicating a preference for comfortable and local lodging options offering a sense of community and cultural immersion. Mountain hostels were also popular, chosen by 21.6% of respondents, likely due to their affordability and rustic charm, aligning with the outdoor experience sought by many hikers. Religious accommodations were selected by 37.8% of respondents, suggesting a preference for culturally significant lodging options along the trail. Camping emerged as a preferred choice for 32.4% of respondents, highlighting the appeal of experiencing nature firsthand and the flexibility it offers in terms of itinerary and budget. The relatively lower percentages for hotels, youth chalets, mountain chateaus, furnished apartments, bungalows, and Airbnb accommodations indicate that respondents prioritize authentic and immersive experiences that align with the natural surroundings and cultural heritage of the LMT.

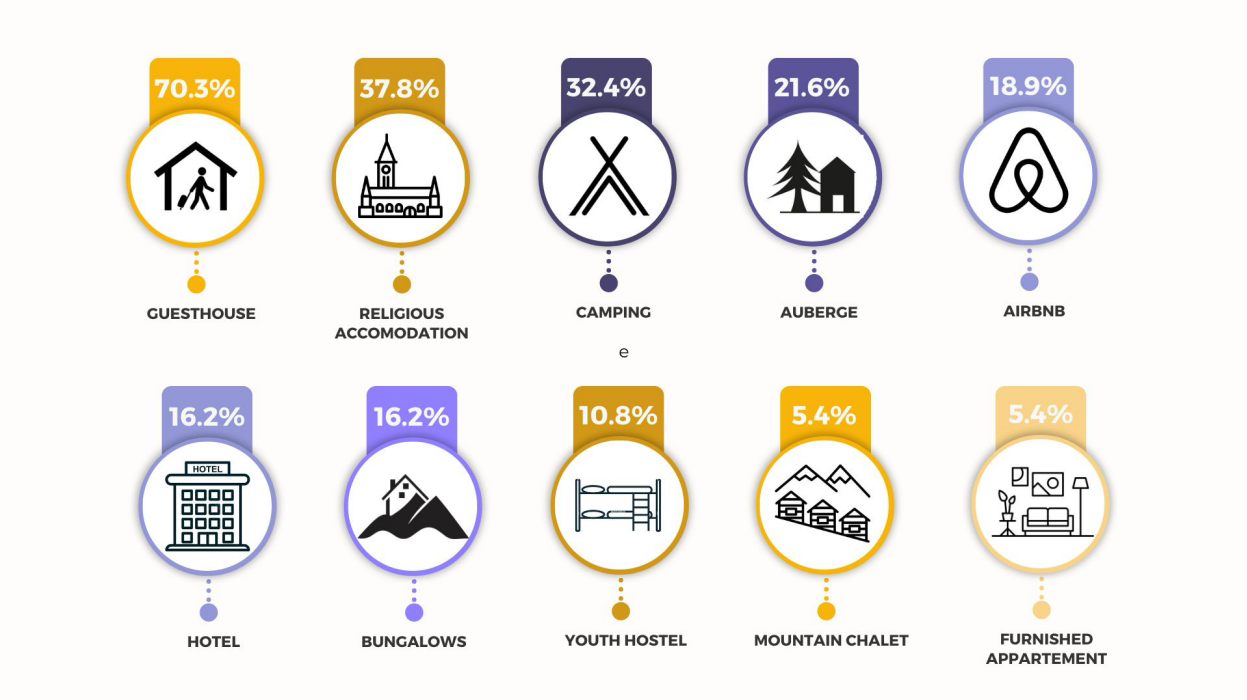


Figure 19 Accommodation preference for trail users

III.2. Service Providers Profiles

Based on the interview of 30 service providers along the five studied sections along the LMT, demographic data reveals a predominantly male representation at 63.3%, with females comprising 36.7% of respondents. The age distribution shows that a significant portion falls between 36-45 years and 46-55 years, with a notable presence in the 56-65 age bracket. Regarding marital status, 60% are married, indicating family involvement in their business ventures. Interestingly, 23.3% of respondents have households with seven members, suggesting varying family sizes among providers. In terms of income, a substantial 66.7% of surveyed service providers earn less than 1000 USD per month, highlighting economic challenges within this sector. Business registration is observed among 56.7% of respondents, indicating a level of formalization despite regulatory gaps. On average, each provider employs 6.7 permanent or part-time workers, reflecting the employment generation potential of trail-based enterprises. These findings underscore the diverse demographic and economic landscape among service providers along the LMT, reflecting both challenges and opportunities in supporting sustainable tourism development.

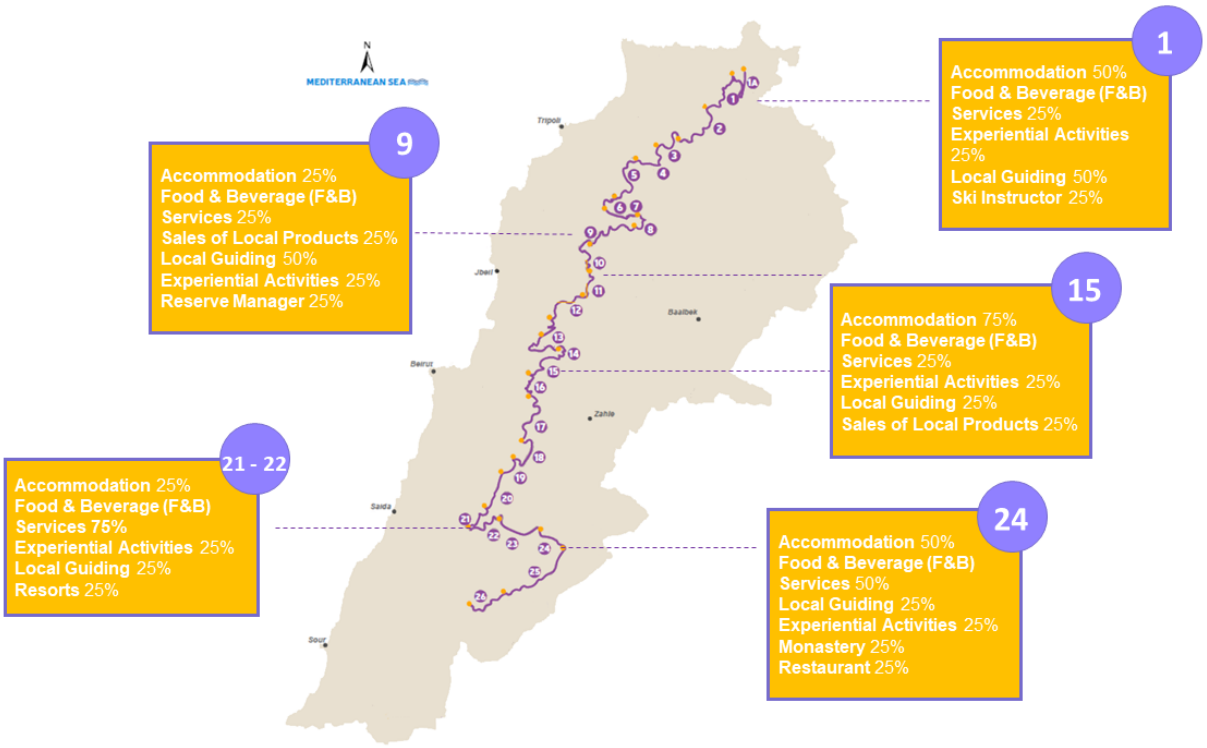


Figure 20 Services Provided along the LMT

III.3. Transportation Cost Calculation

To accurately assess the transportation costs associated with visiting the LMT, two primary factors were analyzed: travel distance and travel time. These elements are derived directly from the survey data provided by trail users.

3.1 **Travel Distance:** This metric represents the round-trip travel distance to the trail, measured in kilometers (km). Analysis of the survey data revealed that the majority are reside the Matn (23.76%), Keserwan (19.8%), and Beirut (16.83%) regions. Notable percentages also come from Jbeil (5.94%) and Baabda (5.94%), with smaller representations from Batroun (4.95%), Tripoli (2.97%), Koura (1.98%), and Bcharre, Akkar, and Chouf (each at 0.99%). Additionally, 14.86% of the respondents are living abroad, the latter are not taken into consideration in the travel cost calculations.

3.2 **Travel Time** indicates the round-trip time spent traveling to the trail, measured in hours (h).

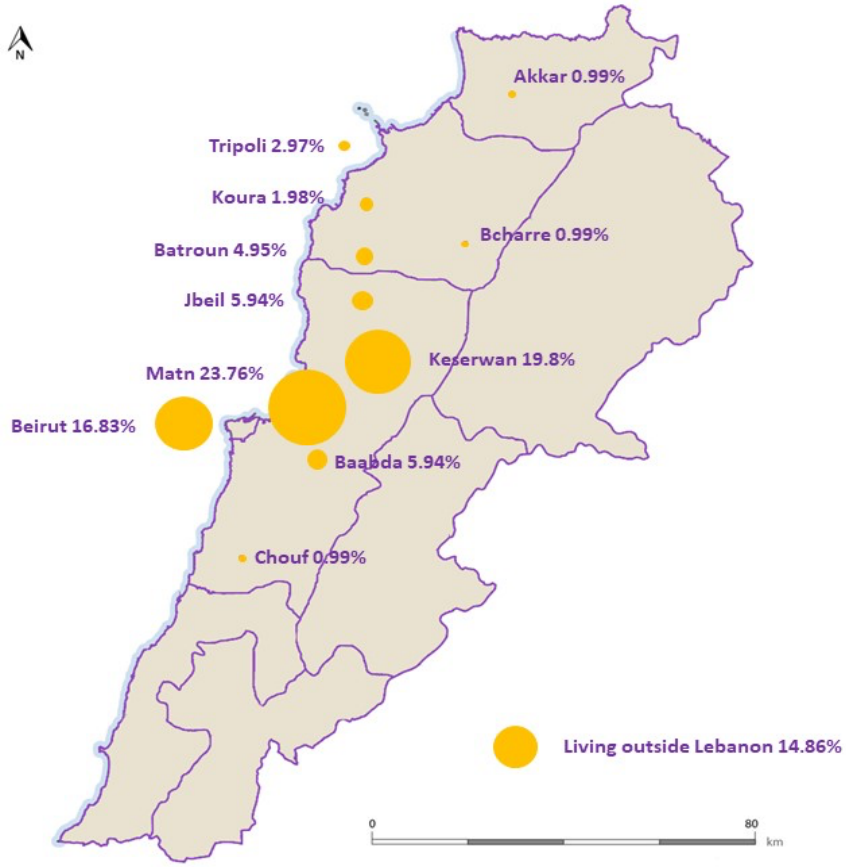


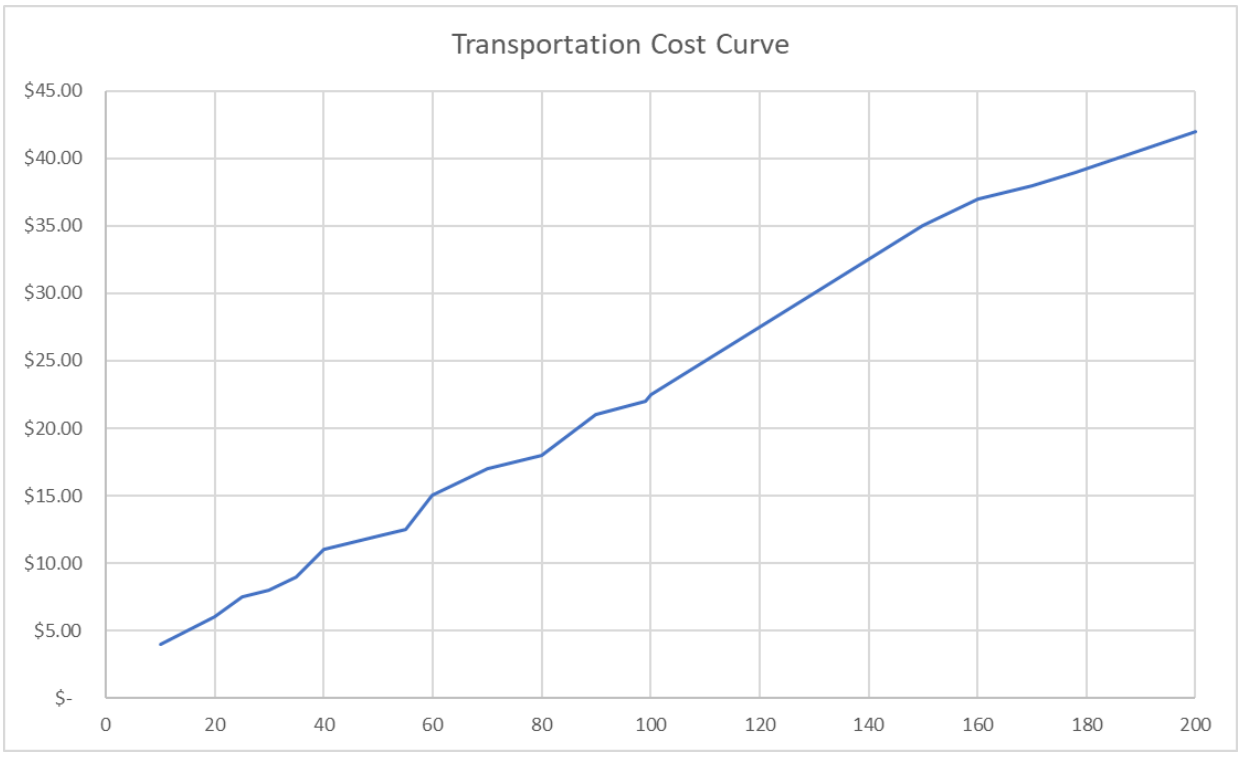
Figure 21 Place of residence of trail users

To convert these components into monetary values in USD, we applied specific multipliers based on our methodology[1]:

- For Travel Distance Cost: we used a rate of 0.20$ per kilometer. This rate is derived from the average cost of petrol. Specifically, if 100 km approximately requires 1 gallon of petrol, costing $20, then traveling 1 km costs $0.20.
- For Travel Time Cost: we used an average hourly wage of $1.25, representing the basic average income in Lebanon. This value reflects the opportunity cost of time spent traveling instead of working (L'orient Today, 2024).

Using these factors, the transportation cost (TrC) for each trip is calculated with the following formula: **TrC = (Travel Distance x 0.20$) + (Travel Time x 1.25$)**

When calculated for individuals surveyed, the average transportation cost (TrC) was found to be **40.20$**. The graph below shows the transportation cost curve illustrating the variability in cost (X axis) compared to average distance travelled per trip to the LMT (Y axis).



Graph 1 Transportation cost distribution of trail users

[1] The methodology employed in this section draws from the approach outlined in the paper by Ecosystem Valuation titled "Travel Cost Method" (Ecosystem Valuation, 2000), accessible at https://www.ecosystemvaluation.org/travel_costs.htm

To extrapolate the average Transportation Cost (TrC) found within the surveyed population to the broader population of trail users in Lebanon, several demographic factors and estimations are considered. Firstly, to identify the target population, individuals between the ages of 18 to 65 are typically regarded as the primary trail users. With a total population of Lebanese residents in Lebanon estimated at 4,000,000, and considering that approximately 69% fall within the age range of 15 to 65, this yields a demographic pool of around 2,760,000 individuals. Within this demographic, assuming that 10% are potential trail users, at half of them are actual trail users (138,000 individuals) engaging in trail related activities at least once per year. Additional insights from nature reserve data, encompassing entries into prominent reserves including Shouf Biosphere Reserve, Jabal Moussa Biosphere Reserve, Tannourine Cedars Nature Reserve, Horsh Ehden Nature Reserve, and Bentael Nature Reserve, indicate that approximately 170,573 individuals entered these reserves in 2018, which somehow validates the estimated 138,000 visits to the LMT per year.

Considering these demographic factors and estimations, the study considered two scenarios, reflecting an optimistic outlook where 138,000 individuals use the LMT at least once per year, and a conservative estimate where 69,000 individuals use the LMT at least once per year.

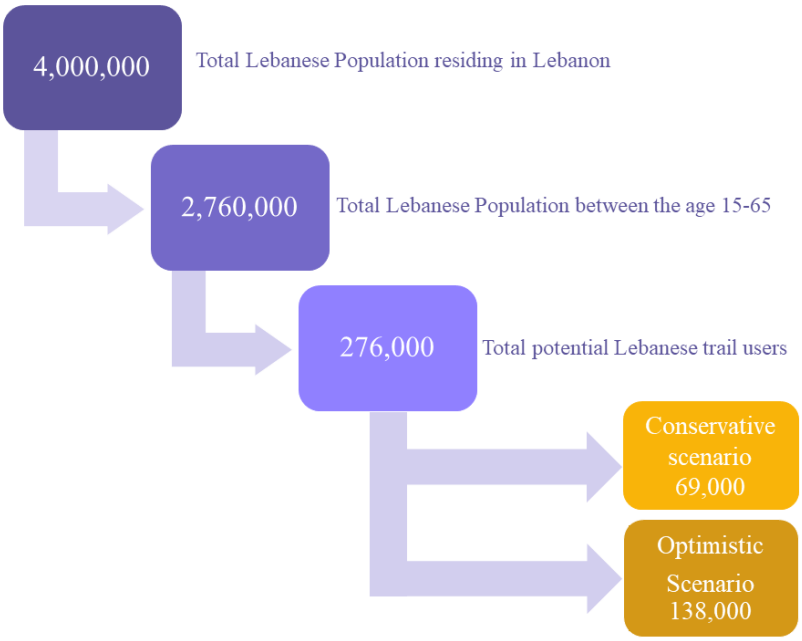


Figure 22 Sample extrapolation methodology

According to the conservative scenario with 69,000 visits to the LMT, trail users contribute a total of $2,761,380 per year, calculated by multiplying the average travel cost of $40.02 by 69,000. In the optimistic scenario, the total contribution rises to $5,522,760 per year.

III.4. Total Expenditures

III.4.1 Expenditures for one-day visit

The survey collected data on the total expenditure per trail user for a single full day of hiking. Respondents provided direct estimates of their daily expenses, resulting in an average assumed daily expenditure of 26.20$. Detailed information on specific trip expenses was also collected from trail users. These expenses included costs for local guides, food, local products, entrance fees to museums and nature reserves, equipment, and local transportation. the average daily expenditure based on these detailed expenses amounted to 61$, almost 3 times the initial estimate. Thus, the average estimate by trail users is considered 43.60$. In addition to the trail users' survey, data was collected from service providers and tour operators regarding their perceptions of trail users' daily expenditures. The service providers estimated an average daily expenditure of 36.20$, while the tour operators estimated it at 30.20$. To determine a realistic average expenditure per trail user for one day, these three figures were averaged, thus, the average expenditure per trail user for one full day is **36.60$.**

Estimation	Daily Expenditure (USD)
Average Estimate from users	43.60
Average Estimate from service providers	36.20
Average Estimate from tour operators	30.20
Final Average	**36.60**

In the survey, 87% of respondents indicated that they spend one full day on the trail. The table below shows the total expenditures per trail user for one full day in both scenarios.

Scenario	One day visits	Total Expenditures *(one day visit x average one day expenditure)*
Conservative (69,000 visits)	87% corresponding to 60,030 visits	**$2,198,898.90**
Optimistic (138,000 visits)	87% corresponding to 120,060 visits	**$4,397,797.80**

Therefore, for the conservative scenario, where 69,000 visits are made to the LMT, the total expenditures for one full day amount to **2,198,898.90$.** For the optimistic scenario, with 138,000 visits, the total expenditure rises to **4,397,797.80$.**

III.4.2 Expenditures for two-days and one-night visit

Similar to the one-day expenses, data from the survey was collected for two-day and one-night trips on the LMT, and revealing with the following data:

Estimation	1 night and 2 days Expenditure (USD)
Average estimate from users	106.43
Average Estimate from service providers	109.70
Average Estimate from tour operators	94.00
Final Average	**103.37**

In the survey, 53% of respondents indicated they spend two full days and one night on the trail. Therefore, for the conservative scenario, where 69,000 individuals use the LMT, the total expenditures for a two-day and one-night trip amount to **3,790.480.50$.** For the optimistic scenario, with 138,000 trail users, the total expenditure rises to **7,580,961.00$.**

Scenario	2 days and 1 night visits	Total Expenditures (USD) *(2 days and 1 night visits x average 2 days and 1 night expenditure)*
Conservative (69,000 visits)	53% corresponding to 36,570 visits	**3,790,480.50**
Optimistic (138,000 visits)	53% corresponding to 73,140 visits	**7,580,961.00**

III.5. Travel Cost Calculation

To calculate the travel cost for trail users, the transportation cost (40.20$ per visit) must be added to the expenditures. The following tables provides a breakdown of these calculations:

Conservative Scenario

Visit type	Percentage of respondents	Extrapolated Number of Respondents	Total Expenditures	Transportation Cost	Travel Cost
1 day	87%	60,030	$2,198,898.90	$2,413,206.00	$4,612,104.90
2 days	53%	36,570	$3,790,480.50	$1,470,114.00	$5,260,594.50
				TOTAL	**$9,872,699.40**

Optimistic Scenario

Visit type	Percentage of respondents	Number of Respondents	Total Expenditures	Transportation Cost	Travel Cost
1 day	87%	120,060	$4,397,797.80	$4,826,412.00	$9,224,209.80
2 days	53%	73,140	$7,580,961.00	$2,940,228.00	$10,521,189.00
				TOTAL	**$19,745,398.80**

III.6. Direct Economic Impact of Hiking along the LMT

To estimate the direct economic impact on the entire trail, we employed an extrapolation process based on the data from our sample. First, the average economic impact per income generating activity was calculated. Then, we determined the percentage of trail users responding to each category and used this percentage to extrapolate the number of trail users in the entire population. Finally, by multiplying this projected number by the average income obtained for each income generating activity, we derived estimations for the direct economic impact of the trail. We applied this process to the following scenario and income generating activities:

Conservative Scenario (69,000 visits)

Income generating activity	% of respondents	Extrapolated number of services	Average expenditure per service ($)	Amount ($)
Total accommodation income	34.3%	23,694.6	47.5	1,126,233.96
Total local guide income (assuming every 12 visitors hire one guide)	30.3%	1,742.25	59.00	102,792.50
Total income from meals in facilities along the LMT	73.7%	50,873.7	26.51	1,348,987.05
Total income from equipment and tool rental	16.2%	11,150.4	25.31	282,244.50
Total expenditure on transportation	23.2%	16,028.7	53.6	859,356.90
Total income from locally produced items	69.7%	48,086.1	57.8	2,780,729.00
Total income from museum entrance fees	34.3%	23,694.6	6.2	146,906.52
Total income spent on local shops	72.7%	50,176.8	22.0	1,105,365.39
Total income spent on entrances to reserves	85.5%	59,236.5	5.0	296,182.50
Total Income				**8,048,798.32**

Optimistic Scenario (69,000 visits)

Income generating activity	% of respondents	Extrapolated number of services	Average expenditure per service ($)	Amount ($)
Total accommodation income	34.3%	47389.2	47.5	1,126,233.96
Total local guide income (assuming every 12 visitors hire one guide)	30.3%	3484.5	59.00	102,792.50
Total income from meals in facilities along the LMT	73.7%	101747.4	26.51	1,348,987.05
Total income from equipment and tool rental	16.2%	22300.8	25.31	282,244.50
Total expenditure on transportation	23.2%	32057.4	53.6	859,356.90
Total income from locally produced items	69.7%	96172.2	57.8	2,780,729.00
Total income from museum entrance fees	34.3%	47389.2	6.2	146,906.52
Total income spent on local shops	72.7%	100353.6	22.0	1,105,365.39
Total income spent on entrances to reserves	85.5%	118473	5.0	296,182.50
Total Income				**16,097,596.64**

III.7. Indirect Economic Impact of Hiking along the LMT

To calculate the indirect economic impact of hiking trails along the LMT, we consider the re-spending of dollars within the local economy by vendors, suppliers, and households. In cases where specific data is unavailable, it's common practice to multiply by to the direct economic income obtained by (1.5 – 1), a factor derived from previous studies (Woodfin, 2010). This multiplier reflects the proportion of income that is re-spent within the local economy. Given the following estimated total incomes, we apply this methodology:

Indirect Economic Impact = Direct Economic Impact × (1.5 − 1)

Indirect Economic Impact

Scenario	Indirect Economic Impact ($)
Optimistic Scenario	$ 8,048,798.32
Conservative Scenario	$ 4,024,399.16

III.8. Multiplier Effect

To assess the comprehensive impact of projects or programs, multipliers play a crucial role by considering various economic indicators such as gross output, aggregate personal income, value added, and employment within the region under study.

For the LMT case, the study utilized the Type 1 Multiplier, which evaluates the industrial response to change. This multiplier is calculated by summing the direct and indirect effects and dividing them by the direct effects.

Type 1 Multiplier

Scenario	Direct Effects ($)	Indirect Effects ($)	Type 1 Multiplier
Optimistic Scenario	$ 16,097,596.64	$ 8,048,798.32	1.5
Conservative Scenario	$ 8,048,798.32	$ 4,024,399.16	1.5

The calculated Type 1 Multiplier for both the optimistic and conservative scenarios is 1.5. This indicates that for every dollar of direct expenditure, there is an additional 0.5 dollars generated in the local economy through indirect effects. This multiplier suggests a significant economic impact, as the initial spending by trail users leads to further economic activity within the region. When compared to the findings of another study (Smith, 2022), which reported a Type 1 Multiplier of 1.4 for similar rural tourism projects, our results demonstrate a slightly higher economic impact. This can be attributed to the specific characteristics and economic conditions of the Lebanon Mountain Trail region, including the presence of numerous local vendors, suppliers, and services that benefit from the re-spending of trail user expenditures.

III.9. Contingent Valuation Analysis

The CV is used to assess the willingness of trail users to pay (Willingness to Pay WTP) for benefits related to the conservation and management of the LMT. The study implemented strategies to mitigate potential biases in respondents' WTP responses by asking participants about their trip expenditures and then about two voluntary willingness to pay as donation to the LMT Association to achieve its objectives in terms of trail management and conservations, as well as another voluntary fee to access the trail sections.

Mean WTP Calculations: The mean willingness to pay for donations to the LMTA was found to be 112.25 $ per user and per year, and for voluntary access fees, it was 5.10 $ per trail user and for one visit.

Optimistic Scenario WTP

Category	Mean WTP ($)	Response Rate (%)	Extrapolated Number of Users	Total WTP ($)
Donations to LMTA	112.25	89.8	124,048.2	$ 13,924,062.00
Voluntary Access Fees	5.10	58.5	80,840.4	$ 412,564.80
			Total	**$ 14,336,626.80**

Conservative Scenario WTP

Category	Mean WTP ($)	Response Rate (%)	Extrapolated Number of Users	Total WTP ($)
Donations to LMTA	112.25	89.8	62,024.1	$ 6,962,031.00
Voluntary Access Fees	5.10	58.5	40,420.2	$ 206,282.40
			Total	**$ 7,168,174.02**

III.10. Total Economic Value

To calculate the total economic value (TEV) of the LMT for the year 2023, the study summed the Contingent Valuation (CV), representing the perceived or expressed value of the LMT for the year 2023 with the Travel Cost (TC) reflecting the revealed actual expenditure per trail user (or per visit) for the year 2023. Therefore, **TEV = CV + TC**

Conservative Scenario

Category	Value ($)
Travel Cost (TC)	9,872,699.40
Contingent Valuation (CV)	7,168,174.00
Total Economic Value (TEV)	**17,040,873.40**

Optimistic Scenario

Category	Value ($)
Travel Cost (TC)	19,745,398.80
Contingent Valuation (CV)	14,336,626.80
Total Economic Value (TEV)	**34,082,025.60**

III.11. Cost Benefit Analysis

Drawing on welfare economics principles, a cost-benefit analysis (CBA) was conducted to evaluate the profitability of investing in the LMT in the year 2023. This analysis takes into account both private and social costs and benefits (equivalent to the Total Economic Value) to determine the impact of the investment on public welfare. The benefit-cost ratio (BCR) serves as a measure of the

investment's cost-effectiveness, with a BCR greater than one indicating that the investment is beneficial (Hölzinger and Dench, 2011).

Conservative Scenario: In the conservative scenario, the total economic value is $17,040,873.40. With an annual cost of $400,000 as estimated by the LMTA, the benefit-cost ratio (BCR) is 42.60. This means that for every $1 invested by the LMTA, there is a net benefit of 41.60$ generated by the LMT. Therefore, the investment in the LMT is highly profitable and provides significant social and economic returns even under conservative estimates.

Optimistic Scenario: In the optimistic scenario, the total economic value is higher, amounting to $34,082,025.60. Given the same annual cost of $400,000, the benefit-cost ratio (BCR) is 85.21. This indicates that every $1 invested in the LMT generates a net social and economic benefit of 84.21$. The optimistic scenario clearly shows an even greater economic impact and a more substantial return on investment.

IV. Recommendations

The economic assessment of the LMT highlights its pivotal role in local and national socio-economic dynamics, revealing substantial annual economic value through rigorous valuation methods. Our study estimates the trail's conservative total economic value at approximately 17,040,873.40 $ for the year 2023, with an optimistic projection reaching 34,082,025.60 $. These figures, juxtaposed against manageable annual costs of USD 400,000, result in compelling benefit-cost ratios (BCR) of 42.60 and 85.21 respectively. This indicates that each dollar invested in the LMT yields returns of 42.60 $ in a conservative scenario and 85.21 $ in an optimistic scenario, affirming the trail as a highly lucrative investment from a social and economic perspective.

The valuation methods employed include the Travel Cost Method to assess tourism expenditures and the Contingent Valuation Method to gauge willingness to pay for conservation and management. Notably, this study did not fully capture all economic impacts, such as induced economic effects, due to data limitations. Future research should enhance these valuations for a more comprehensive economic assessment.

The economic benefits primarily derive from the LMT's existence and sustainable management, which mitigate adverse impacts of unregulated tourism on natural resources. Tourism-related expenditures directly support the trail and its communities.

In summary, the economic valuation underscores the LMT's significant contribution to local economies and public welfare, supported by robust benefit-cost ratios that validate it as a valuable investment. To optimize these benefits sustainably, strategic investments, enhanced management practices, community education, responsible development policies, and ongoing research are essential. By adopting these approaches, the LMT can continue to enhance local well-being,

promote sustainable rural development, and safeguard its natural environment and cultural heritage for future generations.

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Annexes

Annex 1: Individual Trail Users Online Survey

This survey focuses on evaluating the economic and social effects associated with the Lebanon Mountain Trail (LMT). It falls under the "Reinforcing Sustainable Rural Tourism in Lebanon" Programme implemented by the Lebanon Mountain Association (LMTA) and with support from the Trade and Investment Facilitation Activity in Lebanon funded by the United States Agency for International Development. Your participation is crucial in providing insights into trail users' demographics, visitation trends, and spending behaviors, all of which are essential for a comprehensive examination of the direct economic impact of the LMT. The information collected will contribute to informed decision-making and help raise public awareness about the importance of conserving the LMT.

Please be assured that your responses will be handled confidentially, and the data presented in an aggregated and anonymous manner. Your time and input in this study are greatly appreciated, and your privacy is of utmost importance.

If you have any concerns or questions regarding this survey or the "Reinforcing Sustainable Rural Tourism in Lebanon" Program implemented by the Lebanon Mountain Association (LMTA), please feel free to contact us at info@lebanontrail.org.

Thank you for your invaluable contributions to this survey.

A. Screening question

1. Did you visit the Lebanon Mountain Trail (referred to as LMT in the rest of the survey) in 2023 for hiking or other activities?
   - ☐ Yes (if yes, go to question 2)
   - ☐ No (if no the survey ends)

2. In 2023, with whom did you visit the LMT (choose all valid answers)
   - ☐ On your own, in couple, or with a group of friends/relatives.
   - ☐ With a Tour Organizers
   - ☐ During the Thru Hike organized by the LMT Association (if only this answer is selected, the survey ends)

3. Select the LMT section(s) you have been to in 2023, **excluding the sections you hiked during the Thru Hike organized by the LMT Association.**
   When the section is selected, add a question about the number of times to be mentioned
   Mention the number of times you have been to this section in 2023

- ☐ Section 1A Aandqet – E Qoubaiyat Number of times _____
- ☐ Section 1 El Qoubaiyat – El Qammouaa Number of times _____
- ☐ Section 2 El Qammouaa – El Qemmamine Number of times _____
- ☐ Section 3 El Qemmamine – Kfar Bebnine Number of times _____
- ☐ Section 4 Kfar Bebine – Bqaa Sefrine Number of times _____
- ☐ Section 5 Bqaa Sefrine – Horsh Ehden Number of times _____
- ☐ Section 6 Horsh Ehden – Mar Antonios Qozhaiya Number of times _____
- ☐ Section 7 Mar Sntonios Qozhaiya – Bcharreh Number of times _____
- ☐ Section 8 Bcharreh – Bazaoun Number of times _____
- ☐ Section 9 Bazaoun – Tannourine El Faouqa Number of times _____
- ☐ Section 10 Tannourine El Faouqa – El Akoura Number of times _____
- ☐ Section 11 El Akoura- Afqa Number of times _____
- ☐ Section 12 Afqa – Faraya (Chabrouh) Number of times _____
- ☐ Section 13 Faraya – Kfardebiane Number of times _____
- ☐ Section 14 Kfardebiane – Baskinta Number of times _____
- ☐ Section 15 Baskinta – El Mtain Number of times _____
- ☐ Section 16 El Mtain – Falougha Number of times _____
- ☐ Section 17 Falougha – Ain Zhalta Number of times _____
- ☐ Section 18 Ain Zhalta – El Barouk Number of times _____
- ☐ Section 19 El Barouk – Maasser El Chouf Number of times _____
- ☐ Section 20 Maasser El Chouf – Niha Number of times _____
- ☐ Section 21 Niha – Jezzine Number of times _____
- ☐ Section 22 Jezzine – Aitanit Number of times _____
- ☐ Section 23 Aintanit – Majdel Balhis Number of times _____
- ☐ Section 24 Majdel Balhis – Rachaiya El Ouadi Number of times _____
- ☐ Section 25 Rachaya El Ouadi – Hasbaiya Number of times _____
- ☐ Section 26 Hasbaya – Marjayoun Number of times _____
- ☐ Baskinta Literary Trail Number of times _____
- ☐ Douma side trail Number of times _____
- ☐ Bchaaleh side trail Number of times _____

- ☐ Ehmej side trail Number of times _____
- ☐ Hammana – Falougha side trail Number of times _____
- ☐ Jezzine – Bkassine side trail Number of times _____
- ☐ Menjez Network Trail Number of times _____
- ☐ Ain Ebel Network Trail Number of times _____

4. Based on the selected LMT section(s) you visited (for hiking or other activities) in 2023 and the number of times you visited the section(s) (excluding your participation in the LMT Association Thru Walk), how much you estimate the total distance (in km) you travelled from your place of residence in Lebanon to the starting point of the LMT section(s) and back to your place of residence.
   Estimation of the total distance travelled to and from the LMT section(s) _____

5. Based on the selected LMT section(s) you visited (for hiking or other activities) in 2023 and the number of times you visited the section(s) (excluding your participation in the LMT Association Thru Walk), how much you estimate the total time you spent (in hours) to travel from your place of residence in Lebanon to the starting point of the LMT section(s) and back to your place of residence.
   Estimation of the total time needed to travel to and from the LMT section(s) _____

6. Based on the selected LMT section(s) you visited (for hiking or other activities) in 2023 and the number of times you visited the section(s) (excluding your participation in the LMT Association Thru Walk), how much you spent in terms of transportation cost (in USD per person) to travel from your place of residence in Lebanon to the starting point of the LMT section(s) and back to your place of residence.
   Estimation of the total transportation cost to travel to and from the LMT section(s)_____

B. Socio-Demographics

7. What is your nationality?
   - ☐ Lebanese
   - ☐ Foreigner, please specify: _____

8. What is your current place of residence?
   Country: _____
   City/town: _____

9. What is your gender?
   - ☐ Male
   - ☐ Female

10. Please identify your age group:
   - ☐ 18-25
   - ☐ 26-35
   - ☐ 36-45
   - ☐ 46-55
   - ☐ 56-65
   - ☐ More than 65

11. What is your marital status?
   - ☐ Single
   - ☐ Married
   - ☐ Widowed
   - ☐ Divorced

12. What is your employment status?
   - ☐ Student
   - ☐ Public Sector Employee
   - ☐ Private Sector Employee
   - ☐ Freelancer
   - ☐ Part-timer
   - ☐ Not currently working
   - ☐ Retired

13. Please identify your current monthly income:
   - ☐ < 1,000 USD
   - ☐ 1,000 to 2,000 USD
   - ☐ 2,001 to 3,000 USD
   - ☐ 3,001 to 4,000 USD
   - ☐ 4,001 to 4,000 USD
   - ☐ 5,001 to 6,000 USD
   - ☐ More than 6,000 USD

C. LMT visit characteristics

Please answer all following questions involving your visits (for hiking or other activities) to the LMT section(s) done in 2023 On your own, in couple, with a group of friends/relatives, and with Tour Organizers, and EXCLUDING the Thru Hike organized by the LMT Association if you took part in it in 2023.

14. What was the main purpose of your visit to the LMT section(s)?
(You can select more than one answer)

- ☐ Recreational hiking
- ☐ Long distance trekking
- ☐ Trail running
- ☐ Mountain biking
- ☐ Snowshoeing
- ☐ Birdwatching
- ☐ Horseback riding
- ☐ Pet walking
- ☐ Other, mention: _____

15. What are the main reasons for your visit to the LMT section(s)?
(You can select more than one answer)

- ☐ Tourism and recreation
- ☐ Sports and fitness
- ☐ Health and exercise
- ☐ Nature and culture discovery
- ☐ Studies and research
- ☐ Work
- ☐ Other, mention: _____

16. During which season(s) did you visit the LMT section(s)?
(You can select more than one answer)

- ☐ Winter
- ☐ Spring
- ☐ Summer
- ☐ Autumn
- ☐ All seasons

17. Did you visit the LMT section(s) during?

- ☐ Week day (Monday to Friday)
- ☐ Weekend (Saturday-Sunday)
- ☐ Both

18. How much time did you stay on average on each LMT section?

- ☐ Less than 1 hour
- ☐ 1 hour to 3 hours
- ☐ 3 hours to 5 hours
- ☐ 5 hours to 7 hours
- ☐ 7 hours to 9 hours

19. Select the duration of your stay(s) in the area where you visited the LMT section(s).

Add a question about the number of times to be mentioned for the selected answers

- ☐ One full day Number of times_____
- ☐ 2 days and 1-night Number of times_____
- ☐ 3 days and 2 nights Number of times_____
- ☐ More than 3 days and 2 nights Number of times_____

20. Select with whom you visited the LMT section(s)

Add a question about the number of times to be mentioned for the selected answers

- ☐ Alone Number of times_____
- ☐ In couple Number of times_____
- ☐ Small group of friends/relatives (3 to 8 people) Number of times_____
- ☐ Large group of friends/relatives (9 to 15 people) Number of times_____
- ☐ With a Tour Organizers, mention the name(s) Number of times_____

If last option selected go to question 20.a, if not go to question 21

20.aMention the name(s) of Tour Organizers:

_____

D. Spending Pattern

Please answer all following questions involving your visits (for hiking or other activities) to the LMT section(s) done in 2023 On your own, in couple, with a group of friends/relatives, and with Tour Organizer(s), and EXCLUDING the thru walk organized by the LMT Association if you took part in it in 2023.

By villages close to the LMT we mean villages where sections start or end, and villages through which the LMT passes and that you can access on foot from the trail for less than 30 minutes, or by car for less than 10 minutes.

21. What was your total spending (**average per person**) for one full day visit to a LMT section? Please provide your answer in USD_____

22. What was your total spending (**average per person**) for 2-days and 1 overnight visit to a LMT section? Please provide your answer in USD_____

23. Did you hire local guides for your visit(s) to the LMT section(s)?

- ☐ Yes (if yes, go to question 24)
- ☐ No (if no, go to question 25)

24. How many times you hired local guides for your visit(s) to the LMT section(s), and how much you paid the local guide(s) on average? Please provide your answer in USD

Number of time I hired local guides for half day (3 to 5 hours) _____
Fees paid to local guide for half day (3 to 5 hours) _____

Number of time I hired local guides for full day (5 to 8 hours) _____
Fees paid to local guide for full day (5 to 8 hours) _____

25. Did you stay for an overnight in a commercial accommodation facility in village(s) close to the LMT?

- ☐ Yes (if yes, go to question 26)
- ☐ No (if no, go to question 28)

26. Select the most common accommodation facilities you used during your overnights in village(s) close to the LMT?

- ☐ Hotel
- ☐ Mountain Hostel (Auberge)
- ☐ Youth Hostel

- ☐ Mountain chalet
- ☐ Furnished apartment
- ☐ Guesthouse
- ☐ Airbnb
- ☐ Mountain resort and bungalows
- ☐ Religious accommodation
- ☐ Camping

27. How much you spent in total per person for your overnights in accommodation facilities in village(s) close to the LMT? Please provide your answer in USD based on Bed & Breakfast service?
    Total accommodation cost per person _____

28. Did you have meals (lunch or dinner) in commercial facilities (guesthouses, hotels, restaurants, snacks, camping, winery, etc.) in village(s) close to the LMT?
    - ☐ Yes (if yes, go to question 29)
    - ☐ No (if no, go to question 30)

29. How much you spent in total per person for meals (lunch and dinner) in commercial facilities (guesthouses, hotels, restaurants, snacks, camping, winery, etc.) in village(s) close to the LMT? Please provide your answer in USD
    Total meals cost per person _____

30. Did you buy locally produced items (alcoholic beverages, traditionally preserved food, honey, crafts) in village(s) close to the LMT?
    - ☐ Yes (if yes, go to question 31)
    - ☐ No (if no, go to question 32)

31. How much you spent in total to buy locally produced items (alcoholic beverages, thyme, traditionally preserved food, honey, crafts, souvenirs) in village(s) close to the LMT? Please provide an approximate value in USD
    Total amount spent to buy locally produced items _____

32. Did you rent any equipment/tools such as mountain bikes, snowshoes, skis, tents, and other camping equipment for your trail related activities in village(s) close to the LMT?
    - ☐ Yes (if yes, go to question 33)
    - ☐ No (if no, go to question 34)

33. How much you spent in total on equipment/tools rental such as mountain bikes, snowshoes, skis, tents, and other camping equipment for your trail related activities in village(s) close to the LMT? Please provide an approximate value in USD
Total amount spent to rent equipment/tools per person _____

34. Did you use any transportation services such as local taxi, mini bus, or truck to move inside or between the villages close to the LMT or to transport your luggage?
- Yes (if yes, go to question 35)
- No (if no, go to question 36)

35. How much you spent in total on transportation services such as local taxi, mini bus, or truck to move inside or between the villages close to the LMT or to transport your luggage? Please provide an approximate value in USD
Total amount spent on local transportation _____

36. Did you buy local bakery products, locally produced snacks and candies, locally produced ice cream, and locally produced beverages from small local shops, or snacks, or bakeries in village(s) close to the LMT?
- Yes (if yes, go to question 56)
- No (if no, go to question 57)

37. How much you spent in total to buy local bakery products, locally produced snacks and candies, locally produced ice cream, and locally produced beverages from small local shops, or snacks, or bakeries in village(s) close to the LMT? Please provide an approximate value in USD. Total amount spent to buy locally produced items _____

38. Did you visit nature reserves during the visits to the LMT?
- Yes (if yes, go to question 39)
- No (if no, go to question 40)

39. How much you spent in total on entrance fees to nature reserves? Please provide an approximate value in USD
Total amount spent to access nature reserves _____

40. Did you include in your visits to the LMT visits to museums, archeological sites and other tourist attractions in village(s) close to the LMT?
- Yes (if yes, go to question 41)
- No (if no, go to question 42)

41. How much you spent in total to visit museums, archeological sites and other attractions in village(s) close to the LMT? Please provide an approximate value in USD
Total amount spent to access museums, archeological sites and other tourist attractions _____

E. Trail Value

42. Did you make any donation or contribution for the LMT Association to management, maintain and protect the trail natural and cultural resources in 2023?
- ☐ Yes (if yes, go to question 58)
- ☐ No (if no, go to question 59)

43. What was the total amount you donated to the LMT Association to management and maintain the trail in 2023? Please provide your answer in USD_____

44. How much are you willing to voluntary donate to the LMT Association to manage, maintain and protect the trail natural and cultural resources in 2024?
- ☐ I am not willing to donate
- ☐ 25 $ per year
- ☐ 50 $ per year
- ☐ 100 $ per year
- ☐ 200 $ per year
- ☐ 500 $ per year
- ☐ More than 500 $ per year, mention the amount please: _____

45. Would you pay a voluntary contribution fee that will go for the LMT management and protection each time you access one of the trail sections?
- ☐ Yes (if yes, go to question 42)
- ☐ No

46. How much are you willing to voluntary pay as contribution fee that will go for the LM management and protection each time you access one of the trail sections?
I am not willing to donate
- ☐ 2 $
- ☐ 5 $
- ☐ 7 $
- ☐ 10 $
- ☐ More, mention the amount please: _____

Annex 2: Key Informant Interview for Service providers

This survey focuses on evaluating the economic and social effects associated with the Lebanon Mountain Trail (LMT). It falls under the "Reinforcing Sustainable Rural Tourism in Lebanon" Programme implemented by the Lebanon Mountain Association (LMTA) and with support from the Trade and Investment Facilitation Activity in Lebanon funded by the United States Agency for International Development. Your participation is crucial in providing insights into trail users' demographics, visitation trends, and spending behaviors, all of which are essential for a comprehensive examination of the direct economic impact of the LMT. The information collected will contribute to informed decision-making and help raise public awareness about the importance of conserving the LMT.

Please be assured that your responses will be handled confidentially, and the data presented in an aggregated and anonymous manner. Your time and input in this study are greatly appreciated, and your privacy is of utmost importance.

If you have any concerns or questions regarding this survey or the "Reinforcing Sustainable Rural Tourism in Lebanon" Programme implemented by the Lebanon Mountain Association (LMTA), please feel free to contact us at info@lebanontrail.org.

Thank you for your invaluable contributions to this survey.

A. Service Provider Profile

By villages close to the LMT we mean villages where sections start or end, and villages through which the LMT passes and that you can access on foot from the trail for less than 30 minutes, or by car for less than 10 minutes.

1. Village _____
2. LMT Section(s) _____
3. Are you a permanent resident in your village?
   - ☐ Yes
   - ☐ No (if selected, please specify your other place of residence _____)
4. Gender
   - ☐ Male
   - ☐ Female

5. Age category
   - ☐ 18-25
   - ☐ 26-35
   - ☐ 36-45
   - ☐ 46-55
   - ☐ 56-65
   - ☐ More than 65

6. Marital status?
   - ☐ Single
   - ☐ Married
   - ☐ Widowed
   - ☐ Divorced

7. Number of household members _____

8. Household monthly income
   - ☐ < 1,000 USD
   - ☐ 1,000 to 2,000 USD
   - ☐ 2,001 to 3,000 USD
   - ☐ 3,001 to 4,000 USD
   - ☐ 4001 to 5,000 USD
   - ☐ More than 5,000 USD

9. Main occupation/source of income _____

10. What is your main tourism related business/activity? _____

11. Which of the following services do you provide in your village or along the LMT sections?
   - ☐ Local guiding (if selected, identify the type _____)
   - ☐ Accommodation (if selected, identify the type _____)
   - ☐ F&B services (if selected, identify the type _____)
   - ☐ Sports equipment rental (if selected, identify the type _____)
   - ☐ Experiential activities (if selected, identify the type _____)
   - ☐ Local transportation (if selected, identify the type _____)
   - ☐ Sales of local products (if selected, identify the type _____)
   - ☐ Other (if selected, please specify _____)

12. Since when do you provide tourism services in villages close to the LMT or along the LMT sections?

Type of Service	*Since (year)*
_____	_____
_____	_____
_____	_____
_____	_____

13. Do you have any legal status or official registration?

☐ Yes (if selected, identify the type _____)

☐ No

14. How many employees do you have in your tourism related business?

Permanent _____

Part time _____

B. LMT visitors and visit patterns

Please answer all following questions considering only the year 2023

15. Can you estimate how many people did visit the LMT sections in your area?

Section	Estimated total number of visitors
_____	_____
_____	_____
_____	_____

16. In your opinion, how much a LMT visitor spends on average for tourism services and activities when visiting the LMT and neighboring villages? Please provide an approximate value in USD

☐ For one day trips _____

☐ For 2-days and 1 overnight trips _____

☐ For Multi-day trips _____

17. Can you estimate how much in percentage from this total number of visitors come to your village or the neighboring villages to get services such as F&B, accommodation, buy local products, etc.

_____

18. When do they usually visit the LMT

☐ Weekdays _____

☐ Weekend _____

19. During which season(s) they visit the LMT mostly?
(You can select more than one answer)

- ☐ Winter
- ☐ Spring
- ☐ Summer
- ☐ Autumn
- ☐ All seasons

C. Service provision and income

20. What was the yearly income generated by the tourism services you provide in your village, and how much is attributed to services provided to LMT visitors?

Service	*Average yearly income in USD*	*% attributed to LMT visitors*
☐ Local guiding	_____	_____
☐ Accommodation	_____	_____
☐ F&B services	_____	_____
☐ Sports equipment rental	_____	_____
☐ Experiential activities	_____	_____
☐ Local transportation	_____	_____
☐ Sales of local products	_____	_____
☐ Other	_____	_____

21. What were the main age categories you hosted among people visiting the LMT?
(You can select more than one answer)

- ☐ 3 to 7 years-old
- ☐ 8 to 15 year-old
- ☐ 16 to 25 year-old
- ☐ 26 to 35 year-old
- ☐ 36 to 45 year-old
- ☐ 46 to 55 year-old
- ☐ 56 to 65 year-old
- ☐ More than 65 year-old

22. Estimate in percentage their distribution in terms of nationality

Nationality	%
☐ Lebanese residing in Lebanon	___
☐ Lebanese expats visiting Lebanon for short duration	___
☐ Expats living in Lebanon	___

- ☐ Foreigners visiting Lebanon for vacation ___

23. Estimate in percentage their distribution in terms of group profile

Profile	%
☐ Solo travelers	___
☐ Couples	___
☐ Groups of friends and families	___
☐ People coming with LMT guides	___
☐ People coming with Travel agencies	___
☐ People coming with Tour operators	___
☐ People coming with Certified national guides	___
☐ People coming with Unofficial Tour Organizers/guides	___
☐ School/university students coming with organized tours	___

D. Trail Value

24. Did you make any donation as Local Tourism Service Provider to the LMT Association in 2023 to manage and maintain the trail, and to protect the trail natural and cultural resources?

- ☐ Yes (if yes, go to question 25)
- ☐ No (if no, go to question 26)

25. What was the total amount you donated to the LMT Association to management and maintain the trail in 2023? Please provide your answer in USD _____

26. How much are you willing to voluntary donate as Local Tourism Service Provider to the LMT Association to manage, maintain and protect the trail in 2024?

- ☐ I am not willing to donate
- ☐ 100 $ per year
- ☐ 250 $ per year
- ☐ 500 $ per year
- ☐ 1,000 $ per year
- ☐ 1,500 $ per year
- ☐ More than 1,500 $ per year, mention the amount please: _____

27. Would you pay as Local Tourism Service Provider a voluntary contribution fee that will go for the LMT management and protection each time you access one of the trail sections?

- ☐ Yes (if yes, go to question 28)

- ☐ No

28. How much are you willing to voluntary pay as contribution fee that will go for the LMT management and protection each time you access one of the trail sections?
    I am not willing to donate
    - ☐ 5 $
    - ☐ 10 $
    - ☐ 20 $
    - ☐ 40 $
    - ☐ More than 40$, mention the amount please: _____

Annex 3: Tour Operators and Tour Organizers Online Survey

This survey focuses on evaluating the economic and social effects associated with the Lebanon Mountain Trail (LMT). It falls under the "Reinforcing Sustainable Rural Tourism in Lebanon" Programme implemented by the Lebanon Mountain Association (LMTA) and with support from the Trade and Investment Facilitation Activity in Lebanon funded by the United States Agency for International Development. Your participation is crucial in providing insights into trail users' demographics, visitation trends, and spending behaviors, all of which are essential for a comprehensive examination of the direct economic impact of the LMT. The information collected will contribute to informed decision-making and help raise public awareness about the importance of conserving the LMT.

Please be assured that your responses will be handled confidentially, and the data presented in an aggregated and anonymous manner. Your time and input in this study are greatly appreciated, and your privacy is of utmost importance.

If you have any concerns or questions regarding this survey or the "Reinforcing Sustainable Rural Tourism in Lebanon" Programme implemented by the Lebanon Mountain Association (LMTA), please feel free to contact us at info@lebanontrail.org.

Thank you for your invaluable contributions to this survey.

E. Screening question and business profile

1. What is the status of your Tour Organization agency?
    - ☐ Registered company
    - ☐ Registered travel agency
    - ☐ Association
    - ☐ Not registered

2. Since when you organize nature-based trips in Lebanon? (Mention the year) _____

3. How many permanent employees you have in your business? _____

4. How many part time employees you have in your business? _____

5. How many rural tourism and nature-based trips including activities such as hiking, trail running, snowshoeing you organized in 2023? _____

6. Did you organize trips on the Lebanon Mountain Trail (referred to as LMT in the rest of the survey) in 2023?
   - ☐ Yes (if yes, go to question 7)
   - ☐ No (if no the survey ends)

7. Select the top 5 factors that influenced your choice of the LMT section(s) for organizing trips in 2023?
   - ☐ Distance and duration to arrive to the starting point of the trail
   - ☐ Transportation cost
   - ☐ Accessibility and road conditions
   - ☐ Trail section length and difficulty level
   - ☐ Trail sceneries
   - ☐ Trail ecosystem characteristics
   - ☐ Trail maintenance and infrastructure quality, including blazing
   - ☐ Trail safety
   - ☐ Availability of tourism services next to the trail (accommodation and F&B)
   - ☐ Quality of tourism services next to the trail (accommodation and F&B)
   - ☐ Availability of local guides
   - ☐ Availability of cultural heritage attractions along the trail
   - ☐ Availability of cultural heritage attractions in the villages close to the trail
   - ☐ Availability of activities and experiences along the trail
   - ☐ Availability of activities and experiences in the villages close to the trail
   - ☐ Trail themes
   - ☐ Security issues

8. Select the LMT section(s) to which you organized trips in in 2023
   When the section is selected add a question about the number of times to be mentioned
   Mention the number of times you have been to this section in 2023

- Section 1A Aandqet – E Qoubaiyat
- Section 1 El Qoubaiyat – El Qammouaa
- Section 2 El Qammouaa – El Qemmamine
- Section 3 El Qemmamine – Kfar Bebnine
- Section 4 Kfar Bebine – Bqaa Sefrine
- Section 5 Bqaa Sefrine – Horsh Ehden
- Section 6 Horsh Ehden – Mar Antonios Qozhaiya
- Section 7 Mar Sntonios Qozhaiya – Bcharreh
- Section 8 Bcharreh – Bazaoun
- Section 9 Bazaoun – Tannourine El Faouqa
- Section 10 Tannourine El Faouqa – El Akoura
- Section 11 El Akoura- Afqa
- Section 12 Afqa – Faraya (Chabrouh)
- Section 13 Faraya – Kfardebiane
- Section 14 Kfardebiane – Baskinta
- Section 15 Baskinta – El Mtain
- Section 16 El Mtain – Falougha
- Section 17 Falougha – Ain Zhalta
- Section 18 Ain Zhalta – El Barouk
- Section 19 El Barouk – Maasser El Chouf
- Section 20 Maasser El Chouf – Niha
- Section 21 Niha – Jezzine
- Section 22 Jezzine – Aitanit
- Section 23 Aintanit – Majdel Balhis
- Section 24 Majdel Balhis – Rachaiya El Ouadi
- Section 25 Rachaya El Ouadi – Hasbaiya
- Section 26 Hasbaya – Marjayoun
- Baskinta Literary Trail
- Douma side trail
- Bchaaleh side trail
- Ehmej side trail
- Hammana – Falougha side trail
- Jezzine – Bkassine side trail
- Menjez Network Trail
- Ain Ebel Network Trail

F. Trip structure

Please answer all following questions involving your visits to the LMT section(s) done in 2023. By villages close to the LMT we mean villages where sections start or end, and villages through which the LMT passes and that you can access on foot from the trail for less than 30 minutes, or by car for less than 10 minutes.

9. Based on the selected LMT section(s) to which you organized trips in 2023 and the number of times you visited the section(s), how much you estimate the total distance (in km) you travelled from your meeting point in Lebanon to the starting point of the LMT section(s) and back to your meeting point.
   Estimation of the total distance travelled to the LMT section(s) and back _____

10. Based on the selected LMT section(s) to which you organized trips 2023 and the number of times you visited the section(s), how much you estimate the total time spent (in hours) to travel from your meeting point in Lebanon to the starting point of the LMT section(s) and back to your meeting point.
    Estimation of the total time needed to travel to the LMT section(s) and back _____

11. Based on the selected LMT section(s) to which you organized trips 2023 and the number of times you visited the section(s), how much you spent in terms of transportation cost (in USD per trip) to travel from your meeting point in Lebanon to the starting point of the LMT section(s) and back to your meeting point. Estimation of the transportation cost to travel to the LMT section(s) and back _____

12. What is the main type of trips you organized on the LMT?
    - ☐ One day trips
    - ☐ 2-days and 1 overnight trips
    - ☐ Multi-day trips

13. For what purposes did you organize trips on the LMT?
    (You can select more than one answer)
    - ☐ Tourism and recreation
    - ☐ Sports and fitness
    - ☐ Health and exercise
    - ☐ Nature and culture discovery
    - ☐ Studies and research
    - ☐ Work
    - ☐ Other, mention: _____

14. What activities did you include in your trips on the LMT?
(You can select more than one answer)

- ☐ Recreational hiking
- ☐ Long distance trekking
- ☐ Trail running
- ☐ Mountain biking
- ☐ Snowshoeing
- ☐ Birdwatching
- ☐ Horseback riding
- ☐ Pet walking
- ☐ Other, mention: _____

15. During which season(s) did you organize trips on the LMT?
(You can select more than one answer)

- ☐ Winter
- ☐ Spring
- ☐ Summer
- ☐ Autumn
- ☐ All seasons

16. What was the average duration of the time spent on the LMT?

- ☐ Less than 2 hours
- ☐ 2 to 4 hours
- ☐ 4 to 6 hours
- ☐ 6 to 8 hours
- ☐ 8 to 10 hours

17. What was the average group size of your organized trips on the LMT?
(Number of people on average per trip) _____

18. What were the main age categories who joined your organized trips on the LMT?
(You can select more than one answer)

- ☐ 3 to 7 years-old
- ☐ 8 to 15 year-old
- ☐ 16 to 25 year-old
- ☐ 26 to 35 year-old
- ☐ 36 to 45 year-old

- ☐ 46 to 55 year-old
- ☐ 56 to 65 year-old
- ☐ More than 65 year-old

19. Estimate in percentage the distribution of your clients who participated in the trips organized on the LMT?

Profile	%
☐ Lebanese residing in Lebanon	___
☐ Lebanese expats visiting Lebanon for short duration	___
☐ Expats living in Lebanon	___
☐ Foreigners visiting Lebanon for vacation	___

G. Spending value

20. What is the average fee per client for your trips organized on the LMT?
Please provide an approximate value in USD

- ☐ For one day trips _____
- ☐ For 2-days and 1 overnight trips _____
- ☐ For Multi-day trips _____

21. Did you hire local guides for the trips organized on the LMT?

- ☐ Yes (if yes, go to question 22)
- ☐ No (if no, go to question 23)

22. How many times you hired local guides for the trips organized on the LMT, and how much you paid the local guide(s) on average? Please provide your answer in USD

Number of time I hired local guides for half day (3 to 5 hours) _____
Fees paid to local guide for half day (3 to 5 hours) _____
Number of time I hired local guides for full day (5 to 8 hours) _____
Fees paid to local guide for full day (5 to 8 hours) _____

23. Did you include overnights in a commercial accommodation facility in villages close to the LMT during the trips?

- ☐ Yes (if yes, go to question 24)
- ☐ No (if no, go to question 26)

24. Select the most common accommodation facilities you used in villages close to the LMT?
    - ☐ Hotel
    - ☐ Mountain Hostel (Auberge)
    - ☐ Youth Hostel
    - ☐ Mountain chalet
    - ☐ Furnished apartment
    - ☐ Guesthouse
    - ☐ Airbnb
    - ☐ Mountain resort and bungalows
    - ☐ Religious accommodation
    - ☐ Camping

25. How much you spent in total for overnights in accommodation facilities in village(s) close to the LMT? Please provide your answer in USD based on Bed & Breakfast service?
    Total spending on accommodation _____

26. Did you provide meals (lunch or dinner) in commercial facilities (guesthouses, hotels, restaurants, snacks, camping, winery, etc.) in village(s) close to the LMT during the trips?
    - ☐ Yes (if yes, go to question 27)
    - ☐ No (if no, go to question 28)

27. How much you spent in total for meals (lunch and dinner) in commercial facilities (guesthouses, hotels, restaurants, snacks, camping, winery, etc.) in village(s) close to the LMT? Please provide your answer in USD. Total spending on meals _____

28. Do you know if your clients buy locally produced items (bakery products, local snacks and candies, locally produced ice cream, locally produced beverages, thyme, traditionally preserved food (Mouneh), honey, crafts, souvenirs) from farmers, local producers, cooperatives, small local shops, or snacks, or bakeries in village(s) close to the LMT during the trips?
    - ☐ Yes (if yes, go to question 29)
    - ☐ No (if no, go to question 30)

29. How much you estimate the total value spent by your clients to buy locally produced items (bakery products, local snacks and candies, locally produced ice cream, locally produced beverages, thyme, traditionally preserved food (Mouneh), honey, crafts, souvenirs) from farmers, local producers, cooperatives, small local shops, or snacks, or bakeries in village(s) close to the LMT?

Please provide an approximate value in USD
Total amount spent by clients to buy locally produced items _____

30. Did you rent any equipment/tools such as mountain bikes, snowshoes, skis, tents, and other camping equipment for your trail related activities in village(s) close to the LMT?
- ☐ Yes (if yes, go to question 31)
- ☐ No (if no, go to question 32)

31. How much you spent in total on equipment/tools rental such as mountain bikes, snowshoes, skis, tents, and other camping equipment for your trail related activities in village(s) close to the LMT? Please provide an approximate value in USD
Total amount spent to rent equipment/tools per person _____

32. Did you use any local transportation services (except your main transportation leaving from initial meeting point) such as local taxi, mini bus, or truck to move inside or between the villages close to the LMT or to transport your clients' luggage?
- ☐ Yes (if yes, go to question 33)
- ☐ No (if no, go to question 34)

33. How much you spent in total on transportation services such as local taxi, mini bus, or truck to move inside or between the villages close to the LMT or to transport your clients' luggage? Please provide an approximate value in USD
Total amount spent on local transportation _____

34. Did you visit nature reserves during the trips to the LMT?
- ☐ Yes (if yes, go to question 35)
- ☐ No (if no, go to question 36)

35. How much you spent in total on entrance fees to nature reserves?
Please provide an approximate value in USD
Total amount spent to access nature reserves _____

36. Did you include in your trips to the LMT visits to museums, archeological sites and other tourist attractions in village(s) close to the LMT?
- ☐ Yes (if yes, go to question 37)
- ☐ No (if no, go to question 38)

37. How much you spent in total to visit museums, archeological sites and other attractions in village(s) close to the LMT? Please provide an approximate value in USD. Total amount spent to access museums, archeological sites and other tourist attractions _____

H. Trail Value

38. Did you make any donation as Tour Operator/Tour Organizer to the LMT Association in 2023 to manage and maintain the trail, and to protect the trail natural and cultural resources?
- ☐ Yes (if yes, go to question 39)
- ☐ No (if no, go to question 40)

39. What was the total amount you donated to the LMT Association to manage and maintain the trail in 2023? Please provide your answer in USD _____

40. How much are you willing to voluntary donate as Tour Operator/Tour Organizer to the LMT Association to manage, maintain and protect the trail in 2024?
- ☐ I am not willing to donate
- ☐ 100 $ per year
- ☐ 250 $ per year
- ☐ 500 $ per year
- ☐ 1,000 $ per year
- ☐ 1,500 $ per year
- ☐ Will donate an % of my yearly profit on the LMT, specify: _____

41. Would you pay as Tour Operator/Tour Organizer a voluntary contribution fee that will go for the LMT management and protection each time you access one of the trail sections?
- ☐ Yes (if yes, go to question 42)
- ☐ No

42. How much are you willing to voluntary pay as contribution fee that will go for the LMT management and protection each time you access one of the trail sections?
I am not willing to donate
- ☐ 5 $
- ☐ 10 $
- ☐ 20 $
- ☐ 40 $
- ☐ More than 40$, mention the amount please: _____