METHODOLOGICAL APPROACH TO MEASURE THE CONTRIBUTION OF LANDSCAPE IN SERVICES PROVIDED BY RURAL TOURISM

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ABSTRACT

In the last years the importance of landscape in supporting rural economy and the quality of life in rural areas has been increasingly recognized. Hence the interest of policy makers in identifying and designing suitable policy instruments for enhancing the potential benefits that the maintenance and valorization of landscapes may provide to the rural economy.

In this context, this working paper provides a qualitative analysis of the specific functions of landscape, and of the mechanisms through which targeted rural development instruments could generate beneficial leverage effects on rural economies. Starting from the commonly agreed definition of "landscape" and its multifunctional nature, its economic value and the theoretical framework of landscape and regional development are then considered, in view of identifying the main potential socio-economic benefits for the rural economy attached to their provision. Further an overview of concrete examples (from literature review) of applied methods for assessing the socio-economic value of landscapes is provided, and also the effects of tourism practices and eco-systems on the value of landscape are considered in more details.

KEYWORDS: landscape, rural tourism sector, landscape services, landscape values, landscape management

JEL: J43, O18, P32

INTRODUCTION

In the last years the importance of landscape in supporting rural economy and the quality of life in rural areas has been increasingly recognized. Hence the interest of policy makers in identifying and designing suitable policy instruments for enhancing the potential benefits that the maintenance and valorization of landscapes may provide to the rural economy.

In this context, this working paper provides a qualitative analysis of the specific functions of landscape, and of the mechanisms through which targeted rural development instruments could generate beneficial leverage effects on rural economies. This paper is based on literature research, and is part of the analytical work developed to support the preparation methodological approach, part of activities of project КП-06-Н65/11 – 12.12.2022

Landscape and tourism are connected in terms as key objectives in landscape planning and management in some rural areas specialized in providing tourism services. All of this calls for careful evaluation of the effects of territory on the tourism. In recent years there has been significant interest in landscape management as a tool for development of particular industry or economic sector (Heijman and Hubregtse, 2002); (Vollet and Arlot, 2006); (Dissart, 2009); Waltert, 2009). Therefore, alterations in the landscape can bring about significant demographic and economic change in rural regions (Waltert, 2009). Proper combination of the realities of the landscape of a region with opportunities for economic development may lead to rapid and multiplier effect (Dissart, 2009). Realities of the landscape of a given territory, can add value to the products in agriculture and tourism (Cahill, 2001a); (Brouwer, 2004); (Marangon and Tempesta, 2008); (Gupta and Mythili, 2009); Trevisan and Mauracher, 2006).

In Bulgaria rural tourism occupy a large part of the working population and are the main alternatives to the economic development of the rural areas (Nikolov et al., 2012). Perception of landscape as an essential tool for achieving competitiveness in a particular economic sector is not a popular approach among studies in the countries of Eastern Europe.

RESULTS AND DISCUSSION

What does it mean – "landscape". The study of landscape is inherently complex, due to its multifaceted character, its relatively recent importance, and the difficulty to find a commonly agreed definition. One accepted starting point is the etymology of the word "landscape", which comes from the Dutch word *landschap*, from *land* (directly equivalent to the English word land) and the suffix -*schap*, corresponding to the English suffix "-ship". The word "landscape", first recorded in 1598, was borrowed as a painters' term from Dutch during the 16th century, when Dutch artists were on the verge of becoming masters of the landscape genre. The Dutch word *landschap* had earlier meant simply 'region, tract of land' but had acquired the artistic sense, which it brought over into English, of 'a picture depicting scenery on land'.

A first set of elements to be considered when studying landscape and its impacts can be: artificial surfaces, arable land, permanent crops, pastures, heterogeneous agricultural areas, forests, mineral surfaces, natural vegetation, water bodies, etc… In its environmental acceptation, it has been defined as: "a mosaic of land cover patches", or "the traits, patterns, and structure of a specific geographic area, including its biological composition, its physical environment, and its anthropogenic or social patterns. An area where interacting ecosystems are grouped and repeated in similar form" (US Environmental protection Agency).

Another interesting approach is the one stating: "Landscape comprises the visible features of an area of land, including physical elements such as landforms, living elements of flora and fauna, abstract elements such as lighting and weather conditions, and human elements, for instance human activity or the built environment".

These definitions are helpful in identifying some aspects: physical and abstract elements, biological composition and human intervention, visual features and functionalities. All of these elements are of extreme importance if we want to explain what landscape is, and which is its potential usefulness and socio-economic value.

The effort to reach a commonly agreed understanding of the concept of landscape has been deployed across a wide range of academic and regulatory activities. The regulatory framework and the policy debate about the subject have been developing a lot in the last two decades.

In 1992 the World Heritage Convention of UNESCO became the first international legal instrument to recognise and protect cultural landscapes. It acknowledged that cultural landscapes represent the "combined works of nature and of man" (Art.1 of the Convention),

and that they are illustrative of the evolution of human society and settlement over time, under the influence of the physical constraints and/or opportunities presented by their natural environment and of successive social, economic and cultural forces, both external and internal.

In the World Heritage Convention, the term "cultural landscape" embraces a diversity of manifestations of the interaction between humankind and its natural environment. Cultural landscapes often reflect specific techniques of sustainable land-use, considering the characteristics and limits of the natural environment they are established in, and a specific spiritual relation to nature. Protection of cultural landscapes can contribute to modern techniques of sustainable land-use and can maintain or enhance natural values in the landscape. The continued existence of traditional forms of land-use supports biological diversity in many regions of the world. The protection of traditional cultural landscapes is therefore helpful in maintaining biological diversity. This was an important first recognition of the role and of the relevance of landscape, as well as a good attempt to define it.

In 1994, the Resolution adopted on the 3rd Conference of Mediterranean Regions launched the initiative "to draw up, on the basis of the Mediterranean Landscape Charter – adopted in Seville by the regions of Andalusia (Spain), Languedoc-Roussillon (France) and Tuscany (Italy) – a framework convention on the management and protection of the natural and cultural landscape of Europe as a whole". One year later, the European Union's European Environment Agency published "Europe's Environment: the Dobris Assessment", an in-depth analysis of the state of the art and prospects for the environment in the greater Europe. Chapter 8 deals with landscapes, and in its conclusions it sets the basis for the drawing up of a European convention on rural landscapes.

In 1995 the World Conservation Union (IUCN) published a text advocating an international convention on rural landscape protection in Europe. The Council of Europe set up an ad hoc drafting group and several international, national and regional bodies and programmes were invited to take part in its work. Among these were the European Commission, the Committee of Regions, the Parliamentary Assembly and the Cultural Heritage Committee of the Council of Europe (CC-PAT), the Committee for the activities of the Council of Europe in the field of biological and landscape diversity (CO-DBP), the Unesco World Heritage Committee, the IUCN, and the Bureau for the Pan-European Biological and Landscape Diversity Strategy and the Regions of Andalusia (Spain), Languedoc-Roussillon (France) and Tuscany (Italy).

The existing national and international legal instruments in this field were taken as a basis for the drawing up the Convention. These include the UNESCO Convention concerning the Protection of the World Cultural and Natural Heritage, the Convention for the Protection of the Architectural Heritage of Europe, the Convention on the Conservation of European Wildlife and Natural Habitats, the European Convention for the Protection of the Archaeological Heritage, the Mediterranean Landscape Charter, the European Community regulation on agricultural production methods compatible with the requirements of the protection of the environment and the maintenance of the countryside, the European Community directive on the conservation of natural habitats and of wild fauna and flora, the European Community directive on the assessment of environmental effects, and other important national, European Community and international instruments.

A consultation conference for ministerial representatives and major international and non-governmental organizations with technical expertise in landscape matters was organised in Florence (Italy) in 1998, and in October 2000, the Council of Europe adopted a "European Landscape Convention" as part of its work on natural and cultural heritage, spatial planning and the environment, and based on the concern for sustainable development expressed at the Rio Conference in 1992. This Convention seems to be a good starting point towards a complete,

clear and accepted definition of "landscape". It was adopted in October 2000 and came into force in March 2004 (Council of Europe Treaty Series Nº176).

In our attempt to find a unique definition of "landscape", a review of all the insights suggested by these relevant documents has been made, and some common elements have been highlighted. First of all, landscape can be considered as part of the land, as perceived by local people or visitors, which evolves through time as a result of being acted upon by natural forces and human beings.

The European Landscape Convention seems to provide the most suitable, comprehensive and useful definition. It applies to the entire territory of the parties involved, and relates to natural, urban and suburban areas, whether on land, water or sea. It therefore concerns not just remarkable landscapes but also ordinary everyday landscapes and blighted areas.

According to this Convention, "Landscape" means "***an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors***".

Landscape definitions differ depending on the specific disciplinary perspective and policy context. The European Landscape Convention defines landscape as "an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors" (European Council, 2000). It defines Landscape management as "action, from a perspective of sustainable development, to ensure the regular upkeep of a landscape, so as to guide and harmonize changes which are brought about by social, economic and environmental processes" (European Council, 2000).

Landscapes should be understood as composite entities, which reflect topography and the physical environment and comprise a cultural, "...archaeological and built heritage, as well as an ecological infrastructure" (Cooper et al, 2009, pp.16). In Europe, landscapes show high heterogeneity and local distinctiveness (Cooper et al, 2009); (Meert et al, 2009); (Gobster, Nassauer, Daniel, & Fry, 2007). Moreover, European landscapes are to a high degree shaped by agricultural land use (Eurostat, 2010). The main landscape services provided by agricultural landscapes have been specified by numerous studies (Cooper & Baldock, 2009); (Power, 2010); Sandhu et al., 2008; Tscharntke et al., 2005).

Prager, K. & Freese, J. (2009) express landscape as "the outdoor environment, natural or built, which can be directly perceived by a person visiting and using that environment. A scene is the subset of a landscape which is viewed from one location (vantage point) looking in one direction... ". On the other side landscape can be defined as a set of visually visible by the human eye relief elements such as ground, part of the territory, including the various rock formations visible on the horizon, visible flora and fauna, climatic phenomena which occur in the relevant territory created structures civilization as infrastructure, buildings, ponds, agricultural land.

Valorization of landscape in rural tourism is significant and plays a crucial role in attracting visitors to a destination. The landscape of a region, including its natural features, terrain, climate, and overall aesthetic appeal, can greatly impact the tourism industry in several ways:

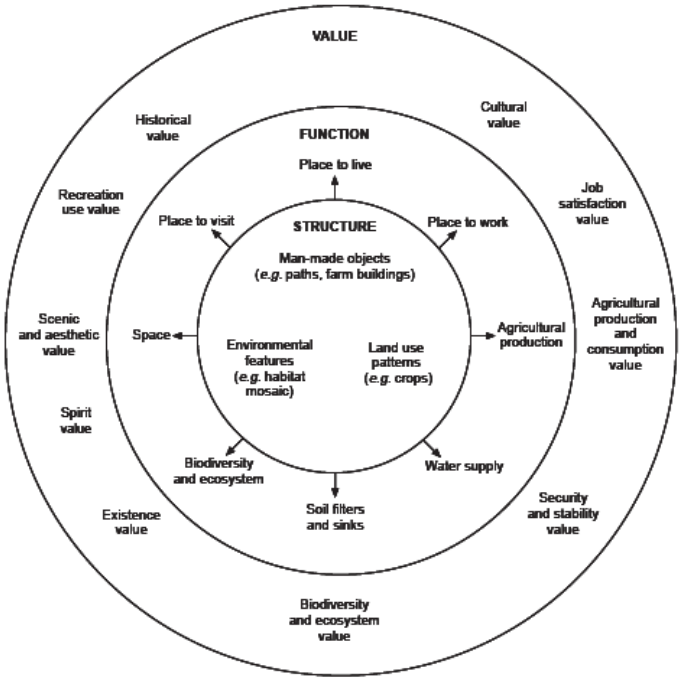
- Scenic Beauty and Aesthetics: Beautiful landscapes, such as pristine beaches, majestic mountains, lush forests, tranquil lakes, and picturesque countryside, can captivate tourists. Travelers are often drawn to destinations that offer stunning natural beauty for relaxation, rejuvenation, and recreation;
- Outdoor Activities: Diverse landscapes provide opportunities for a wide range of outdoor activities, such as hiking, skiing, surfing, kayaking, and wildlife watching. Tourists seeking adventure and outdoor experiences are more likely to choose destinations with varied landscapes;

- Cultural Significance: Landscapes can hold cultural and historical significance. Iconic natural landmarks like the Grand Canyon or Machu Picchu draw tourists interested in history and culture. Indigenous communities often have a deep connection to their local landscapes, making them attractive for cultural tourism.
- Ecotourism: Pristine and ecologically diverse landscapes are crucial for ecotourism. Travelers interested in environmental conservation and responsible tourism are more likely to visit places with unique and well-preserved ecosystems.
- Climate and Weather: The climate and weather patterns of a destination can be a significant factor in attracting tourists. People often choose destinations with climates that align with their preferred activities, such as skiing in winter or beach vacations in summer.
- Photography and Social Media: Picturesque landscapes serve as excellent subjects for photography and social media sharing. Tourists often share their experiences online, which can further promote a destination.
- Wellness Tourism: Tranquil and natural settings are appealing for wellness tourism. Spa resorts located in scenic landscapes offer relaxation and stress relief, and yoga retreats often choose peaceful, natural settings.
- Culinary Tourism: Landscapes can also influence culinary tourism. Regions known for their agricultural landscapes, vineyards, or fishing industries often attract food enthusiasts looking for local and authentic gastronomic experiences.
- Art and Inspiration: Many artists, writers, and creatives draw inspiration from landscapes. Destinations with a rich artistic history or a thriving arts scene can attract tourists interested in culture and creativity.
- Economic Impact: Tourism driven by landscapes can have a significant economic impact on a region. It can create jobs, stimulate local businesses, and lead to infrastructure development, such as hotels, restaurants, and recreational facilities.
- Conservation and Sustainability: Tourism can have both positive and negative impacts on landscapes. It can provide financial incentives for conservation efforts, but it can also lead to environmental degradation if not managed sustainably. Many destinations now focus on responsible tourism practices to protect their landscapes.

In conclusion, the influence of landscape in tourism is multifaceted and encompasses various aspects, from aesthetics and outdoor activities to culture, sustainability, and economic development. A destination's unique landscape can be a powerful magnet for tourists and a vital component of its overall tourism strategy. However, it's crucial to manage tourism responsibly to ensure the preservation and sustainability of these landscapes for future generations.

Based on literature review we can conclude that landscape is a multi-dimension element of management. Landscape can be represented as a complex system which contains of several elements and has *structure, function and value* (see figure 1).

Figure 1. Key landscape elements: structure, function and value



Source: OECD, 2001

Landscape functions are elements in landscape theory that are vital to be examined in purpose to choose adaptive method for measurement of landscape values. The landscap function are:

- *Ecosystem Function:* Landscapes provide essential ecosystem functions, including:

(1) Habitat: Supporting diverse flora and fauna and contributing to biodiversity; (2) Nutrient Cycling: Recycling of nutrients and maintenance of soil fertility; (3) Water Regulation: Managing water flow, filtration, and storage; (4) Carbon Sequestration: Capturing and storing carbon dioxide, helping mitigate climate change; (5) Pollination: Providing habitats for pollinators, essential for agriculture.

- *Cultural and Aesthetic Function:* Landscapes serve as cultural and aesthetic settings:

(1) Scenic Beauty: Providing visual appeal and aesthetic enjoyment; (2) Cultural Significance: Holding cultural, historical, and spiritual value for communities; (3) Inspiration: Inspiring artists, writers, and creatives; (4) Heritage: Preserving cultural heritage and traditions.

- *Recreation and Tourism Function:* Landscapes offer opportunities for outdoor recreation and tourism: (1) Outdoor Activities: Supporting activities like hiking, camping, fishing, and skiing; (2) Tourism Attractions: Attracting tourists to destinations with natural beauty and unique landscapes.

- *Economic Function:* Landscapes contribute to the economy in various ways: (1) Agriculture: Providing fertile land for agriculture and food production; (2) Tourism: Generating income and employment through tourism-related activities; (3) Natural Resources: Offering resources like timber, minerals, and water.

- *Environmental Protection Function:* Landscapes can act as protective barriers: (1) Flood Mitigation: Buffering against floods, storms, and erosion; (2) Natural Hazards: Reducing the impact of natural disasters like wildfires and landslides.
- *Educational and Scientific Function:* Landscapes are valuable for education and research: (1) Research: Serving as outdoor laboratories for ecological and environmental studies; (2) Education: Providing opportunities for environmental education and interpretation.

***Landscape value* –** every landscape function provides different values for economy. The value of landscapes is multifaceted and can be assessed from various perspectives, including economic, ecological, cultural, and aesthetic dimensions. Here are some key aspects of landscape value:

Economic Value: - (1) Tourism and Recreation: Many landscapes attract tourists and outdoor enthusiasts, contributing significantly to the local and national economy through the tourism industry; (2) Agriculture: Agricultural landscapes provide food and other agricultural products, supporting the agricultural sector and food supply chain; (3) Real Estate: The scenic beauty and desirability of certain landscapes can influence property values, making real estate more valuable in these areas. (4) Natural Resources: Landscapes may contain valuable natural resources like minerals, timber, or water, which can be extracted for economic gain.

Ecological Value: - (1) Biodiversity: Natural landscapes often support diverse ecosystems, which are crucial for biodiversity conservation and maintaining ecological balance; (2) Ecosystem Services: Landscapes provide essential ecosystem services such as clean air and water, pollination, and carbon sequestration, contributing to human well-being; (3) Habitat: Natural and semi-natural landscapes serve as habitat for wildlife, including endangered species, which are vital for conservation efforts.

Cultural and Historical Value: - (1) Heritage: Some landscapes hold cultural or historical significance, representing the heritage and traditions of a particular region or community; (2) Archaeological Sites: Landscapes can contain archaeological sites and artifacts that offer insights into human history and culture; (3) Spiritual and Sacred Sites: Certain landscapes are considered sacred by indigenous communities and have cultural and spiritual value.

Aesthetic and Recreational Value: (1) Scenic Beauty: The aesthetic appeal of landscapes has intrinsic value, attracting artists, photographers, and those seeking aesthetic experiences; (2) Recreation: People often engage in recreational activities in appealing landscapes, providing opportunities for relaxation and enjoyment.

Educational and Scientific Value: (1) Research: Landscapes serve as living laboratories for ecological and environmental research, contributing to scientific knowledge and understanding; (2) Education: Landscapes can be used for educational purposes, teaching people about geology, biology, and environmental science.

Psychological and Well-being Value: (1) Stress Reduction: Access to natural landscapes has been shown to reduce stress, improve mental health, and enhance overall well-being; (2) Cultural Connection: Landscapes can foster a sense of place and cultural identity, contributing to a community's well-being; (3) Climate Regulation: Certain landscapes, such as forests and wetlands, play a crucial role in regulating the climate by absorbing carbon dioxide and influencing local weather patterns; (4) Resilience and Disaster Mitigation: Natural landscapes like wetlands and mangroves provide resilience against natural disasters like floods and storm surges; (5) Agricultural and Food Security: Landscapes that support agriculture are essential for food production and food security.

The value of a landscape can be subjective and dependent on individual perspectives and cultural contexts. Recognizing and assessing these various dimensions of landscape value is important for making informed decisions about land use, conservation, and sustainable development. It's also crucial for ensuring that landscapes are preserved and managed in ways that balance human needs with ecological and cultural preservation.

Methods for measuring the influence of landscape on tourism development. Measuring the influence of landscape on rural development and tourism is a complex task that requires a combination of quantitative and qualitative methods. Here are some methods and approaches that can be used to assess this influence:

(1) *Surveys and Questionnaires:* (1) Visitor Surveys: Conduct surveys of tourists to gather information on their motivations for visiting rural areas, the importance of landscape in their choice of destination, and their satisfaction with the landscape; (2) Community Surveys: Survey residents of rural areas to understand their perceptions of the landscape's role in tourism and how it affects local development.

(2) *Collecting survey data using GIS (Geographic Information Systems):* Use GIS to analyze spatial data and map out the distribution of tourist attractions, natural features, and development in rural areas. This can help identify patterns and relationships between landscape and tourism development;

(3) *Economic Impact Studies* - conduct economic impact assessments to measure the contribution of tourism to rural development. This includes analyzing visitor spending, job creation, and tax revenue generated by tourism activities.

(4) *Case Studies:* In-depth case studies of specific rural areas can provide rich qualitative data on the influence of landscape. Interviews, focus groups, and observations can be used to gather information from tourists, residents, and local businesses.

(5) *Visitor Counts and Data Collection:* Use visitor counters and data collection techniques to track the number of tourists visiting specific rural areas. This data can be used to assess trends and the impact of landscape on visitor numbers;

(6) *Environmental Impact Assessment:* Evaluate the environmental impact of tourism activities on the landscape, including factors like land degradation, pollution, and habitat disruption.

(7) *Cultural Heritage Assessments:* Assess the cultural heritage and historical significance of the landscape, as this can be a significant driver of tourism and rural development. This may involve archaeological surveys and ethnographic research.

(8) *Stakeholder Interviews and Workshops:* Engage with stakeholders, including local government officials, tourism operators, environmental organizations, and community members, through interviews and workshops to gather insights into the relationship between landscape, tourism, and development.

(9) *Visitor Behavior Analysis:* Analyze visitor behavior and preferences through techniques like tracking social media posts, online reviews, and mobile app usage to understand how tourists interact with the landscape and what aspects appeal to them.

(10) *Environmental Valuation Methods:* Use economic valuation methods like contingent valuation or travel cost analysis to estimate the economic value of the landscape in terms of recreation, aesthetics, and other ecosystem services.

(11) *Sustainable Tourism Assessments:* Assess the sustainability of tourism practices in rural areas, including their impact on the landscape. Tools like the Tourism Sustainability Assessment Tool (TSAT) can be applied.

(12) *Remote Sensing and Satellite Imagery*: Utilize remote sensing and satellite imagery to monitor changes in the landscape over time, such as deforestation, land use changes, and urban sprawl, which can affect rural development and tourism.

(13) *Community-Based Tourism Development Workshops:* Organize workshops that involve the local community in planning and developing sustainable tourism initiatives that leverage the landscape's unique attributes.

Combining multiple methods and data sources can provide a comprehensive understanding of how landscape influences rural development and tourism. It's essential to tailor the research approach to the specific context and goals of the study. Additionally, engaging local communities and stakeholders throughout the research process is crucial for developing strategies that balance tourism development with landscape preservation and community well-being.

The method of "Choice experiment". A choice experiment is a method used in economics and social sciences to understand individuals' preferences and willingness to pay for different attributes of a product, service, or environmental resource. It is commonly used in the fields of environmental economics, marketing, and public policy to inform decision-making. Here's an overview of how a choice experiment typically works:

1. Attribute Selection: The first step in designing a choice experiment is to identify the attributes of the product, service, or resource you want to study. Attributes are the specific characteristics or features that individuals consider when making choices. For example, if you're studying preferences for a smartphone, attributes might include screen size, battery life, camera quality, and price.

2. Attribute Levels: For each attribute, you need to define different levels or variations. These levels represent the different options or scenarios that respondents will consider in the choice experiment. For example, for the attribute "screen size," you might have levels like 5 inches, 6 inches, and 7 inches.

3. Choice Sets: Choice sets are combinations of attribute levels that respondents will evaluate and choose from. These are created using a fractional factorial design to efficiently cover all possible attribute combinations without overwhelming respondents. Each choice set typically contains two or more alternatives, each with different attribute levels.

4. Survey Design: You design a survey in which respondents are presented with a series of choice sets and asked to choose their preferred alternative from each set. The survey should also collect demographic and other relevant information about respondents.

5. Data Collection: Administer the survey to a sample of respondents, ensuring that the sample is representative of the population you are interested in studying. Respondents' choices in the choice sets will provide data on their preferences and trade-offs between different attribute levels.

6. Data Analysis: Analyze the choice experiment data using statistical techniques like conditional logit models or mixed logit models. These models estimate individuals' preferences for different attribute levels and can be used to calculate willingness to pay for specific attributes.

7. Interpretation: Interpret the results to understand which attributes are most important to respondents and how they value different attribute levels. This information can be used for pricing strategies, product design, policy decisions, or resource allocation.

8. Policy or Business Implications: The insights gained from the choice experiment can inform decision-makers about how to design products, services, or policies that better align with consumers' preferences and maximize their welfare.

CONCLUSION

Choice experiments are valuable tools for understanding consumer preferences and can be applied to various contexts, such as transportation planning, environmental conservation, healthcare, and more. When conducting a choice experiment, it's important to carefully design the survey, ensure a representative sample, and use appropriate statistical methods for analysis to obtain reliable and actionable results.

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