EXTENDED TOURIST RESPONSIBILITY: A TOOL FOR ACHIEVING SUSTAINABLE TOURISM ECONOMY

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ABSTRACT

This study aims to propose a model proposal for analyzing the phenomena of “tourist responsibility,” which has been overlooked in tourism literature and practice. A literature review on responsible tourism is conducted in this study. The factors that have an average environmental impact on a tourist journey are identified, and a model proposal is made for calculating the environmental load that each of these factors causes. According to the literature, as the tourism industry became aware of the negative effects of tourism on the environment, it began focusing on ways to reduce the sector’s externalities. Tourists, as consumers, are important actors of a sustainable transition. As a result, there is a need for a calculating approach that can concretely quantify tourist responsibility. The model proposal takes into account a simple and feasible perspective to create awareness about the environmental impacts that tourists will have and to take responsibility according to the “polluter pays” principle in mitigating tourism’s negative impacts. In practice, despite the growing body of theoretical literature on responsible tourism, the question of how to deliver responsible tourism remains unanswered. This article suggests an extended tourist responsibility model, inspired by the concept of extended producer responsibility, for broadening the scope of responsibility for environmental impacts associated with tourism activities.

Keywords: sustainable tourism, responsible tourism, extended producer responsibility, tourist responsibility

Jel Codes: L52, O38, O44.
INTRODUCTION

Tourism has both positive and negative economic, social, and environmental consequences (Krippendorf, 1987; Briassoulis, 2000; Gössling, 2002; Hall & Lew, 2009; İnanır & Uçar, 2021). Tourism’s unplanned expansion, which is often quick and unregulated, has the potential to be the primary cause of environmental damage as well as the loss of local identity and traditions. According to McLaren (1998), while tourism has established itself as a significant sector of growth, it has not reached the same level of success when it comes to environmental sustainability. On the other hand, Wahab and Pigram (1997) emphasize the danger of tourism being seen as a “white business” that does not require special planning. But in the construction and operation of touristic facilities/regions, both renewable and non-renewable resources are utilized. The use of land and building materials, deforestation, and numerous tourism operations put pressure on vulnerable ecosystems. In some cases, these destructions have resulted in significant and irrevocable alterations in ecosystems and wildlife habitats.

There is a growing awareness among tourism stakeholders regarding the harmful environmental impacts of tourism depending on increasing concerns. As a result of this understanding, the traditional (mass) tourism framework has to be reformed. Given the scarcity of natural resources, the world’s carrying capacity, and the current problems caused by production and consumption, it is clear that a structural change in the way tourists think about the world is needed. Academic research, which traditionally concentrated on the economic and cultural consequences of tourism, has gradually begun to consider the environmental impacts (Michailidou et al., 2016). Studies on the impact of tourism on the environment have emerged in the last few decades, with an emphasis on specific ecosystems (forests, wetlands, coral reefs) (Baker, 2018). However, the fact that global warming began to have a profound effect in the new millennium heightened interest in the subject and shifted the focus away from confined ecosystems to the global scale. Diverse concepts and techniques (sustainable tourism, green tourism, ecotourism etc.) have begun to emerge in the literature to secure a sustainable tourism economy's transformation. These studies, which are often oriented around the supply side, overlook the effectiveness of the customer side (e.g. Fennell, 2008; Sharpley, 2012; Lee et al., 2016; Munar & Jamal, 2016; Cisneros-Martínez et al., 2018; Higgins-Desbiolles, 2018; Ateljevic, 2020). However, it should not be forgotten that an economic structure's dynamics cannot be restricted to the production side. Approaches to a sustainable tourism economy that exclude tourists are unlikely to succeed, especially in today's world, where information is readily available and consumer preferences determine supply structure. Tourists’ sense of belonging and involvement in a sustainable transition, as well as their sense that they are making a difference, are important parts of a successful long-term transformation. To develop a sustainable consumer profile, it is vital to convincing consumers that their behavior is being considered, that their participation is expected, and that they are, in some ways, a key partner in the process. The study proposes a method in which consumers' responsibility is increased and they become key players contributing to sustainability. A mechanism is proposed that places tourists at center, and convincing tourists that the result of their efforts makes sense for a sustainable environment. In other words, creating a sense of effectiveness in tourists is of strategic importance for this model. Thus they realize the environmental effects of their activities, and they can be made to bear the burden of the negative effects they cause.

1. Tourism

Following World War II, tourism ceased to be a phenomenon reserved for the elite, and individuals of all income levels began to participate in tourism activities. While the annual tourist mobility was limited to 25 million people in 1950, this number increased by 58 times in 2018, and the travel and tourism industry contributes 9% of the global GDP and employs over 120 million people directly (Michailidou et. al., 2016). International tourism is prioritized by countries due to its perceived value as a source of foreign exchange. It generates more foreign exchange earnings than any other product or service category. Apart from being one of the world's fastest-growing businesses, tourism is a significant source of foreign exchange revenues and jobs in several developing countries (tourism revenue, percent of GDP, according to 2018
data; Macao %75, Aruba %63, Maldives %57, Ant&Barb. %53, Saint Luca %47, Grenada, %46, Seychelles %39). Table 1 indicates that tourism activity increased by 3% to 7% every year between 2011 and 2019 (The -73% drop in mobility in 2020 is due to the global pandemic).

Changes in the traditional understanding of tourism have begun to occur since the twenty-first century. In addition to causes such as digitalization as a result of expanding technology and changing business models, one of the key elements in this change is the concept of sustainability.

1.1. Impacts of Tourism

Tourism can be classified into five distinct activities: “Travel planning → Travel to a destination → Accommodation → Tourism activities → Returning home”.

All of these actions have direct and indirect beneficial and negative economic, social, and environmental consequences. Depending on the location, type, and duration of tourism, the visibility and impact levels of these effects may vary. When expressing the effects of tourism, it’s important to remember that some variables have favorable effects on some locations while having negative effects on others. Local arts and crafts, for example, tend to disappear in one area as a result of tourism activities, but they tend to reappear in another. In general, it would not be reasonable to say that the positive or bad consequences of tourism are the same for all destinations. Tourism has numerous beneficial consequences (for example, local growth, improved infrastructure, greater public services, cultural diversity, higher standard of life, preservation of local values, and rediscovery of forgotten traditions) as well as numerous negative consequences (for example, immigration, devaluation of non-tourist activities, increased anger and conflict due to stress, population growth beyond capacity, alienated architectural styles, changes in economic life/patterns of social interaction/community customs/population growth beyond carrying capacity, overcrowdedness/financial structure, improper location of tourism facilities, increased traffic, increased crowd and crime rates, globalization rather than localization). Tourism’s negative and positive impacts have been attempted to be summarized in Table 1 shown below.

<table>
<thead>
<tr>
<th>Impacts</th>
<th>Economic</th>
<th>Social</th>
<th>Environmental</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Positive</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employment</td>
<td>Interaction with other cultures</td>
<td>Ecological awareness</td>
<td></td>
</tr>
<tr>
<td>Foreign currency inflow</td>
<td>Rediscovery of lost traditions</td>
<td>Protection of wildlife</td>
<td></td>
</tr>
<tr>
<td>Multiplier effect</td>
<td>Protection of cultural heritage</td>
<td>Protection of endemic plants</td>
<td></td>
</tr>
<tr>
<td>Broader economic base</td>
<td>Increased knowledge</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Support for fair distribution of income</td>
<td>Better social services</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Negative</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Price increases</td>
<td>Criminality</td>
<td>Pollution (air, water, noise)</td>
<td></td>
</tr>
<tr>
<td>Seasonal unemployment</td>
<td>Alienation</td>
<td>Damage to soil and vegetation</td>
<td></td>
</tr>
<tr>
<td>Increased dependence</td>
<td>“Disneyfication” of culture</td>
<td>Erosion</td>
<td></td>
</tr>
<tr>
<td>Under capacity use of facilities at certain times of the year</td>
<td>Degradation in local cultural life</td>
<td>Improper land use</td>
<td></td>
</tr>
<tr>
<td>The increased cost of living for local communities</td>
<td>Dilution of local customers and heritage</td>
<td>Changes in hydrological patterns</td>
<td></td>
</tr>
<tr>
<td>The gradually low share of tourism expenditures in the local economy</td>
<td>Loss of indigenous arts</td>
<td>Increased congestion</td>
<td></td>
</tr>
<tr>
<td>Leaks and poorly paid jobs</td>
<td>“Westernized” behavior</td>
<td>Increased carbon footprint</td>
<td></td>
</tr>
<tr>
<td>Economic fluctuations</td>
<td>Increased lawlessness</td>
<td>Destruction of habitats</td>
<td></td>
</tr>
<tr>
<td>Opportunity costs</td>
<td>Conflict due to incompatible demands of tourists and hosts</td>
<td>Vandalism</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Commercializes culture, religion, and art</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Source:** This table was compiled from the studies of Hall and Page (2014), Hall and Lew (2009), Butarbutar and Soemarno (2013), Marzuki (2012), Brunt and Courtney (1999).
When the subject of tourism is brought up, the first thing that comes to mind is its economic impact. International income earned by foreign tourists visiting a country is viewed positively by all governments as a development tool. While domestic tourism contributes to the reduction of regional income disparities, foreign tourism is universally recognized as a revenue-generating activity for countries. Additionally, it has beneficial impacts such as expanding employment prospects in the dozens of diverse sectors to which it is connected, necessitating investment in regional infrastructure development, and boosting the local economy. Several of the negative consequences include the following: The inflationary implications of tourism spending are the rise in the prices of products and services, as well as land and housing (Krippendorf, 1987; Leslie, 2012; Marzuki, 2012).

The impacts of tourism on the environment are the focus of this research. Transportation, accommodation, and other tourist activities have major environmental consequences on a global scale (Gössling, 2002) and it is estimated that only tourism-related transport will be responsible for 5.3% of all carbon dioxide emissions in 2030 (UN, 2019). Unlike the economic and social structure, tourism has a limited number of positive environmental consequences (Gössling, 2002). In the literature, improvements to existing infrastructure are frequently described as having a positive impact. This arrangement is socially acceptable, yet covering an area with a tourism facility cannot be considered a beneficial consequence when considering the impact on ecosystems. In addition, the literature describes some good benefits of tourism, such as raising ecological awareness, funding the maintenance of natural regions, and safeguarding wildlife and rare species. When it comes to negative consequences, there are numerous aspects to consider. Pollution of the air, water, and soil; increasing emissions, groundwater reduction and pollution; deterioration of animals owing to increased settlement and noise; increased energy consumption; deforestation; and extinction of flora and fauna (Wahab & Pigram, 1997; Tol, 2007; Sharpley, 2013).

The creation of general infrastructures such as airports, highways, and tourism facilities such as resorts, hotels, restaurants, stores, golf courses, and marinas are some of the detrimental effects of tourism on the environment. In addition, there are ongoing sources of the negative impact that are not one-time occurrences and fluctuate depending on the number of tourists and nights stayed, as well as the content and frequency of touristic activities (Gössling, 2002).

1.2. Responsibility of Tourism

Until the 1970s, the “white sector” image of tourism precluded researchers from focusing on the effects of tourism. The first scholarly articles on the environmental implications of tourism (Tangi, 1977; Lawson and Baud-Bovy, 1977) appeared in the 1970s, as criticism of the issue grew (Briassoulis, 2000). In the 1980s, attention grew, prompting the creation of new publications outlining preventive methods and alternatives to mass tourism, as well as the harmful environmental impacts of tourism (Fletcher, 1989; Nordbo, 1985). Since the 1990s, academic publications have appeared that concur that tourism’s environmental effects may be considerably greater than previously thought, and that cover a wider range of topics and concepts (such as sustainable tourism, ecotourism, and tourism policies).

Responsible tourism has evolved as a result of the tourism boom that followed World War II, as well as the increased awareness of and criticism of tourism’s environmental impacts as a result of changes in tourist profiles. It was first used to characterize alternate forms of tourism in the early 1990s, rather than mainstream tourism (Sharpley, 2013). Krippendorf (1987) contributed to the formation of the concept of responsible tourism by arguing that a new form of tourism is needed that will provide maximum benefit to tourism stakeholders before irreversible effects occur. He also argues that all stakeholders in tourism should have an ethic of responsibility with an approach that prioritizes ecology over the economy. Responsible tourism is another notion that has been established to ensure tourism’s long-term viability. In the literature, there are various definitions of responsible tourism. For example, tourism management is based on taking responsibility for one’s actions (Leslie, 2012), all forms of tourism that respect the host’s natural, built, and cultural environments, as well as the interests of all parties involved (Stanford, 2000), enabling local communities to have a better quality of life through increased socio-economic benefits and improved natural resource management (Spenceley et al., 2002),
and a type of sustainable tourism that aims to achieve sustainable development (Kerala Tourism, 2012). Goodwin (2011) emphasizes that responsibility ethics, responsiveness, willingness, and capacity to take responsibility are at the core of responsible tourism, emphasizing that it should not be viewed as a specific type of tourism or a niche market, but rather as a managerial concept that encompasses all forms of tourism. To put it another way, the responsible tourism approach, which is focused on long-term tourist goals, necessitates responsibility on both the supply and demand sides of the tourism equation. Sharpley (2013) claims that the transformation of mainstream tourism is the reason for this; it emphasizes the importance of stakeholders taking responsibility for their activities and ensuring community participation. According to Rhodes (2004), responsible tourism goals may be met if all tourism businesses, from small businesses to huge chain hotels, take responsibility for their operations.

2. Extended Producer Responsibility Approach
The fact that governmental initiatives toward sustainable development have begun to raise concerns about the environmental impact of present production and consumption cycles has expedited the creation of new concept searches. The open-ended economic system's excessive and inefficient exploitation of natural resources has a detrimental effect on ecological systems. As a result, it has begun to serve as the foundation for sustainable development policies, methodologies, and practices that maximize resource efficiency. One of them is the concept of "Extended Producer Responsibility" (EPR), which was popularized in the 1990s by Thomas Lindhqvist and is centered on producers' internalizing negative externalities as a preventive policy approach. Through this approach (OECD, 2001), producers are held accountable for the potential environmental repercussions of their products throughout their full lifecycle. A producer's responsibility in a linear economic system is restricted to production and sales. The producer is expected to exert minimal effort so that the manufacturing process and the product it sells do not endanger people. To put it another way, responsibility begins with production and ends with sales. When consumers do not request products for any reason (such as aging, wear, malfunction, or outdatedness), it is presumed that the relevant product has reached the end of its useful life. Garbage collection locations are the place to go under the old system if the consumer does not make a particular effort or if the waste is not considered as having economic worth by the enterprises. Unlike linear economies, circular economies establish measurements and procedures that keep products as close to the economic system as possible. Rani and Shanker (2018) define EPR as a strategy for environmental policy. According to him, under EPR, a producer's responsibility for a product is extended to the post-consumer stage of a product's life cycle, shifting the financial burden of waste treatment from local authorities to manufacturers. EPR is defined as a notion that adheres to the "polluter pays principle," as well as an economic tool that ensures the cyclical flow of products and materials (Manomaivibool and Hong 2014). According to the OECD (2016), the major aspects of EPR include shifting product responsibility to producers and giving incentives to encourage the eco-design of products. The producer's only option is designed for the environment (DfE), which can be expressed as a political instrument aimed at requiring actors in the manufacturing process to bear the environmental costs associated with more environmentally friendly products and processes.
Figure 1. Conventional and Extended Producer Responsibility

With the extension of producer responsibility to the post-consumption stage, the producer is once again responsible for dealing with their products at the end of their useful life. This means that the producer assumes the obligation of local governments and, to a lesser extent, customers. There are many policies in place to ensure EPR. These may include a combination of regulatory, economic, and voluntary policy mechanisms (Lindhqvist, 2000). Gupt and Sahay (2015) categorize political tools related to EPR into three categories. Related tools and examples of these tools may be found in Table 2.

Table 2. Policy Instruments for EPR

<table>
<thead>
<tr>
<th>Types of policy instrument</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Administrative instruments</td>
<td>Collection and/or take-back (mandatory or voluntary), Reuse and recycling targets, Setting emission limits, Recovery obligation, Product standards, and technical standards</td>
</tr>
<tr>
<td>Economic instruments</td>
<td>Material/product taxes, Subsidies, Advance disposal fee systems, Deposit-refund systems, Upstream combined tax/subsidies</td>
</tr>
<tr>
<td>Informative instruments</td>
<td>Environmental reports/labeling, Information provision to recyclers, Consultation with authorities about collection network Agreements, Social contracts, Gentlemen’s agreement</td>
</tr>
</tbody>
</table>

Source: Gupt and Sahay, 2015.

According to the OECD (2016), initiatives such as advanced disposal fees, buyback schemes, deposit-refund systems, and a mix of downward subsidies and upward taxes are tools used to shift product liability to manufacturers. When the EPR’s recent history is investigated, it is clear that it is a political project focused on the environment. The idea is thought to have originated in Europe. The European Union has accepted it as a strategy that strives to extend manufacturers’ obligations for production/products beyond the point of sale but to include the whole product life cycle (OECD, 2001). As a result, the financial burden imposed on local governments by waste management will be reduced, and producers’ attitudes and actions toward resource usage will shift in favor of the environment (Lai et al., 2014). The European Parliament passed a directive in 2000
requiring member countries to implement an EPR program for end-of-life cars (Spicer and Johnson, 2004).

In its initial stage, EPR originated as a set of legally binding laws for specific industries. It has attempted to persuade firms to restructure their supply chains and create goods with reusable, more easily repairable, interchangeable parts and recyclable materials. Initially, EPR was restricted to the automobile and electronic product industries. Many industries have begun to develop standards as a result of the EPR policies enacted in these sectors. Over time, the process included returned product flows, packaging, electrical appliances, batteries, spent oil, and tires. EPR's fundamental mechanisms include reverse logistics, recycling, reusing, and eco-friendly disposal. Thus, the producer assumes responsibility for the management of expired products, rather than local governments. Additionally, the manufacturer's greater obligation compels him to place a higher premium on the product's life cycle. As a result, it investigates alternate ways that can ensure sustainability while remaining economically viable. The design of products and manufacturing processes are scrutinized, and novel techniques are developed to promote the circular economy (Hickle, 2014). Around 400 EPR initiatives have been implemented globally, with an anticipated market contribution of around 300 billion Euros per year (OECD, 2016). The primary advantage of EPR is that it enables structural change in the producer's and, over time, the consumer's thoughts. Thus, the steps toward a cyclical economy are taken by focusing on the concept of design for the environment, which considers resource and energy efficiency, product life cycle extension, and product use within the system.

3. Enhanced Tourist Responsibility (ETR) Derived from The EPR

When general EPR practices are evaluated, it is clear that the producer bears responsibility throughout the product life cycle. There are also a variety of applications available. In Japan and Korea, for example, a consumer who wants to dispose of household equipment must pay a charge for the product to be collected (Aizawa et al., 2008). While customers are not typically expected to complete specific legal requirements for EPR, they can be regarded as a critical component of the approach's success. Because consumers can affect production processes through their purchasing attitudes and behaviors. Furthermore, for goods that have completed their lives or that the consumer believes have concluded their lives to be included in the circular economy, the consumer must engage in the circularity (such as increasing the product life, directing them to alternative areas of use, or reusing the product parts). In this regard, consumer knowledge and motivation to reintegrate the relevant product into the economic system, rather than the consumer's predisposition to use unsuitable disposal techniques or leave the product idle, is extremely important for long-term sustainability.

The expense of correcting environmental damage reasoned by production and consumption is referred to as "environmental debt" in the literature (Azar & Holmberg, 1995). Environmental debt will continue to accrue unless solutions are found to lessen or even eradicate environmental degradation, and the burden will be passed on to future generations. It is compatible with the "polluter pays" approach to be able to characterize actions related to production and consumption that result in the buildup of environmental debt and to place responsibility for this cost on the person or institutions who cause it (Schwartz, 2010). When it comes to the tourism industry, there is a slew of actions that contribute to the environmental debt. At this moment, the responsible tourism approach, which is one of the approaches created to lessen tourism's environmental effects, comes to the fore. However, there are no specified procedures for managing the responsibility connection in this approach (Sharpley, 2013). According to Sharpley (2012), the situation is uncertain as to how responsible tourism, or more accurately, responsibility, may be achieved. A gap in the literature can be seen in the lack of knowledge about how to execute responsible tourism. This study presents a paradigm based on visitors being held responsible for the environmental impact of their activities, taking into account the notion of EPR, to fill the relevant gap. When considering a touristic activity as a product, it is assumed that all stakeholders who are responsible for the environmental damage that will occur during the product's life cycle are held equally accountable and that they will face the financial cost of the environmental debt incurred. It is suggested that you use a calculating equation for this. As a result, an application architecture for implementing the responsible tourism approach will be developed, making it feasible to ensure that consumers, as tourism
stakeholders, are aware of the environmental damage they create/will cause. Tourists will recognize the limits of their environmental efficiency and the presence of more sustainable alternatives, in addition to having a more tangible grasp of the environmental impact of their acts. Furthermore, by more aggressively adopting the "polluter pays" approach, it will be feasible to help other travelers who are already concerned about sustainability feel better.

The purpose of this model proposal, which borrows the concept of EPR, is to properly allocate responsibilities among important participants in the tourism sector. As a result, environmental expenses associated with tourism-related activities will be able to be assigned to the appropriate parties. As a result of this process, it is expected that innovative business models will emerge, in which visitors are encouraged to take greater responsibility for the environmental impact of their tourism activities. Furthermore, to balance their rising duties, this recommended strategy may motivate stakeholders to focus on more creative and ecologically responsible operations. Tourist facilities will face pressure and motivation to promote sustainable tourism practices in a way that alleviates tourists’ responsibilities. This is likely to elevate sustainable tourism certification to a more significant and valued framework. This model proposal evaluates a typical tourism process into three primary stages, based on increasing tourist responsibility. In Figure 2 these steps were summarized as transportation, accommodation, and activities (in-house and off-campus).

<table>
<thead>
<tr>
<th>Transportation</th>
<th>Accommodation (food, beverages, paper, textile products, lightning, air conditioning, paper, chemicals etc.)</th>
<th>Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>(arrival, departure, local visits)</td>
<td>In-house tourist activities (swimming pools, spa, tennis, golf, animation shows, pool games etc.)</td>
<td>Off-campus tourist activities (city tours, yacht tours, fishing, cycling, walking, bird watching etc.)</td>
</tr>
</tbody>
</table>

**Figure 2.** Drivers of The Environmental Impact of a Touristic Process

Calculating the proportion of each of these activities in total environmental damage is both crucial and difficult. Because the entire environmental impact varies based on the type of tourism, the duration, and the distance traveled. However, because the major goal of this research is to provide a broad framework for future research, it was attempted to calculate the total environmental burden of each touristic activity/experience using a general equation. In the first stage, the environmental load of touristic activity was attempted to be formulated. The financial equivalent of this load, as the environmental debt was attempted to be estimated in the second stage. It has been emphasized how the financial equivalent of the linked debt cost to be paid by the tourist will be shared/transferred to the relevant products at the final stage (the distribution of total return among cost drivers). Each tourist program has its consumption intensity. Calculating a tourist’s total environmental impact is a complicated process that takes into account a variety of variables, such as preferred mode of transport, the distance between...
locations, preferred type of accommodation, level of participation in tourist activities, total duration, the location's motivation for sustainability, and activities that support sustainability. This requires the development of more standardized measurement methodologies. As a result, an environmental load can be calculated based on the mode of transport and distance traveled, taking into consideration published research on the environmental effects of transportation.

The carbon emissions created by each passenger per km/mile are computed as follows, depending on the vehicle/vehicles used:

\[
\text{(total km/mile to be traveled for arrival and return) \times (carbon emission per km/mile per person per the mode of transport)}
\]

In the literature, there are computations on average carbon emissions that are expressed with results that are close to each other. For example, Larsson and Kamb (2019) provide approximate emission levels for several modes of transportation in Table 3.

<table>
<thead>
<tr>
<th>Transport mode</th>
<th>gCO2e/pkm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small car, petrol</td>
<td>63</td>
</tr>
<tr>
<td>Medium car, diesel</td>
<td>54</td>
</tr>
<tr>
<td>Large car, diesel</td>
<td>71</td>
</tr>
<tr>
<td>Motorhome/caravan, diesel</td>
<td>106</td>
</tr>
<tr>
<td>Economy scheduled flight</td>
<td>163</td>
</tr>
<tr>
<td>Business scheduled flight</td>
<td>366</td>
</tr>
<tr>
<td>Economy charter flight</td>
<td>143</td>
</tr>
<tr>
<td>Electric train</td>
<td>10</td>
</tr>
<tr>
<td>Nordic countries</td>
<td></td>
</tr>
<tr>
<td>Average train Europe</td>
<td>45</td>
</tr>
<tr>
<td>Electric train Europe</td>
<td>34</td>
</tr>
<tr>
<td>Diesel train</td>
<td>91</td>
</tr>
<tr>
<td>Bus</td>
<td>27</td>
</tr>
<tr>
<td>100% biodiesel bus</td>
<td>14</td>
</tr>
<tr>
<td>Ferry</td>
<td>170</td>
</tr>
</tbody>
</table>

**Source:** Larsson and Kamb (2019)

There is a need for a formula that would provide a grading based on the current structure of each accommodation facility because there are so many factors. Independent institutions can measure and validate the daily per capita environmental load for each facility based on a set of commonly accepted factors and their weight as a starting point for the computation. The environmental impact of a single night's stay in the relevant lodging facility will be calculated using a standardized index. As a result, the visitor will bear the environmental cost in proportion to the number of days they spend at the relevant facility. The environmental impact per capita is calculated by dividing the volume of water, electricity, natural gas, paper, other consumables, food and beverages, chemicals, solid waste, and water that the relevant accommodation facility consumes daily during the season by the number of people staying in the facility on an average day. It is possible to arrive at a value. In other words, the tourists are held accountable for the facility's resource consumption and trash generation in proportion to their use. To achieve a more ecologically friendly rating, touristic facilities will aim to adopt a more sustainability-oriented management style if such a grading system is made required or widely recognized. Tourists will also consider these ratings when selecting a place and facility throughout their vacation planning.

The third topic that will have an impact on the environment during a touristic journey is the activities that the tourists will engage in while on the trip. These events might take place inside or outside of the accommodation area where the lodges are provided. On-campus activities can be accepted as part of the environmental burden generated by the accommodation facility. While assessing the facility's environmental load, the load per person has already been apportioned based on the number of tourists and the total load carriers (such as energy, electricity, water, and waste amount). There is a need for a widely acknowledged calculation for
off-campus activities. Each activity, such as scuba diving, boat tours, ATV tours, and nature walks, can be assessed using a standard environmental load evaluation.

The environmental burden of touristic activities should be calculated according to the real tourism activity, as it has been attempted to be expressed. As a result, the tourist will be aware of the environmental damage that will be caused, and the cost of the associated environmental burden will be collected from the tourist, allowing for the complete implementation of responsible tourism. The complexity of calculating the associated environmental load, on the other hand, is a significant roadblock to the process's effectiveness. As a result, if practicable, standardized environmental load calculations are required. Calculating the environmental load resulting from touristic facility operations and grading these institutions can also be utilized as a competitive factor that promotes sustainability.

Figure 3. The Flow of The Proposed Model

As a result, both the supply and demand sides of the tourism industry will be more aware of sustainable tourism, and responsible tourism practices will be created based on measurable criteria. Tourists who are aware of the environmental impact of the tourist activities they intend to engage in will be able to explore other activities of higher quality or will be willing to accept
the expense of the burden they cause. In this framework, the environmentally responsible tourist taxes that will be collected from tourists will be distributed among the cost carriers based on their local-global share of the environmental burden. Activities that promote sustainability on both a local and global scale will be realized in this way.

There is a global legal requirement to limit tourism's environmental impacts, involving both the supply side and the tourists. Tourists will be able to analyze the environmental load of transportation, lodging, and touristic activities when making travel arrangements under this scenario, in which the supply side of the sector develops strategies to limit environmental impacts. To attract more tourists, the service provider will need to establish more ecologically friendly facilities, procedures, and activities. The increasing environmental sensitivity in the demand side's tourism-related preferences will place greater pressure on the supply side over time. At the end of the day, it will provide a shared responsibility and win-win process in which environmental impact costs are collected from tourists (polluters), the resulting financial savings are transferred to relevant global and local resources, environmentally friendly R&D activities and practices are developed, and all stakeholders are involved. There are a few studies in the literature on carbon tax applications in the tourism sector, but they are mostly limited to air transportation taxation (ex: Zhang and Zhang, 2020; Cao et al., 2021; Dwyer et al., 2014; Meng and Pham, 2017; Van Cranenburgh et al., 2014; Mayor and Tol, 2007). Tol (2007) used a global price of $1000 per tonne of carbon emissions in simulation research to evaluate the effect of a carbon tax on air transportation. Even a minor fee, he found, would reduce carbon dioxide emissions by 0.8 percent. This fee, according to the study, may have a greater impact on long and short-haul flights than on medium-haul flights. Although the carbon tax is expressed as a necessary instrument for the sustainability of tourism, similar studies that try to analyze the effects of a carbon tax on the tourism sector with simulations generally argue that such a taxation approach will have negative effects on tourism demand and employment. Because the primary thesis of these researches is that a fee imposed in any country or region will cause tourists to seek out new destinations. However, if globally an “extended tourist responsibility” becomes a legal requirement, it is envisaged that some modifications will occur in the conventional structure and that the supply side would modify itself to meet the demands of the demand side. Furthermore, while a contraction is possible in the short term, the proposed model corresponds to a long-term transformation. As seen in Table 4, 50-55 percent of international travel is for leisure purposes. For 2019, this figure is estimated to be about 800 million (just before the pandemic). In exchange for the environmental impact of international transit, lodging, and tourism activities,

- A daily fee of $5-10 is levied (depending on whether the tourist prefers sustainable transportation and accommodation),

- Considering that the average number of nights stayed by a tourist is 3-4 (HCSO, 2020), it is estimated that a total of 12-32 billion USD in savings can be used to fund environmental conservation. If the appropriate quantity is used to establish sustainable tourist practices, it is also predicted to have a multiplier effect.

CONCLUSION

The tourism industry is expected to play a significant part in the global response to climate change. While the literature on responsible tourism has begun to emerge, a blueprint for how this will be implemented is still needed. Based on the notion of "polluter pays," it is proposed in this study that responsibility in the service sector is shifted to the demand side through the expression of extended tourist responsibility. Transportation, lodging, and touristic activities were considered the primary sources of environmental effects of tourism in the purchase of tourist services in the study. According to the statement, there is current literature available for development on the estimation of transportation environmental loads (EC, 1999; Endresen et al., 2003; Peeters et al., 2007). It is suggested that a comparative study be conducted for touristic activities, with approximate values for a variety of activities provided under various tourism kinds being calculated. It has been stated that the process is a little more complicated for the
accommodation item and that a system should be devised in which several elements, such as the size of the facility, the scope of the services supplied, and the location of the facility, are all weighted into the calculation. To do so, the rating must be done by independent entities. Some independent valuation agencies recognized by these organizations can rate the facilities for a fee using a calculating process that incorporates variables specified by the top non-governmental organizations relating to tourism. As a result, crucial sustainability information that a visitor can consider during the planning process will have an impact on their decision-making processes.

However, preferences such as a tourist facility with a low sustainability rating (i.e., a high environmental impact per visitor), distance from the destination, and a longer stay will impose a financial penalty on tourists. Tourists with high sustainability awareness will be more content with their attitudes and actions owing to the responsible tourism that has been put into effect, whereas tourists who insist on continuing their existing unsustainable practices will pay a financial price.

This will help to foster a conscientious and responsible tourism culture, as well as provide a financial resource to help offset the environmental effects of connected activities. Another topic to be addressed is how the gathered revenues will be divided locally and globally. The money in proportion to the environmental burden that will arise based on the mode of transportation (going to the destination and returning home) is advised in this study to be utilized in global environmental activities, while all other income is used to mitigate local environmental consequences. Another topic that needs to be explored is how and by whom these profits will be used (public institutions, local governments, non-governmental groups, etc.).

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SÜRDÜRÜLEBİLİR TURİZM EKONOMİSİNİ GERÇEKLEŞTİRMEK İÇİN BİR ARAÇ: GENİŞLETİLMİŞ TURİST SORUMLULUĞU

çevresel etki değerlerinin hesaplanması önerilmektedir. Bu, bilinçli ve sorunlu bir turizm kültürünün geliştirilmesine ve bağlantılı faaliyetlerin çevresel etkilerini dengelemeye yardımcı olacak bir mali kaynak sağlayacaktır. Ele alınması gereken bir diğer konu da toplanan gelirlerin yerel ve küresel olarak nasıl paylaşılacağınıdır. Bu çalışmada, ulaşım şekline (varış noktasına gidiş ve eve dönüş) bağlı olarak ortaya çıkacak çevresel yük ile oranlı paranın küresel çevre faaliyetlerinde kullanılması, diğer tüm gelirlerin ise yerel çevresel sonuçların hafifletilmesi için kullanılması tavsiye edilmektedir. Araştırılmasına gereken bir diğer konu da bu kazançların nasıl ve kimler tarafından kullanılacağı (kamu kurumları, yerel yönetimler, sivil toplum grupları vb.)
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