The time use rebound effect and its impact on tourist consumption in the context of sustainable tourism

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Introduction

Energy-efficient technologies in tourism are increasingly recognised by policy-makers and academics as a key in the reduction of energy consumption and greenhouse gas (GHG) emissions. However, these technologies have not reduced energy consumption in tourism to the desired level. This is partly because of the rebound effect (RE) which suggests that energy efficiency improvements reduce service costs and, therefore, can lead to increased energy consumption by consumers and even offset anticipated energy savings (Sorrell & Dimitropoulos, 2008). Although the occurrence of the RE in tourism has been recognised (Hall, 2015), no research has explored its applications and implications in the context of sustainable tourism.

Beyond energy efficiency of the RE, time efficiency is of particular relevance in tourism because many technology-based solutions within the industry have been designed to save time, particularly in tourist transport. Technological changes associated with time savings can impact significantly the demand for a tourist service, leading to the increased use of time-saving technologies, in which the time use rebound effect (TRE) may occur (Jalas & Juntunen, 2015). Many time-saving technologies intensify energy consumption because they require more energy to increase the speed of service (e.g. a faster mode of transport) (in production) or stimulate more frequent use of this service (in consumption) (Sorrell & Dimitropoulos, 2008).

Availability of time is a necessary pre-condition to engage in tourist activities and, therefore, a cost in terms of the journey time (Jacobsen, Gössling, Dybedal, & Skogheim, 2018). Maat, van Wee, & Stead (2005) argue that individuals are not primarily interested in actual travel distance but rather in the costs of bridging that distance, i.e. time, money and effort. Technological improvements in tourism have focused on transport because transport technologies (e.g. faster

transport modes) are closely associated with travel costs and, thus, stimulate demand for tourism, enabling particular travel activities to be performed at lower time costs (Prideaux, 2000).

Time is a particularly scarce resource in tourism, which must be allocated among different activities including time en-route (when travelling) and time on-site (at destinations) (Krakover, 2002). Spending more time en-route means cutting into the time budget available for other activities (Maat et al., 2005). In the fixed time budget approach, tourists tend to pack as many activities, experiences and enjoyment as possible without limiting their consumption (Stein, 2012). However, as individual tourists perceive and value time differently in different contexts, e.g. daily life or holiday, it is essential to explore the use of time in tourism to understand tourist behaviour en-route and on-site and its implications for time and then energy use.

Studies on the availability and the use of time in the context of sustainable tourism with respect to tourist consumption are scarce despite their significance in terms of understanding the potential to generate the TRE and produce negative environmental impacts (Santarius, 2012). This study fills in the existing knowledge gap by exploring how novel technologies adopted to save energy and time in tourism may affect the patterns of tourist consumption en-route and on-site in terms of energy use.

Methods

Given the lack of previous research on the topic, the study adopted constructivist principles to explore the varied meanings of time in holiday experiences and its impact on consumption. The snowball sampling strategy was employed to recruit willing participants and the heterogeneous sampling was involved in selecting suitable candidates. 13 semi-structured interviews were undertaken in total, each lasting 56 minutes on average. The number of interviews was determined by the saturation effect. Thematic analysis was applied to the data collected.

Preliminary findings

Participants commonly claimed that unexpected events such as flight delays or long queues at tourist attractions, i.e. time effect, influence their holiday experiences alongside other factors, e.g. money and travel group structure. Regardless of the monetary effect, participants would choose a faster travel option, if available, particularly for long-haul routes (e.g. Europe to Asia), because of the desire to spend more time on-site than en-route (Prideaux, 2000). Given additional time by choosing a faster transport mode, they would engage in extra activities at the destination (e.g. visiting nearby cities) rather than leaving home later or coming back home earlier (Jalas & Juntunen, 2015). While tourists felt a single day of a holiday trip was longer than an ordinary day by not being committed to daily tasks assigned in a timely manner, they felt time was always insufficient on holidays to manage all desired activities (Stein 2012), unless they joined organised tours. Hence, they viewed that time-saving technologies en-route and on-site could reduce time wasting or unnecessary stress, enabling them to maximise their holiday experiences.

Conclusion and research implications

Tourists prioritise quick travel unless all activities are timely arranged by organised tours, and time savings from technological improvements is likely to affect the choice of transport, activities and the length of stay at destinations, thus having potential environmental impacts. This suggests that tourists' experiences should be understood taking time use of individual tourists and impacts of time efficiency gains on their consumption into consideration when discussing strategic issues on the development of sustainable tourism. Identifying the causes and impacts of the TRE in tourism and evaluating its implications for pro-environmental tourist behaviour will contribute to helping to improve sustainability in tourism. This implies that policies and managerial strategies to reduce energy consumption and GHG emissions from specific modes of tourist transport could be tailored around tourist behavioural changes considering the time dimension rather than solely focusing on technological solutions. These implications, however, are derived from initial interviews and require validation through more robust sample.

References

Hall, C.M. (2015). Economic greenwash: On the absurdity of tourism and green growth. In M.V. Reddy & K. Wilkes (Eds.), *Tourism in the green economy* (pp.339-358). London, England: Routledge.

Jacobsen, J.K.S., Gössling, S., Dybedal, P., & Skogheim, T.S. (2018). Exploring length of stay: International tourism in south-western Norway. *Journal of Hospitality and Tourism Management*. 35, 29-35.

Jalas, M., & Juntunen, J.K. (2015). Energy intensive lifestyles: Time use, the activity patterns of consumers, and related energy demands in Finland. *Ecological Economics*, 113, 51-59.

Krakover. S. (2002). Time dimension and tourism development in peripheral areas. In S. Krakover & Y. Grandus (Eds.), *Tourism in Frontier Areas* (pp.21-37). Lanham, ML: Lexington Books.

Maat, K., van Wee, B. & Stead, D. (2005). Land use and travel behaviour: expected effects from the perspective of utility theory and activity-based theories. *Environmental & Planning B: Planning & Design*. 32(1), 33-46.

Prideaux, B. (2000). The role of the transport system in destination development. *Tourism Management*, 21, 53-63.

Santarius, T. (2012). *Green growth unravelled: how rebound effects baffle sustainability targets when the economy keeps growing*. Berlin, Germany: Heinrich Böll Foundation and Wuppertal Institute for Climate, Environment and Energy.

Sorrell, S. & Dimitropoulos, J. (2008). The rebound effect: microeconomic definitions, limitations and extensions. *Ecological Economics*, 65, 636-649.

Stein, K. (2012). Time off: The social experience of time on vacation. *Qualitative Sociology*, 35(3), 335-353.