Developing Health Tourism in Healthier Rural Areas: the Role of Matrix-resources

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Abstract

In the last 15 years, environmental medicine research has highlighted the negative effects of urban pollution on human health. Despite this, no review of the medical literature has emerged to examine the different forms of pollution and to assist in the development of tourism innovation in rural areas. The main objective of this paper is to understand if the presence of safety, clean air, silence, dark at night, and other (matrix) resources –defined as opposites of various forms of pollutants– may act as additional resources for companies and rural tourist destinations that wish to innovate their supply through the development of health and wellness tourism. This paper analyses the results of environmental medicine through the lens of a "resource-based view" of the firm (R-BV). It was thus possible to identify a range of 7 matrix-resources with the required characteristics. A wide series of health and wellness tourism experiences –lasting from 1 to 8 weeks– can be proposed as a tool for sustainable economic development of firms operating in those rural areas that have the right resources, whether or not they are already endowed with wellness infrastructures.

Keywords: *health and wellness tourism, matrix resources, resource-based view, rural tourism, tourism innovation, tourism development.*

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1. Introduction

This study analyses seven social and natural resources defined as “luxus of our time” (Enzensberger, 1999; De Masi, 2004): sense of perceived safety in the district of residence, social and emotional ties, presence of clean air, silence, slow life, dark at night and rural landscape. Despite the historical importance of these resources, the relationship between their presence / absence and the mental and physical health was considered by bio-medical research only in the last two decades. Some of these resources encompass the concept of countryside and are an integral part of tourism brochures and catalogues. Nevertheless, there is a current lack of studies analysing such a range of resources in order to verify the possibility of developing health tourism in rural areas based on the Resource-Based View - R-BV (Penrose, 1959; Barney, 1991; Wernerfelt, 1984, 2011).

Following the R-BV theory, only resources that are "valuable", "rare", "inimitable" and "non-substitutable (hereinafter called VRIN), can become a source of competitive advantage defensible over time for tourist destinations and enterprises. Through the application of the R-BV, the use of two most popular biomedical research databases and the development of a condensed literature review the present paper identifies not only the relationship between the widespread scarcity of the above mentioned resources and the presence of a number of diseases, but also the health benefits obtained from the use and enjoyment of the same resources where they exist for even short periods of time. This study is still in its infancy and more in-depth research is currently conducted. Nevertheless, it is already evident that these resources can be used in the development of new health tourism experiences in rural areas with the possibility to achieve a defensible competitive advantage.

2. Theoretical framework

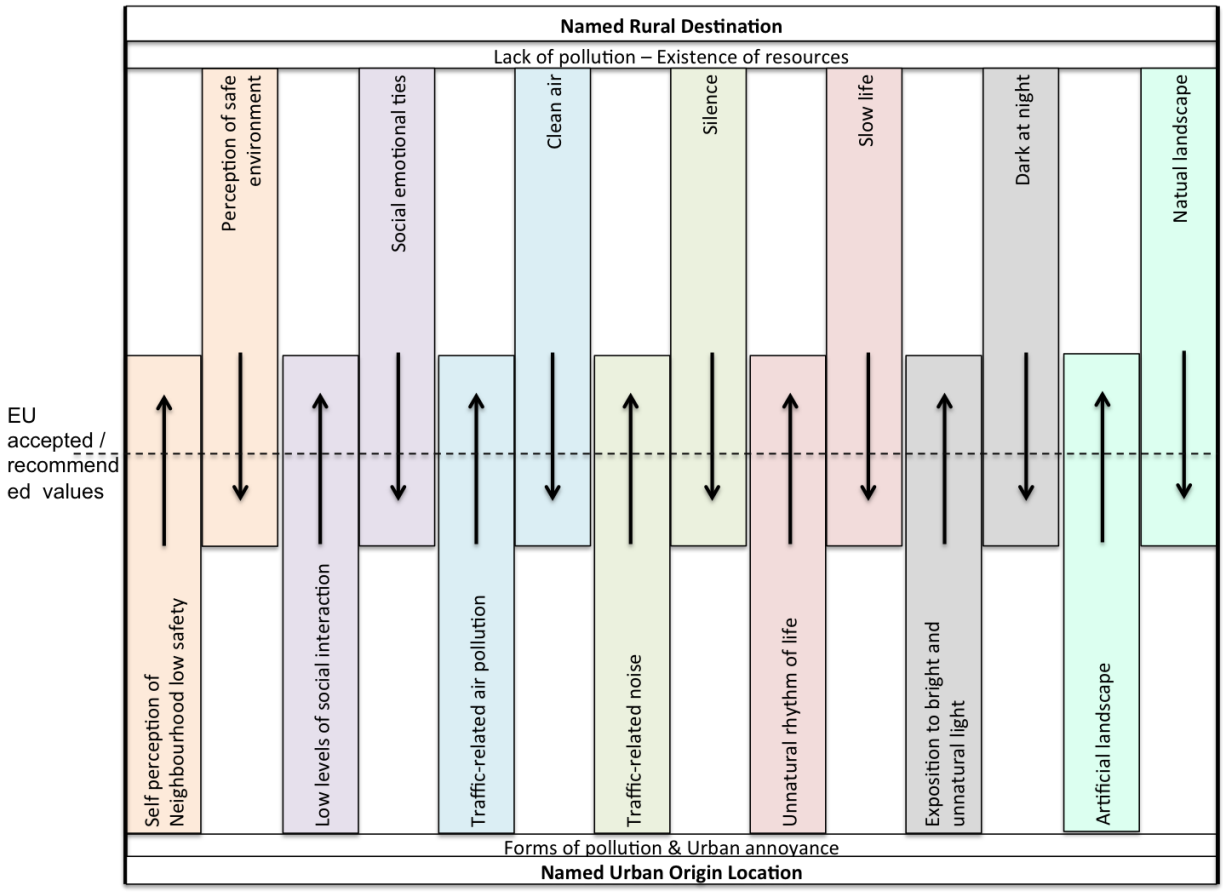
The theoretical section of this study presents the four main concepts used for the analysis: the VRIN model, "matrix-resources", countryside, health & wellness tourism. The authors propose the concept of "matrix-resources" to identify environmental and cultural factors –proven to be effective medical therapies– that exist more frequently in rural and marine areas and that can be used for the development of sustainable health tourism and as a possible defensible competitive advantage.

2.1. Resource-Based View: from VRIN model to Matrix Resource-based View

According to the resource-based view, not all the resources of a firm are able to generate competitive advantage or “sustained” competitive advantage. Only ‘valuable’, ‘rare’, ‘inimitable’ and ‘non substitutable’ assets can deliver both (Barney, 1991). That is the so called VRIN model. Resource valuability represents the first attribute a resource should have to become a source of sustained competitive advantage. “Firm resources which are considered ‘valuable’ - whose value is recognized outside the firm - may become sources of competitive and sustained competitive advantage” (Barney, 1991, p. 106). Thus, the resource becomes valuable when some of the harmful effects on health, as proven by medical research, that derive from its scarcity has been scientifically demonstrated. Valuable

and widespread resources can increase homogeneity across firms (Barney, 1989), can improve the probability of economic survival (Porter, 1980), but do not bring ‘sustained’ competitive advantage to a specific firm. The concentration of pollution in the metropolitan areas may become a proxy of perceived *rarity* within the urban origin location. Many of the resources considered in this paper are, by definition, essential for human life, that is, they are not imitable or substitutable. Not all urban areas lack resources for human life, however, nor do all rural areas possess resources that generate a sustained (defensible) competitive advantage, in contrast to urban life. The result is a matrix of resources that shows whether these are lacking in urban areas and, conversely, present in rural areas endowed with the right characteristics. Figure (1) shows a graphical example on how the concepts of urban pollution and matrix resources complement each-other.

Figure 1. The complementarity of matrix resources



(Source: Droli, Osti)

1.2. Rural areas, Rural tourism and the concept of Countryside

Despite the concept of "rural area” has been introduced as a subject of research since decades, there is no a un unique and widely accepted definition. The OECD, whose definition is the only one internationally recognized, defines as ‘rural’ any area (town) that has less than 150 inhab./km². The

potential for innovation that this paper aims to explore concerns the predominantly rural areas, that is 75% of the land and 20% of the population in the OECD countries (OECD, 2006).

In rural areas, economic development is often synonymous with 'tourism'. The appeal of rural places for vacation and leisure time is determined by its intrinsic rural characteristics (Kastenholz *et al.*, 1999; Sharpley and Sharpley, 1997; Albaladejo Pina and Díaz Delfa, 2005), as well as the range of quality services, facilities and attractions. Rural tourism can include activities related to farms, nature, adventure, sport, health, arts and heritage, living customs, belief and family traditions. Kastenholz *et al.* (2012) underline how rural areas are perceived in contrast to urban areas and argues that the small scale of settlements and buildings together with the amount of open space filled with rural flora and fauna provide to tourists leisure and recreation activities in an environment that "lacks of stress factors typical of urban areas (pollution, congestion, noise, and tight timetables)" (Kastenholz *et al*., 2012, p. 208). Other environmental factors as e.g. low-quality transport infrastructures may limit economic development within rural areas (OECD, 2006).

Coeteris paribus, the positive relation between rural areas and wellness tourism is demonstrated by Chen *et al.* (2008), who found that the top four motivations for choosing a wellness holiday are: relaxation, pursuing multiple activities, recreation and enjoying nature. In this context, countryside capital plays a key role. Garrod *et al.* (2006) analysed the interconnections between rural tourism and countryside capital and described the constituent elements of countryside capital as shown in Table 1.

Table 1: Elements of countryside capital

Elements
Landscape, including seascape
Wildlife, both fauna and flora
Biodiversity
Geology and soils
Air Quality
Hedgerows and field boundaries
Agricultural buildings
Rural settlements, from isolated dwellings to market towns
Historical features, historic buildings, industrial remnants
Track, trails, bridleways, lanes and roads
Streams, rivers, ponds and lakes
Water and water quality
Woods, forests and plantations
Distinctive local customs, languages, costumes, foods, crafts, festivals, traditions, ways of life

Source: Garrod *et al. (*2006)

Often the resources listed in the table 1 are depicted in travel brochures or holiday advertisements either on the web or in print as 'natural beauties' and leisure attractions to attract tourists' interest for a specific destination.

Here we are not suggesting that the quality of the touristic experience in a rural milieu would depend solely on the quality of the countryside capital that frames it. Beside the natural resources, rural tourism usually benefits of high quality service and customer care together with good accessibility and information.

Garrod *et al.* (2006, p. 119) argues that the natural elements are yet not fully exploited because the countryside capital assets are often neglected when considering 'the quality of the rural tourism experience'. More recently, scholars argue that countryside capital can contribute to the building of a distinctive identity, uniqueness, and attractive 'biocultural fingerprint' (Chang *et al.*, 2010) to help an effective promotion of rural tourism destinations, firms and public-private networks.

1.3. Health and wellness tourism

Although travelling for the purpose of enhancing personal well-being is not a recent phenomenon (Pearcy *et al.* 2011), health and wellness tourism can be counted among the most promising markets in the tourism industry (Pechlaner and Fischer, 2006). There is a general agreement that health tourism can be divided into medical tourism (travels to find relief or cure a specific medical issue), and wellness tourism (journeys by people in good health with the purpose of maintaining their well-being), (Pearcy *at al*., 2011).

The original definition of health given by the WHO in 1958 was in terms of "wellness as physical, mental and social well-being, not merely the absence of disease" (Pechlaner and Fischer, 2006, p. 67). Nowadays, wellness tourism includes "elements such as self-responsibility, physical fitness / beauty care, healthy nutrition / diet; relaxation (need for distressing) / meditation, mental activity /education and environmental sensitivity /social contacts" (Pechlaner and Fischer 2006, p. 67). Health and wellness tourism can therefore be regarded as a form of tourism which seeks well-being for both body and soul.

2.Literature review

This section presents some data on the relationship between the physical and mental health of urban population and 1. Safety; 2. Conviviality; 3. Clean air to breathe, 4. Noise pollution; 5. Unnatural rhythm of life; 6. Light pollution; 7. Landscape.

2.1. Unsafe Vs safe self-perceived neighbourhood

Some research indicates that self-perception of neighbourhood low safety can: a) act as a 'potential barrier' to physical exercise for adults and elderly people (Tucker *et al.*, 2009); b) accelerate the functional deterioration of elderly people (Sun *et al*., 2012). As stated by Sun *et al.* (2012) till 2012 limited studies had investigated the relationship between perception of neighbourhood safety and functional decline in urban population. Sun *et al.* (2012) found that in a 10 year period, 10,338 participants (53.9% of the sample) experienced functional decline, of which 50.2% among those who

perceived their neighbourhood to be very safe, 61.2% of those perceiving it moderately safe, and 63.6% to be unsafe. The relationship between health and safety perception is proven for all age groups within urban areas (rarity). In fact Weir, Etelson & Brand (2006) found that the perception of a safe environment is a crucial element for the increase of physical activity for both inner city and suburban children.

From the opposite side, several studies have confirmed the relationship between walkability of the surroundings in which one lives (even if only temporarily) and exercise (Strath *et al.*, 2012).

2.2. Loneliness Vs conviviality

On the one hand, "lower levels of social network, support and isolation are related to various aspects of physical and mental disease, and to rates of mortality" (Berkman & Kawachi 2000; Stansfeld 2006). On the other hand, there is an inverse relationship between higher levels of social network and support and morbidity, coronary heart disease and cause specific mortality rates (Ruberman *et al.*, 1984; Orth-Gomer & Johnson 1987; Hoppmann & Gerstorf 2009; Mead *et al*., 2010). Thus conviviality represents a *valuable* resource. Several research studies use the *'possibility to meet one's friends on a daily basi*s' as an efficient indicator of external conviviality (outside the family). In Italy, this indicator scores 27% in villages below 2.000 inhabitants, *24,2%* in towns with 2-10.000 residents, *23,9%* in towns with 10-50.000 inhabitants and 16,1% in metropolitan areas, according to the national bureau of statistics (ISTAT, 2008).

2.3. Polluted Vs clean air to breathe

Despite its relevance, the effect of traffic-related pollution has been under-researched for a long time. As stated by Brauer *et al*., (2003) "A substantial fraction of the variability in annual average concentrations of air pollution was explained by traffic-related variables" and with respect to health effects, the particulate matter is the most commonly investigated traffic-related air pollutant. Typical urban road traffic and congestions play an important role in the health of residents. Wjst *et al.*, (1993) state that "Road traffic in big cities seems to have a direct effect on pulmonary function and respiratory symptoms in children" and Weiland *et al.* (1994) demonstrate a strong correlation between automobile exhausts and asthma symptoms and allergic rhinitis in children. According to WHO (2010), "urban outdoor air pollution caused more than 1.1 million deaths in 2004, mainly from heart and lung diseases" (p. 17).

On the opposite side (of the matrix resources), studies have recognised the benefits of experiencing a three-week stay in the high mountains for the treatment of allergic asthma (Karagiannidis *et al.*, 2006). More recently, studies have determined the relationship between a simple one-week stay in a mountain resort and improvements in the parameters of pulmonary ventilation and reduction of symptoms in asthmatic children (Da Ponte *et al.*, 2012).

2.4. Traffic-related noise pollution Vs silence and tranquillity

As underlined by Ising & Kruppa (2004) "in the past, a relatively low sound level of ambient noise was not considered a potential health hazard." More recently the WHO has recognized that environmental noise may represent a harmful pollution that causes adverse psychosocial and physiologic effects (i.e., annoyance and sleep disturbance) on human health, especially in children. To this regards the WHO (2011) states that "Excessive noise seriously harms human health and interferes with people's daily activities at school, at work, at home and during leisure time. It can disturb sleep, cause cardiovascular and psycho physiological effects, reduce performance and provoke annoyance responses and changes in social behaviour." http://www.euro.who.int/en/what-we-do/health-topics/environmental-health/noise. Berglund *et al.* (1999) discovered that during the daytime 40% of European population is exposed to Leq > 55 dBA, 20% exposed to Leq > 65 dBA, and 30% exposed to Lmax > 55 dBA during the night. Passchier-Vermeer, and Passchier (2000) found that noise exposure can induce hearing impairment, hypertension and ischemic heart disease, annoyance, sleep disturbance, and decreased school performance, especially within urban areas.

On the opposite side, the benefits of *sleep therapies* are known since the 1950s, several of which can be obtained also during a short vacation (Scholtz, Steinberg, 2011).

2.5. Un-natural Vs natural rhythm of life

According to the European Foundation for the Improvement of Living and Working Conditions (2007), the number of evening, night and weekend workers has been steadily increasing. Today, the relationship between shift working and major vascular disease is established in the literature. Some observational studies have reported an increased risk ratio for vascular morbidity, vascular mortality, or all cause mortality in relation to shift work (Vyas *et al.*, 2012). Shift-work influences circadian cycles which are linked to basic cellular functions, as well as to tissue-specific processes through the control of gene expression and protein interactions. Dis-regulation of circadian rhythms may influence the susceptibility to cancer development (Gery & Koeffler, 2007). Further studies also discovered that female shift workers may be at higher risk of heart disease (Tranmer, 2011).

Further studies (Piazza *et al.*, 1998), demonstrate the possibility to restore the normal sleep/waking rhythm in children with mental retardation through cycles of chronotherapy for a period of 11 days in places suitable for physical activity.

2.6. Light pollution Vs dark at night

Academic and medical literature, normally uses the term "light pollution" to indicate the exposure of human beings to bright and unnatural light during night hours (Reppert & Weaver, 2002). In modern societies, daylight hours have been extended by 4 to 7 hours a day, however this gain in functioning throughout the night has come with significant repercussions on cancer, mood, and obesity (Fonken & Nelson, 2011). Kloog *et al.* (2010) analysed the average night-time illumination levels from

164 countries and found a significant positive association between light at night (LAN) level and incidence rates of breast cancer. They found that the risk of breast cancer is 30-50% higher in countries with the highest LAN exposition compared to countries with the lowest LAN exposition.

Recent studies conducted on mice indicate that nights without lights can eliminate in 4 weeks part of the metabolic disorders caused by dim light at night (Fonken *et al.*, 2012).

2.7. Artificial Vs natural landscape

Since the 1980s research has produced a significant literature that dwells on health and natural landscape. Negative effects of urban landscapes have been widely recognised by the medical literature and summarised in a thorough review by Velarde *et al.* (2007).

On the opposite, positive aspects of natural landscapes can be summarized as the Stress recovery theory (Ulrich *et al.*, 1991) where stress is defined as a process where well-being is challenged but possibly prevented and even reduced by the contact with natural scenery. A second theory regards the concept of healing gardens (Sherman *et al.*, 2005; Ulrich, 1984). This approach emphasizes the recovering aspects of those places whose specific features encourage people to relax and free their minds while in a natural milieu, such as healing gardens. Similarly, Gesler (1992), Kearns and Gesler (1998), Arcury *et al.* (2005) state that certain natural environments can promote mental and physical '*bien-être'* and identify the role played by the natural environment "whether this entails fresh air, pure water of the countryside or magnificent scenery" (Gesler, 1992, p.736) as an ideal setting for a range of personal and health benefits. Furthermore, Brown and Bell (2006) have recently analyzed the concept of 'medicalization of nature'. The idea is to raise awareness on the fact that poor air quality, traffic, lack of green areas and recreation facilities in big cities may compromise citizens' health also in the developing countries. Natural environment-based health tourism experiences can therefore be promoted to prevent diseases and avoid stress while enjoying the aesthetic properties of nature during short as well as medium-period stays.

3. Discussions

This study is still in its infancy, however the wider medical literature demonstrates the value of resources such as clean air, tranquillity, silence, darkness at night; the actual lack of resources in urban areas shows their scarcity. The consequent medical conditions show the inimitability and non-substitutability of these resources.

In managerial terms, any rural area with abundance of these matrix resources can therefore exploit those resources to create competitive advantage and develop health and wellness tourism in response to the increasing needs of urban inhabitants.

Figure (2) shows how health and wellness tourism can create sustainable development of rural areas through environmental, economic, social strategies and destination management practices.

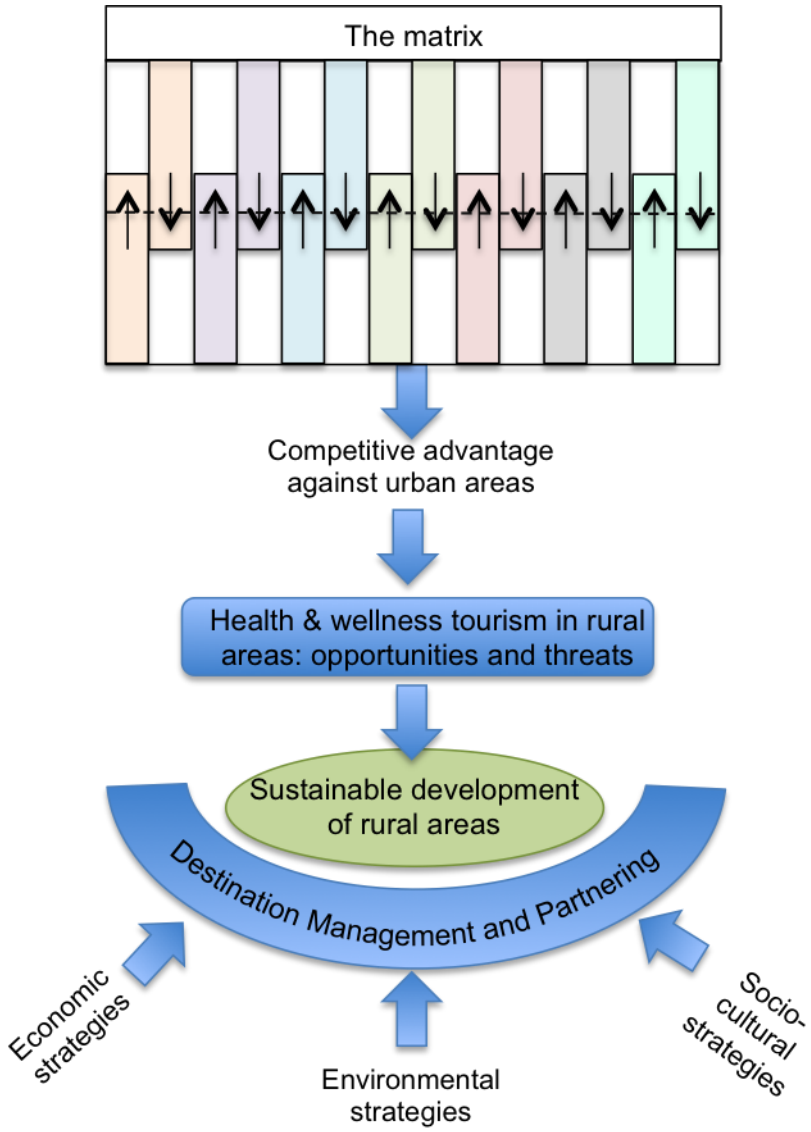
Environmental strategies are needed to preserve those natural resources that create competitive advantage. Furthermore, such strategies are needed to proactively take care of the natural environment so that competitive advantage is not only kept in contrast to urban areas, but also to other rural areas with similar natural resources.

Any sustainable development foresees the economic value of any activity. Indeed, tourism in general plays an important role in countering the declining incomes from traditional farming sources (Cawley and Gillmor, 2008). Therefore, local municipalities and public entities should develop economic strategies whereby local residents are encouraged to invest in health and wellness tourism. This can be done through the allocation of private and public funds for the conversion of available buildings into accommodation infrastructures. Italy has developed a number of schemes based on this idea, generally known as 'Albergo Diffuso (literally translated as "Scattered Hotel") (Droli, Dall'Ara, 2012, UNDP, 2008).

Finally, to be sustainable any development plan should also encompass a protection of the local inhabitants and their culture and identity. In fact, one of the most important motivations of rural tourism is also a wish to "return to the origins and the "authentic", often associated with a certain nostalgia per the 'good old days'. (Kastenhoz *et al.*, 2012, p 207).

Environmental, economic and social strategies are essential for the development of health and wellness tourism. They can also show the willingness of the public administration to support such initiatives and offer a framework of guidelines for the private businesses who want to invest into this type of tourism. Nevertheless, the core of health and wellness tourism encompasses accommodation and food infrastructures, partnering, marketing and IT capabilities and innovation. These are all elements of destination management. Destination management is the fundamental tool for the correct and successful development of health tourism in rural areas. When the rural destination has constraints in its development (economic ones, for example), resource enhancement may be achieved through destination partnering strategies between private and public actors (Droli, 2007).

Figure 2: Health Tourism as sustainable development of rural areas



Conclusions

Abundant research on the association between specific forms of pollution and disease is in progress, but the issue is often controversial. Despite this, the risks associated with environmental pollution remain real. The wider medical literature demonstrates not just the damage resulting from pollution, but also the value of resources such as clean air, tranquillity, silence, darkness at night; the actual lack of resources in urban areas shows their rarity. The consequent medical conditions show the inimitability and non-substitutability of these resources. Thus, these 'matrix-resources' may be intended as sources for sustained competitive advantage but they are due only in part to the concept of "natural resource". The natural resource-based view of the firm (Hart, 1995) has illuminated the resource-based view of the firm on the importance of natural resources in order to defend the competitive advantage. However, this theoretical spill-over underestimates the importance of competitive constraints posed by social and

cultural environment. The concept of matrix-resource has allowed us to analyze both natural and socio-cultural resources.

At the same time, the concept of countryside capital highlighted the interconnections between rural tourism and countryside as a resource. Despite this, most of the sources of sustained competitive advantage we have identified (except clean air) are not listed in a clear way among their constituent elements. This work has allowed us to include resources whose absence has a scientifically-demonstrated impact on human health such as: *darkness at night, silence, self-perceptions and secur*ity among the constituent elements of countryside capital.

The authors reject the equation between rural areas and the existence and integrity of the matrix-resources being considered. In other words, there are rural areas where these resources are lacking and there are urban areas in which they are abundant. The authors of this work believe that the use of the 'matrix-resource' concept as a tool of analysis may offer useful insights to estimate the competitive advantage and/or disadvantage of rural businesses and tourism destinations.

The R-bv indicators used by this first work are not many, and this constitutes a limit. However, the business, which gauges the consistency of the resources available, is able to identify the asymmetries in competition for new resources, according to Wernerfelt (2011). Methods and measurement issues represent a recurrent theme within the R-bv literature. Molloy, *et al.* (2011) developed a theory-driven multidisciplinary assessment process (MAP). This approach integrates the complementary perspective of economics and psychology. Despite this, it does not offer useful insights to connect tourism economics and more general environmental medicine issues. This work paves the way for further analysis, to focus on the competitive advantage of rural businesses and tourism destinations through the joint use of matrix-resources, resource-based view and medicine research.

Note:
The following sessions were written by **both authors**: *Introduction; Theoretical framework*
The following sessions were mainly written by **Droli**: *Literature review, Conclusions*
The following session was mainly written by **Osti**: *Discussion*.

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