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Assessing the benefits of slow mobility connecting a cultural heritage

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ABSTRACT

The Southern surroundings of the metropolitan city of Milan up to the province of Lodi (in Lombardy region, in the North West of Italy), represent a very interesting area hosting religious sites (cloisters and abbeys), historic and naturalistic heritage. Actually, it is only connected by roads for motorized mobility, while pedestrian paths and cycle lanes are disregarded. In order to increase the accessibility and to connect the diffused heritage, in 2015 an infrastructural project for slow-mobility (bikers and pedestrians), titled “Cammino dei Monaci” (Monks’ Route, henceforth CdM), has been developed by the Politecnico di Milano. The aim of the present paper is to estimate the benefits related to the CdM slow-mobility project, through the Contingent Valuation Method (CVM), and therefore the willingness to pay (WTP) declared by the 472 families, living within 3.75 km of the path. These benefits are expected to be intangible for the most: they are both environmental, in terms of reduced motorized mobility and increased quality of life, and cultural, due to the improved promotion of the historic and religious heritage system. Besides, they concern not only the “users” of the infrastructures, but also the “potential” users and the “non-users” (Litman, 2016, 2015, 2013, 2011). The results of the CVM show that the collective benefits outweigh the costs to develop the CdM, thus suggesting that the project is feasible and represents a good opportunity for the development of whole area. Furthermore, the paper fills the gap in the literature, since the CVM method has been mainly applied for evaluating environmental and cultural goods. Seven sections compose the paper. After the introduction, Section 2 describes the project, while Section 3 presents a brief literature review on the CVM. Section 4 is dedicated to the methodology, and specifically to the application of the CVM to the case-study. Section 5 focuses on data and descriptive statistics. The results of the econometric analysis follow in Section 6, while Section 7 provides some discussion and policy recommendations.

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1. Research aims

The “Cammino dei Monaci” (CdM) slow-mobility project, settled in the southern part of Metropolitan city of Milan up to the border with Emilia Romagna Region, connects historic, religious and naturalistic sites, thus generating both environmental and cultural benefits, which have no market. Furthermore, these intangible benefits concern not only the “current users” of the infrastructures, but also the “potential users” and the “non-users”.

Within this framework, the present paper aims to assess the main benefits of the CdM project, through the application of the

Contingent Valuation Method (CVM). According to this method and to the NOAA Panel guidelines, a survey has been carried out in 2015 by Politecnico di Milano, among the citizens of the project area (identified within 3.75 km of the path and not belonging to the same family unit), who were asked about their willingness to pay (WTP) for the project to be realized. Specifically, the non-market benefits resulting from the realization of the CDM have been monetized by measuring the average WTP, declared by the interviewees, and by multiplying it by the number of family units living within the affected area.

2. Introduction

The area including the Southern neighbourhoods of the Metropolitan City of Milan, the province of Lodi (in Lombardy region, in the North West of Italy), and the border with Emilia Romagna Region (North East of Italy), hosts religious sites and a rich historic and naturalistic heritage. Since this area is only connected by roads for motorized mobility, a slow-mobility infrastructural

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project, labelled “Cammino dei Monaci” (Monks’ Route, CdM), has been planned in 2015 by the DASTU⁴-Politecnico di Milano, with the aim of realizing pedestrian and bicycle paths, achieving sustainable mobility for local trips and increasing the population’s “green attitude” [1,2]. Furthermore, because of the abundant historic, naturalistic and religious heritage, the CdM slow-mobility project could also increase the green and religious tourism demand, and better connect all the minor scattered cities, which might thus share competences and tourism facilities.

Like in any other public good, the benefits associated with the CdM slow-mobility project are intangibles for the most: they are both environmental (i.e. reduced congestion, pollution, noise and increased quality of life), and cultural (i.e. improved promotion of the historic and religious heritage). Besides, as any biking facility, the CdM concerns not only its “users”, but also the “potential users” and “non-users”, who are positively affected in terms of reduced external costs like, e.g. noise and pollution [3,4].

The aim of the present paper is to assess the benefits resulting from the CdM project realization, and, due to its peculiarity of non-market good, thus generating environmental and cultural benefits, a Contingent Valuation Method (from now on, CVM) has been applied. In doing so, the scant existing literature on the application of CVM to transport infrastructures projects has been enriched.

A survey has been carried out in 2015 among the families living in the project area. In particular, they were asked about their Willingness To Pay (WTP) for the project to be realized. The data collected have been elaborated through a descriptive statistics; besides, an econometric analysis allowed to estimate the bid function for the project. Moreover, other questions in the test enabled a check for *consensus* about the project and to investigate the different components of the Total Economic Value (current use; potential use; option; non-use: existence and bequest), mainly used for evaluating environmental and cultural goods [5–8]. After the initial pre-test stage with 74 respondents, a sample of 472 individuals (not belonging to the same family unit) has been interviewed by means of face-to-face questionnaires. This is a representative sample of the family units living within 3.75 km of the trail (left and right side).

The average WTP has been estimated by means of Dichotomous Choice models. As expected, people’s preferences are consistent with the (neoclassical) economic paradigm of the law of demand: if the bid goes up, the probability of a positive answer goes down.

Besides, the respondents who would use the CdM path for a pilgrimage,⁵ are more favourable to a higher WTP, the same is true for those recognizing the CdM project’s existence and option values. The total amount of benefits coming from the project is obtained by multiplying the average estimated WTP by the number of family units living in the affected area. It results that the benefits outweigh the costs, thus suggesting that the project could be a very good opportunity for the improvement and development of the whole area.

The paper is structured as follows. After the introduction and the project description (Section 2), a brief literature review on CVM application to mobility infrastructure evaluation is provided in Section 3. Section 4 presents data and methodology, while descriptive statistics and the results of the CVM follow in Sections 5 and 6, respectively. The last section provides discussion and policy recommendations.

⁴ DASTU stands for Department of Architecture and Urban Studies.

⁵ The southern part of the CdM crosses the Via Francigena, an ancient road and pilgrim route connecting Canterbury (UK) to Rome, passing through France.

3. The “Cammino dei Monaci” project

The CdM project, developed by DASTU-Politecnico di Milano in 2015,⁶ is a slow-mobility infrastructure, mainly built along the 67.2 km of existing roads connecting the South of Milan to the border of the Emilia Romagna region, where it meets the Via Francigena, an ancient road and pilgrim route running from Canterbury (UK), passing through France, up to Rome. Historically, the area crossed by the project has always had an agricultural specialization originating from the industrious population working in the fertile Po valley,⁷ Milan itself was mostly provided with the products of the valley, and the goods were delivered on the waterways. As a consequence of the long presence of the monks in the abbeys and cloisters of this area – which gives the name to the project – many religious reminders of that period still exist. Besides, the trail is in a predominantly rural location,⁸ and passes through 40 small municipalities with a rich naturalistic, religious and historic heritage that should attract visitors, tourists and pilgrims; on the contrary, the area hosts only few tourism commodities like catering and accommodation.

The aim of the CdM project is thus twofold:

- to plan a slow-mobility infrastructure in order to make bikers and pedestrians travelling safer and more comfortably;
- to develop a complex network of stakeholders (municipalities, local and religious institutions, productive activities, tourism commodities etc.) in order to exploit this complex but promising cultural heritage.

To this aim, the following six areas, quite homogeneous in terms of vocation and attractive resources, have been identified:

- Milano delle Basiliche (Milan of the cathedrals), the southern part of the centre of Milan, rich of cathedrals and ancient roman and medieval ruins (i.e. “San Lorenzo alle Colonne”, “Sant’Eustorgio” and “San Nazaro in Brolo”);
- Milano Cistercense (Cistercian Milan), the southern part of the periphery of Milan, with industrious abbeys (i.e. Chiaravalle abbey and hamlet, Viboldone and Mirasole abbeys);
- Melegnano town, where history meets rural and environmental quality;
- Sant’Angelo Lodigiano village, a rural district, with many farmsteads and livestock resources;
- San Colombano al Lambro village, with a different view from the hills, a fortress, little hamlets and plantations devoted to viticulture;
- Sigerico village, an ideal village comprising 4 little villages (Senna Lodigiana, Orio Litta, Ospedaletto Lodigiano and Calendasco) that in the past hosted the Pilgrims going to Rome through the Via Francigena route.

4. Literature review on the CVM for assessing slow-mobility infrastructures

In recent years, Environmental Economics has stressed the importance of the concept of Total Economic Value (TEV) for capturing use (both current and potential) and non-use values of natural and cultural resources [5,6,9]. When dealing with slow-mobility infrastructures like functional or recreational cycling paths, dif-

⁶ The “Cammino dei Monaci” is part of a more comprehensive network project titled MATERCULT, funded by Fondazione Cariplo.

⁷ The Po river in the North, is the longest (652 km) and the most important river in Italy.

⁸ About 75% of the area is not urbanised according to the official data provided by ISTAT (Italian National Institute of Statistics, see footnote 13) for 2011.

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