The tourism economics of marginal and mature mountains. The case of the Regional Park of Corno alle Scale (Apennines), Italy

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Abstract

This study outlines a methodological procedure for assessing the economic impact of alternative territorial development projects in small areas by investigating the Regional Park of Corno alle Scale, in Northern Apennines, Italy. This is a Marginal and Mature Mountain (3M) destination suffering from displacement and population ageing since the 1980s and now attempting to regenerate its economy through tourism-based development projects. This process requires a prior understanding of the tourism impact on the local economy and the tourists' behavioural intentions and attitudes, both issues addressed by this paper. Findings from a visitors' survey undertaken in 2019-20 are merged with Input-Output tables to build a local Tourism Satellite Account, enabling to estimate the contribution of tourism to the local economy. This way, the economic impact of alternative development projects can be assessed, thus informing policy-makers on investments that can reshape local development but endanger natural and socio-cultural resources.

Keywords: Sustainable tourism; Mountain protected areas; Territorial development; Ski resorts; Tourism Satellite Accounts; Economic contribution of tourism.

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1. Introduction and theoretical framework

Tourism is acknowledged as a path towards economic and local development, especially in marginal areas such as mountain territories (Debarbieux, 2014; Richins et al., 2016). In rural areas, the relatively low-skilled nature of tourism employment contributes towards job creation (Lun et al., 2016; Mair, 2006). However, tourism also threatens natural resources and wildlife (Geneletti & Dawa, 2009; Pickering & Hill, 2007; Stevens, 2003), especially for mass tourism hosted by ski resorts (Patthey et al., 2008; Sato et al., 2013). Sustainability, ecotourism, and responsible travel have become crucial concepts to identify practices of tourism development that simultaneously increase visitors' satisfaction, contribute to economic growth, and reduce negative impacts on the environment and on the local community (Bošković et al., 2020; Butler, 1999; Briassoulis, 2002; Ghaderi & Henderson, 2012; Mair, 2006; Marzouki et al., 2012).

Mountain tourism generates 15-20% of total flows worldwide (Richins et al., 2016), and in Italy, it counts for 12 million arrivals and 51 million overnight stays (Istat, 2020). However, mountain tourism is an umbrella term describing different situations and locations. For example, Italy's Apennines are strikingly different from the nearby Alps. While the Alps have a central position in Europe, offering 7 million bed places and 10,000 cable cars, attracting about 100 million visitors, and generating a value-added of about €50 billion per year (Baumgartner, 2017), the Apennines are instead a vast, fragile, and diversified territory. The Northern section of the Apennines, bordering Emilia-Romagna and Tuscany, hosts many small resorts, mainly developed as ski areas in the 1960s during the Italian economic boom. Since the 1980s, these areas were progressively abandoned due to the population ageing, the obsolescence of hospitality structures, the competition arising from the nearby Alps, the affordability of exotic destinations, and the general crisis of ski tourism also stemming from more frequent lack of snow (Bonzanigo et al., 2016; Steiger et al., 2019; Tardivo et al., 2012; UNWTO, 2018).

The Apennines are a paradigm for what we define Marginal and Mature Mountains (3M throughout the paper). Such areas have been suffering from displacement and population ageing for several generations and are currently attempting to regenerate their economy through rejuvenation projects. Mature destinations are often characterised by encrusted interests, lack of innovation, and difficult access to financial markets. These areas need a strong strategy of public intervention, where contrasting projects and ideas often clash, bringing political tensions locally, and delaying the identification of the strategy to pursue. Territorial regeneration must also be coupled with sustainability, reflecting the need to identify new development patterns in the context of the climate crisis.

Two main paths, representing opposite ends of a continuum, emerge from the literature discussing rejuvenation strategies in mature mountain regions (Snowdon et al., 2000). One, the *hard tourism* approach includes growth-oriented strategies carried out by ski resorts that invest in large-scale and capital-intensive facilities (cable cars, new skiing areas, hotels) and/or in diversifying their offer developing year-round attractions and activities (mountain bike itineraries, sledging, wellness centres, theme parks). Development is associated with weak local linkages, greater economic dependence on tourism, and strong environmental impacts. UNWTO (2018) lists many examples: from the *Tatry Mountain Resorts* (p.71) to the French winter resort *Flaine* (p.105) to *Cervinia* in Italy.

Two, the *soft tourism* approach focuses instead on small-scale enterprises and promotes tourism as a sector respecting the community and the environment, integrated into a diversified local economy. It implements slow, responsible, and community-based tourism concepts to regenerate the economy and promote sustainability in deep connection with the environment. Interestingly, such cases have been studied less extensively than ski resorts, with examples considering cycling tourism (Gazzola et al., 2018) and nature-based tourism (Draper, 2000).

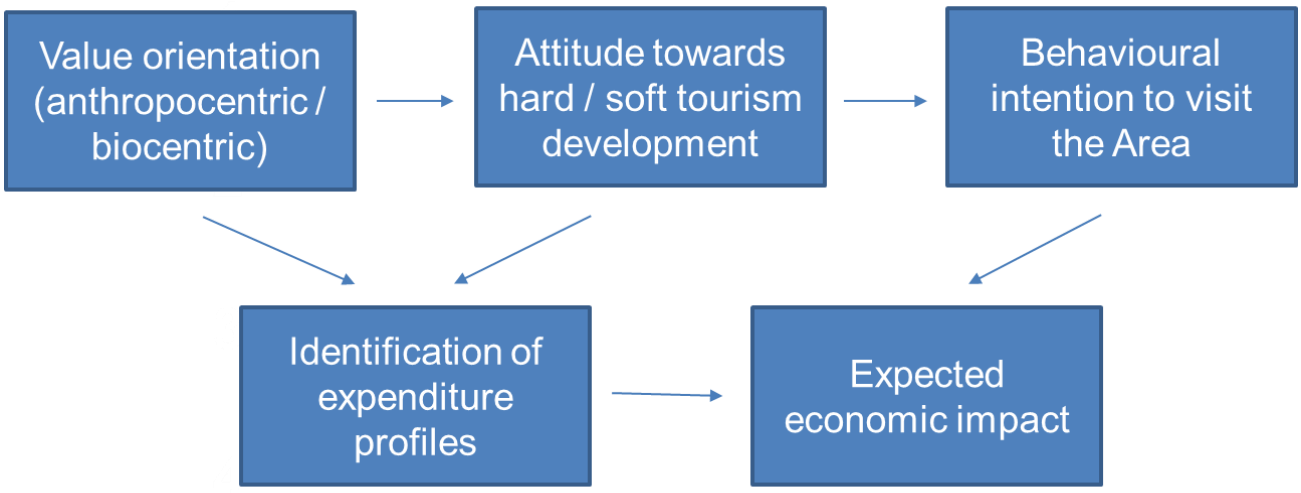
Undoubtedly, identifying the best strategy to pursue depends on local conditions, and a strong dichotomy appears between the highly competitive mountain resorts in the European Alps and marginal destinations, such the ones in the Apennines. In this respect, it is fundamental to investigate the behaviours and preferences of tourists in 3M destinations, explicitly linking the different projects of hard v. soft rejuvenation with their economic impact. Although understanding visitors' spending is crucial to plan development strategies aimed at maximising value-added to the local economy, knowledge in the mountain tourism literature is still limited (Lima et al., 2012). Generally, downhill skiing is associated with the highest expenditure compared to all other activities: Fredman (2008) and Witting & Schmude (2019) find that skiers' spending is three times higher than hikers'. This mainly stems from the higher cost of staying in a ski resort, buying expensive ski-pass, and participating in the associated social activities, while hikers often adapt to basic accommodation (Wilton & Nickerson, 2006). Although income generation is identified with attracting high-spending tourists, the real situation is much more complex, as intermediate production costs and linkages with the local economy can affect the economic multiplier and shift the balance between hard and soft tourism initiatives (Alegre et al., 2011; Lima et al., 2012; Snowdon et al., 2000).

The economic impact of development projects stems from the expenditure pattern of tourists (Kuščer et al., 2017), which in turn depends on behaviours, attitudes, and values, as explained by a large stream of literature (Brown et al., 2010; Han et al., 2010; Sparks, 2007; Yuzhanin & Fisher, 2016). Kim & Stepchenkova (2020) provide evidence supporting the Value-Attitude-Behaviour cognitive hierarchical structure. Personal values (beliefs that guide the selection of behaviours according to a set of priorities, Schwartz et al., 2012) determine attitudes, representing the application of values to specific situations (Rokeach, 2008). According to the Theory of Planned Behaviour (TPB, Ajzen, 1991), attitudes are one of the three main determinants of behavioural intentions, the other two being the subjective norm and the

perceived behaviour control. Thus, behaviours can be predicted by looking at intentions as stronger intentions are more likely to lead to action (Ajzen, 1985).

The application of TPB to the environment allows to identify three types of values: egoistic, social-altruistic, and biospheric (Stern & Dietz, 2008). While egoistic-driven individuals consider environmental protection according to the outcomes to self (engaging if it benefits them, opposing if it requires personal costs), the other two types are based on costs and benefits to others (social-altruistic) or ecosystems (biospheric). Given these premises, TPB well adapts to the specific case of a 3M destination, thereby constituting our conceptual framework of reference (Figure 1). We investigate the behavioural intentions of tourists looking at their attitudes if specific projects, built within the range of hard v. soft tourism, are developed. The economic consequences of behavioural intentions are derived from the actual spending pattern of different types of tourists, in line with the methodology presented in the next section.

Figure 1. Conceptual framework



In this framework, our case-study is the Regional Park of Corno alle Scale ("the Area" throughout the paper), a protected territory of the Apennines bordering Emilia-Romagna and Tuscany regions in Italy. The Area has seen a stark decline in arrivals and overnight stays over

the years, while low occupancy rates and the low number of skiers highlight the crisis of the current bi-seasonal tourism model, based on skiing in winter and open-air activities in summer. The reboot of tourism in the Area is at the top of the local policy agenda, but identifying investment projects to pursue requires reliable information to be collected and precise scenarios to be developed.

Our contribution is three-fold. First, we survey visitors to identify expenditure patterns, preferences, and main activities undertaken during different seasons of the year. This is prodromic to our second contribution, the development of a local Tourism Satellite Accounts (TSA), built by merging survey findings with Input-Output tables (IOT). The TSA estimates the impact (direct and indirect) of several tourism segments on the local economy. This way, our third and most important contribution, the economic impact of alternative development projects can be assessed, thus informing policy-makers on investments that can reshape local development. Our contribution's novelty is to evaluate the economic impact of alternative tourism policies in 3M destinations and set up a methodological procedure based on a mix of survey and TSA / IOT analysis that can be easily replicated and extended to other similar areas.

2. Data and Methodology

2.1 The case-study

The paper uses a quantitative case-study methodology for descriptive and exploratory aims (De Urioste-Stone et al., 2018; Yin, 2014). The area under investigation is the Regional Park of Corno alle Scale, Northern Apennines, Italy. The description of the Area is of relevance because it is illustrative of the 3M paradigm: it is mature because tourism mainly developed in the 1950s and 1960s, and nowadays, most of the structures are obsolete; it is marginal because it is outside the international flow of tourists characterising the nearby Alps; it is a “completely

mountain territory" according to the Italian legislation, with the highest peak being at 1945 m.a.s.l. Moreover, the case study provides exploratory material to test the alternative strategies of hard/soft tourism along the lines recalled in the previous section.

The Area extends for 570sq. km and covers seven municipalities over two regions connected through a national road. It can be accessed from Lizzano in Belvedere (Emilia-Romagna), north-side, and Doganaccia (Tuscany), south-side (Appendix, Figure A.1). Like other 3M destinations, the Area features an ageing population (30.6% of residents is over 65 years of age, compared to 22.8% of Italy), a negative demographic balance (-4.42%, in the 2011-2018 period, compared to +1.77% in Italy), and lower incomes (the per-capita income in 2018 is respectively 8.63% and 16.91% lower than per-capita income in Italy and Emilia-Romagna).

From a tourism perspective, during the period of economic affluence in the 1950s and 1960s many families living in cities nearby bought holiday homes in the Area. The opening of the small ski resort of Corno alle Scale in 1984 contributed to tourism demand growth, reaching its peak in 1993 (126,522 arrivals and 518,316 overnight stays). Since then, numbers have declined to 117,294 arrivals and 356,947 overnight stays in 2018. This is mirrored by the shrinking number of hospitality structures (from 146 in 2007 to 111 to 2018), their low occupancy rate (12% in 2018, while the figure is 43% in Courmayeur and 38% in Canazei, two important resorts in the Alps, ISPAT, 2019), and a low rate of utilisation of ski lifts (in the 2018-19 ski season, there was an average of 228 ski passes sold daily, against 3,248 of Courmayeur and 4,317 of Cortina d'Ampezzo, Macchiavelli, 2019). Moreover, the ski resort is subject to sub-optimal climatic conditions: the low elevation and latitude, joint with usual windy conditions, cause a relatively low number of skiing days per year (108 in 2018-19 season, personal communication).

2.2 Research questions

The exploratory value of the case under investigation stems from the existence of alternative projects, currently discussed at the local and regional level and associated with rejuvenation strategies that can be linked to hard and soft tourism strategies recalled above. On the one hand, local institutions pursue the renovation and enlargement of the ski resort through the construction of a cable car connecting Corno alle Scale, northbound (currently with five ski lifts) and Doganaccia, southbound (with three ski lifts) and the replacement of existing structures (Protocollo d'intesa, 2016). The project is strongly supported by tourism operators and the local population but opposed by environmental associations and grassroots movements because of the environmental impact and the uncertainty caused by climate change impacts on ski tourism. This strategy of *hard tourism* can be summarised by what we define *Project A* in the paper:

Project A – Renovation and enlargement of the ski resort with the demolition of some of the existing ski lifts, renovation and improvement of others, and construction of new ones, especially a cable car connecting the Tuscany area (Doganaccia) with the Emilia area (Corno alle Scale) of the Park.

Associations and environmental groups support an alternative idea of tourism development, although not formalised in an institutional project, focused on the extension of the web of trekking paths, mountain huts and supply of local products, especially wine & food, jointly with the promotion of activities like horse riding, cycling, and snowshoeing. This strategy of *soft tourism* can be summarised by *Project B* in the paper:

Project B – Territorial regeneration through the dismission and demolition of existing ski-lifts, re-naturalisation of the Area, and the construction of an "Outdoor Park" (Casanova, 2017), disconnected from downhill ski, and integrated with a development plan based on slow and widespread tourism activities.

To represent the continuum between hard and soft tourism, we also test the relevance of a mid-way strategy of development, which considers a certain degree of investment in the ski resort (renovating existing plants but without the new cable car connecting the two sides of the mountain), but also the promotion of different activities to be offered throughout the year. This intermediate strategy is *Project C* in the paper, defined as follows:

Project C – Intermediate development plan, with the partial renovation of existing ski lifts and the parallel development of different activities of slow tourism, including the empowerment of naturalistic and cultural itineraries.

In the literature, projects such as Project A, based on massive investment in fixed capital and the intensive use of the territory, are considered less environmentally sustainable but more conducive to economic growth and employment generation than projects of type B or C (Snowdon et al., 2000). The present research focuses on the economic dimension of tourism projects, leaving the environmental and the social dimensions of sustainability temporarily aside. Thus, the main research questions driving our analysis are the following:

RQ1: What are the expenditure patterns of tourists visiting the Area in different seasons and undertaking different activities?

RQ2: To what extent do tourists' attitudes influence their behavioural intention to visit the Area when alternative projects are developed?

RQ3: What is the expected economic impact of the hard tourism development strategy (project A) compared to soft tourism (Project B) and the intermediate strategy (project C)?

2.3 Data

Data come from a survey submitted to a representative sample of visitors in the Area, stratified by type of visitors (day-trippers vs tourists), time of the visit (summer vs winter vs other seasons), and accommodation structure (commercial accommodation vs holiday homes).

One of the authors directly submitted the survey to 500 subjects interviewed during six visits to the Area between March 2019 and February 2020 (hence, the data collection was not disrupted by the Covid-19 pandemic). Table 1 reports the sample composition. The survey included four sections: the first aimed at collecting socio-demographic characteristics of the respondents, the second inquired about the characteristics of the trip, the third asked questions on the type and amount of expenditure during the trip (hence addressing RQ1), the last part asked questions related to attitudes towards future development projects for the Area (thus addressing RQ2).

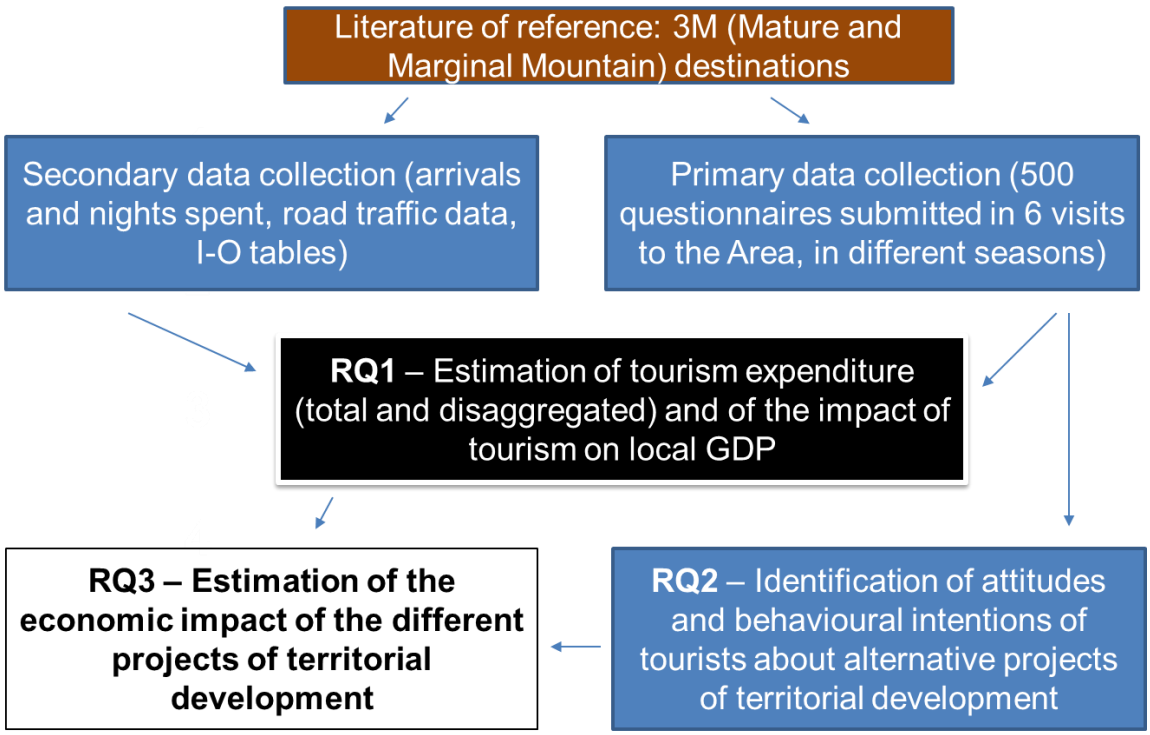
Table 1. Sample composition

Respondents	***April 2019***	***July 2019***	***August 2019***	***October 2019***	***December 2019***	***January 2020***	**Total**
Tourists	22	81	103	13	28	46	293
Day trippers	33	33	50	30	27	34	207
Total	**55**	**114**	**153**	**43**	**55**	**80**	**500**

Two other data sources were used to investigate RQ3 and merged with the outcome of the survey: one, official statistics (ISTAT, 2020) on the number of tourists (arrivals and nights spent) by region of origin and month of the visit were used to translate individual values of per-capita spending estimated from the survey into total values of tourism expenditure. Two, existing Input-Output Tables (IOT) (available at https://ec.europa.eu/eurostat/web/esa-supply-use-input-tables/data/database) and Tourism Satellite Accounts of Italy (available at https://www.istat.it/it/files//2017/12/StatisticaReport_CST2015_Allegato_26022018.xlsx) were used to estimate income generated from tourism in the Area and to estimate the economic impact of projects A-C. IOT are a widely used tool representing inter-industry relationships within the economy. When fed with data of tourism expenditure collected in the survey, they can be used to build a sort of local Tourism Satellite Accounts (TSA), from which the direct, indirect, and total contribution of tourism to value-added can be estimated. Figure 2 shows the

workflow diagram used for this research, connecting data collection with the research questions.

Figure 2. Workflow diagram



2.4 Methodology

Methodologically, three main issues had to be tackled. One, since official statistics only consider arrivals and overnight stays at commercial (hotel and non-hotel) establishments, they underestimate tourism activities because neither day-trippers nor visitors staying overnight in family homes or hosted by friends or relatives are detected. These flows are allegedly significant for 3M destinations and specifically for the Area, given its proximity to important cities (Bologna, Modena, Pistoia) and the relevant number of holiday homes. Correctly estimating these two aggregates is key for constructing a representative sample. We proceeded by using motor traffic data coming from sensors positioned in approaching roads (available at https://servizissiir.regione.emilia-romagna.it/FlussiMTS/) and by assuming that differences in

transit compared to mid-week days in the low season were triggered by traffic of visitors. These figures were compared to official arrivals and overnight stays to estimate the use of holiday homes. Differences at different times of the day in the two road directions were also used to estimate the numerousness of day-trippers compared to tourists. The merging of these estimates with official statistics led to the sample stratification reported in Table 1, which was also checked for consistency through quick questions posed to random people approached in the Area during the days of the visit.

The second issue connects with identifying the visitors' value orientation towards alternative territorial development projects. Specifically, the running of a choice experiment was discarded because, after the pre-test trial, the difficult conditions in which the survey would be administered (open-air, sometimes in windy or snowy conditions, or with subjects not willing to dedicate much time to the interview) were considered unfit. Instead, we decided to estimate value orientation by looking at general attitudes as signals for behavioural intentions, coherently with the TPB framework (Ajzen 1991). We submitted to participants 10 specific statements related to their attitude about features and characteristics that could be associated, alternatively, to different projects. These questions, evaluated on a Likert scale from 1 (strongly disagree) to 5 (strongly agree) are reported in Table 2. We then built individual attitude scores and calculated value orientation means to assign each subject to positive/negative behavioural intentions for each project.

The last methodological issue was related to estimating the economic contribution of tourism. This is usually done using IOT and TSA, which rarely exist at the sub-national level and for local areas. In the case under investigation, we used the Italian IOT and TSA, also considering that the Area's productive structure is more similar to the National one than those of Emilia-Romagna and Tuscany, regions specialised in advanced manufacturing and services.

Table 2. General attitudes toward territorial development – Summary statistics

Statement	Mean	Stand. dev.	Share of disagreement*	Share of indifference*	Share of agreement*	Associated project
1. Historical and cultural itineraries should be empowered	3.95	0.82	6	17	77	B
2. Improvement of the hospitality offer would drive me to undertake more activities	3.47	1.04	23	13	64	C
3. The network of mountain huts / cabins should be improved	3.67	1.00	15	20	65	B & C
4. An adventure park, a snowpark or the like should be developed	3.41	1.21	23	15	62	C
5. Itineraries for snowshoeing or for ski-alpinism should be improved	3.75	0.88	6	31	62	B
6. A new cable car, connecting the Tuscany and the Emilia sides of the Area, should be built	3.36	1.21	24	22	55	A
7. New ski lift to enlarge the skiing area should be built	2.92	1.12	33	35	33	A
8. Existing ski lifts should be renovated / empowered	3.47	1.01	15	35	51	A & C
9. Snowmaking facilities are harmful to the environment**	2.74	1.02	45	33	22	
10. Looking at ski lifts in the landscape is disturbing**	2.19	0.93	75	14	10	

Notes: * Share of disagreement considers subjects answering 1 and 2; Share of indifference considers subjects answering 3; Share of agreement considers subjects answering 4 and 5. ** The interpretation of statements 9 and 10 should be reversed, as they assume a negative value orientation.

3. Results

Due to space constraints, we only focus on three aspects directly connected with our research questions: the expenditure pattern of visitors, the definition of the local TSA, the economic impact of alternative development projects.

3.1 The expenditure pattern of visitors

Expenditures reported in the questionnaire were adjusted by party size and length of stay and then channelled into the typical TSA structure. Table 3 reports daily per-capita expenditure for the whole sample and two critical breakdowns: tourists vs. day-trippers and winter vs. summer vs other seasons visitors. Notice that the total number of observations used for this analysis (435) is lower than the whole sample size (500) due to the unwillingness of some

respondents to disclose monetary values and avoid some internal inconsistencies. A visitor spends on average about €27 per day, and this low value is due to three overlapping reasons: one, the high number of day-trippers or tourists staying in non-commercial structures, which brings down the most relevant component of expenditure: accommodation; two, most visits do not trigger consumption activities (for example, a typical one-day summer trekker leaves only €13 in the territory); three, the moderate price level, which is partially stemming from the obsolescence and the low quality of structures. In this respect, a tourist staying in a hospitality structure spends on average €38 per day (Table 3, first column), compared to about €100 in the Alpine region of Trentino (ISPAT, 2019).

Table 3. Average expenditure (daily and per-capita) by product categories and type of visitors

	Daily per-capita expenditure (€)					
Products	**Tourists**	**Day trippers**	**All visitors**	**Winter visitors**	**Summer visitors**	**Other visitors**
Accommodation	17.23	0	**8.59**	11.92	8.59	3.79
Food and beverages	10.27	8.80	**9.53**	11.74	8.18	11.07
Transport	1.26	2.48	**1.87**	2.91	1.45	1.84
Rent services	0.41	0.08	**0.25**	0.42	0.21	0.12
Travel agencies and intermediation	0	0	**0**	0	0	0
Cultural activities	0.09	0	**0.04**	0	0.74	0
Sport and recreational activities	3.46	2.19	**2.82**	10.97	0.21	0.14
Shopping	5.15	3.28	**4.21**	4.92	3.73	4.87
Total	**37.87**	**16.83**	**27.33**	**42.88**	**23.11**	**21.83**
Nr observations	*217*	*218*	***435***	***106***	***256***	***73***

3.2 The local Tourism Satellite Account

Next, we multiply the per-capita expenditure of each type of visitor (including day-trippers and tourists staying in their properties) by the respective number of estimated arrivals and nights

spent. Such values of tourism consumption are then fed into IOT and TSA, normalised according to official data about local GDP and value-added. Results, reported in Table 4, show that tourism consumption is 4% of local production, in line with the Italian value (Istat, 2017). If we subtract intermediate consumption (provided by TSA and IOT), we can calculate the contribution to the local GDP (which is slightly more than €500MM): €18.4MM. We then use Figini and Patuelli (2021) procedure to estimate the total contribution to local GDP (adding indirect effects to the direct impact), which results in €39.4MM, or 7.85% of local value-added. The local TSA used for the computation is available in Appendix B.

Table 4. Summary of the Tourism Satellite Accounts for the Area

List of products	**Local Output* (in €)**	**Tourism Consumption** (in €)**	**Share of tourism consumption*** **
A. Characteristic products	**128,992,144**	**36,396,261**	**28.22**
1. Accommodation services	74,903,821	18,287,947	24.42
1.a- Hotel and similar	*12,893,511*	*12,466,489*	*96.69*
1.b- Second homes – own account of free	*62,010,311*	*5,821,458*	*9.39*
2. Food and beverage serving	26,704,158	11,405,956	42.71
3. Interurban railway transport	1,948,680	100,000	5.13
4. Long distance road transport	4,814,805	1,509,388	31.35
5. Rental services	5,315,945	358,820	6.75
6. Travel agencies and other reservation services	1,472,639	559,603	38.00
7. Cultural services	4,537,306	370,476	8.17
8. Recreational and sport services	9,294,790	3,804,072	40.93
B. Non-characteristic products	**929,848,327**	**6,251,141**	**0.67**
TOTAL (A + B)	**1,058,840,471**	**42,647,402**	**4.03**
Intermediate consumption (C)	557,242,881	24,338,468	
Direct value-added, basic prices (A + B – C)	**501,597,590**	**18,367,684**	**3.67**
Total value-added (direct + indirect, basic prices)	**501,597,590**	**39,377,242**	**7.85**

Notes: * The value of local output is calculated pro-quota from the Italian IOT, considering the ratio between Value-added at the national and the local level. ** Tourism consumption is computed adding the value under (1b) to tourism expenditure estimated from the survey; *** The share of tourism consumption is the ratio between tourism consumption and local output.

3.3 The economic evaluation of alternative projects

The construction of the local TSA helps estimate the economic impact of alternative development projects by informing on the number of visitors that can be attracted in each scenario. Since these are hypothetical scenarios, we must make use of stated preferences. We proceed by first estimating visitors' attitudes for each of the three projects and then estimating each project's income and employment impacts, using the expenditure profile of visitors with positive attitudes. As regards this last point, we apply simplified multicriteria analysis (Bezzi et al., 2007) and analytic hierarchy process (Saaty,2001), already applied in tourism literature (Hsu et al., 2009; Chen, 2006; Park & Yoon, 2011). Preferences for projects are not directly stated by respondents but are indirectly deducted from questions on general attitudes. We start from the respondents' level of agreement/disagreement to the statements reported in Table 2. For each answer, we assign the value -1 if the subject disagreed or strongly disagreed with the statement; 0 if the subject was indifferent; +1 if the subject agreed or strongly agreed. We then sum the scores for all the statements that can be reconducted to each project (the association between statements and projects is in the last column of Table 2). We classify the subject as attracted by / in favour of the project if the score is positive while, if the score is negative or zero, the subject is classified as against the project (subjects with negative and indifferent attitudes are pooled together to counteract the “Yes effect” and to simplify the analysis). This method has the advantage of allowing a visitor to have a positive attitude to more than one project. Results are reported in Table 5 and show that projects B and C reach, respectively, 82% and 72% of positive attitudes, 26 and 16 points higher than project A, which is the most divisive, with a relatively high share of negative attitudes (26%).

Table 5. Estimation of the share of respondents with positive or negative attitudes to the projects

	Share (and number) of respondents		
Project	*Positive attitude*	*Indifferent*	*Negative attitude*
Project A (hard tourism)	56% (249)	18% (80)	26% (116)
Project B (soft tourism)	82% (363)	13% (56)	6% (26)
Project C (intermediate tourism)	72% (320)	13% (57)	15% (68)

We then cross subjective characteristics (provenience, length of stay, party size) with official arrivals and overnights to estimate the absolute number of visitors with positive and negative attitudes to each project. Next, we apply the local TSA previously built to each project, considering the expenditure profiles of the subjects. These data are reported in Table 6 and show that subjects with a positive attitude for Project A (56%, see Table 5) compose 59% of total expenditure, while those with a positive attitude for project B (82%) only compose 68% of expenditure; finally, subjects in favour of project C are 72% and compose 63% of expenditure. The relatively higher economic contribution of supporters of project A stems from two factors: one, the greater propensity to spend of visitors attached to project A, especially for recreational and sports services, which includes ski-passes; two, on average, they stay longer (3.1 days, compared to 2.7 days and 2.8 days of visitors supporting projects B and C respectively). Nonetheless, expenditure of visitors in favour of project B still generates more income (€31.7MM, 6.5% of value-added, Table 6), while the corresponding values for projects A and C are, respectively, €27.1MM (5.5%) and €29.1MM (5.8%).

Once Table 6 is generated, it is possible to estimate the projects' expected economic impact, depending on how many visitors will translate their positive attitude in corresponding behavioural and spending intentions, attracted by the new available activities. Symmetrically, it depends on how many visitors will translate their negative attitude in reducing the length of

stay or stopping visiting the Area, because they dislike the new developments. As this information cannot be deducted from the survey, we used the general attitudes of respondents (reported in Table 5) and their expenditures (calculated in Table 6) as proxies for behavioural intentions.

Table 6. The economic contribution of subjects in favour of each alternative project

List of products	Expenditure of subjects in favour of project A (in €)	Expenditure of subjects in favour of project B (in €)	Expenditure of subjects in favour of project C (in €)
A. Characteristic products	**20,039,305**	**23,981,632**	**21,996,765**
1. Accommodation services	7,182,233	10,612,611	9,102,970
1.a- Hotel and non-hotel sector	*7,182,233*	*10,612,611*	*9,102,970*
1.b- Second homes – own account or free			
2. Food and beverage serving	8,240,250	9,059,262	8,414,685
3. Interurban railway transport			
4. Long distance road transport	837,096	1,139,537	828,844
5. Rental services	149,760	236,605	200,996
6. Travel agencies and other intermediation services			
7. Cultural services	200,259	118,067	116,543
8. Recreational and sport services	3,429,907	2,815,550	3,332,727
B. Non-characteristic products	**5,188,515**	**4,932,917**	**4,932,734**
TOTAL (A + B)	**25,227,820**	**28,914,549**	**26,929,500**
Total, including other components of tourism consumption*	29,934,375	34,814,579	32,368,024
Share of total tourism expenditure**	59%	68%	63%
Share of total output***	2.4%	2.7%	2.5%
Value-added, direct and indirect effect (basic prices)	**27,142,655**	**31,724,482**	**29,174,872**
Share of total value-added****	5.5%	6.5%	5.8%

*Notes: * We add, pro-quota, the tourism consumption component associated with the value of services provided by holiday homes and public administration. ** From Table 4, about €43MM *** From Table 4, about €1 billion. **** From Table 4, about €500MM.*

We build three scenarios. We assume that the absolute increase of visitors is the same for each project in the first one. Specifically, Scenario 1 of Table 7 considers an increase of 50,000

visitors (realistic, given the size of current tourism flows, which account for 367,000 visits and 983,000 overnights) with the same expenditure profile of respondents with positive attitudes for each project. In Scenario 2, we assume an increase of 25% in the number of visitors with positive attitudes for each project. Scenario 3 assumes that subjects with positive attitudes increase by 50% while those with negative attitudes decrease by 50%. In all scenarios, the expenditure pattern, the length of stay, and the share of day-trippers and tourists with positive and negative attitudes do not change within each case. Results of this simulation are reported in Table 7 (the complete procedure used to merge these scenarios into the local TSA is reported in Appendix C).

Table 7. The economic impact of three alternative projects: comparison of three scenarios

	Project A			**Project B**			**Project C**		
	Impact on output (€MM)	Impact on value-added (€MM)	Impact on employment (full-time equivalent employees)	Impact on output (€MM)	Impact on value-added (€MM)	Impact on employment (full-time equivalent employees)	Impact on output (€MM)	Impact on value-added (€MM)	Impact on employment (full-time equivalent employees)
Scenario 1: visitors with positive attitudes increase of 50,000 units	+13.2	+6.0	120 ~ 140	+12.7	+5.7	115 ~ 135	+12.7	+5.7	115 ~ 135
Scenario 2: visitors in with positive attitudes increase by 25%	+15.7	+7.1	140 ~ 160	+18.5	+8.4	170 ~ 190	+17.0	+7.7	155 ~ 175
Scenario 3: visitors with positive attitudes increase by 50% and those with negative attitudes decrease by 50%	+15.5	+7.1	145 ~ 165	+29.7	+13.5	280 ~ 300	+23.8	+10.8	220 ~ 240

The results of Table 7 require some comments. One, assuming an equal shift up in the number of visitors (Scenario 1), the highest economic impact is in project A (generating €6MM of value-added). Annually, this would produce +1.2% of local income. The total impact on employment would be around 120 / 140 full-time equivalent jobs: a precise estimate is not provided as most of the people who are currently working for the tourism sector do not work

full time (e.g., waiters, ski instructors, naturalistic guides), and hence they might absorb part of the employment effect via increases in their personal incomes. In Scenario 1, the impact of projects B and C are very similar but lower than project A's impact (we remind that the average expenditure of supporters of project A is higher).

The picture changes when moving to scenarios based on percentage changes in the number of visitors (Scenario 2). In this scenario, projects B generates the highest economic returns (€8.4MM of new income, with 170 – 190 new full-time equivalent jobs). Project A would produce instead €7.1MM of new income and 140 – 160 jobs, with project C lying in between. Finally, if a given share of visitors with negative attitudes for a given project decided not to visit the Area anymore (Scenario 3), results would abruptly change. By assuming that tourists with positive attitudes increase by 50%, but tourists with negative attitudes decrease by 50%, project A would generate the worst economic outlook by far. In this scenario, project B's economic gains would almost double project A's, generating over €13.5MM of income (€7.1MM in project A) and about 290 new jobs (155 in project A). Again, economic results for project C lie in between.

4. Discussion

The results of the simulation presented in the previous section are the core of this investigation, and allow a general discussion on future perspectives for 3M destinations. A first remark addresses the contraposition between economic-friendly and environment-friendly projects (the hard and soft tourism introduced above). It is often the case that, at the political level (but also in scientific discourse, see Gurung & DeCoursey, 2000; Snowdon et al., 2000; Bonzanigo et al., 2016), projects based on the intensive exploitation of the territory are assumed to generate more economic benefits than projects based on sustainable and slow tourism, mainly

because of the higher willingness to spend of the former segment of tourists. This is why (hard) projects of this type are nowadays still dominant (Bonzanigo et al., 2016). Recent projects for expanding ski resorts have been proposed in Italy, both in the Alps (e.g., Via Lattea, Val Pusteria, Cortina, Cervinia) and in the Apennines (e.g., Terminillo, Monte Acuto, Ovindoli). These plans stress the economic advantages of massive investments if increasing tourism flows and business performance are forecasted.

Our results suggest that there are two shortcomings to this line of thinking. One, a significant number of visitors might disagree with the intensive exploitation of natural resources stemming from new investments in the ski resort. Hence, as shown in some of our scenarios, they might decide to change destination to visit, thereby washing away the economic gains of hard tourism investments. Such outcome is consistent with the increase of tourism demand for greener destinations (UNEP, 2011), which is skyrocketing in the pandemic age (Apse et al., 2020; Baek et al., 2021; Castanho et al., 2020), and with skiers more likely to uphold pro-environmental attitudes (Peterson et al., 2008; Thapa, 2010). On the aesthetic level, capital intensive projects might reduce the ski area's value and, therefore, attractiveness for visitors (Rice et al., 2021).

Two, hard projects are very risky investments, as snow shortage and other adverse conditions stemming from climate change are projected to continue in the future. There is evidence that climate change affects more heavily destinations at low latitudes and elevations (Gössling & Hall, 2006; Scott et al., 2019), and the literature supports evidence of spatial and activity substitution by part of skiers. This is often overlooked in the feasibility plans of investment projects (Agrawala, 2007; Dawson et al., 2013; Landauer et al., 2012; Rutty et al., 2015; Steiger et al., 2019), allegedly inflating the profitability of investments in new ski-lifts and cable cars. Snow production costs will also increase (Dawson et al., 2009), making operations in some low-elevation resorts unviable as early as the 2030s (Dannevig et al., 2020) and increasing the opportunity cost of alternative and more environmental-friendly projects. Therefore, relying

only on winter sports such as ski tourism might not be competitive enough nor economically viable (Bošković et al., 2020), especially for 3M destinations. Our investigation reflects this, as respondents who practice downhill skiing show the highest propensity to change destination because of climate and snow conditions. As a consequence, more balanced and sustainable projects can be winners also from the economic side. It is also important to emphasise that we only focus on the expected economic impact of the projects, without any evaluation of the environmental impact, intuitively more critical for hard tourism projects.

A second important remark is related to the daily expenditure of ski tourists, which is almost double than the trekking tourists' one (€43 vs €23, Table 3), in line with previous findings (Fredman, 2008; Witting & Schmude, 2019). Although more spending does not necessarily translate into higher value-added, as ski activities have higher operational costs (Pickering & Buckley, 2010; Scott et al., 2006), this comparison highlights that the economic sustainability of projects based on nature and slow tourism also depends on the expenditure pattern of tourists. Most trekkers and other non-skiers spend very little money on the territory, and, in extreme cases, daily trekkers might stay the whole day in the 3M area without spending, if a packed lunch is brought from home. Hence, to be fully economically viable, soft projects should invest in the variety and quality of activities offered to boost the visitors' willingness to spend for nature-based activities (Snowdon et al., 2000).

5. Conclusions

This study assesses the economic impact of alternative territorial development projects in a Marginal and Mature Mountain (3M) destination, the Regional Park of Corno alle Scale, in Northern Apennines (Italy). Like many similar resorts, this destination is attempting to regenerate its economy through tourism-based development projects. Merging findings from a

visitors' survey undertaken in 2019-20 with Input-Output tables, we estimate the contribution of tourism to the local economy. This way, the economic impact of development projects characterised by alternative levels of exploitation of the territory can be assessed and evaluated in different scenarios, thus informing policy-makers on investments that can reshape local development.

Our contribution has both empirical and methodological implications. Methodologically, we propose a procedure that can be applied to local areas, not only 3M, and that, when Input-Output Tables are available, allows to mimic the construction of local Tourism Satellite Accounts. Not only do such findings identify the contribution of tourism to local production and value-added, but also allow (when the survey captures attitudes and behavioural intentions of visitors) to estimate the economic impact of alternative projects that differ for the intensity of territorial exploitation, ranging from the hard v. soft extremes.

Empirically, we show that individual spending patterns vary significantly across several types of visitors (especially between daily visitors and tourists, and between skiers and hikers) and that hard projects are the most divisive development plans, with a relatively larger share of visitors with negative attitudes who might decide not to visit the Area anymore. Scenarios are built on different assumptions regarding the number of new visitors attracted or pushed away by the projects and then used to estimate the economic impact of those projects. The main result is that hard tourism projects, arguably the least environmentally sustainable because of the intensive exploitation of the territory, are not the first best economically either, under several scenarios. Our results are consistent with the triple-bottom approach, where respect and protection of the territory pursued by the soft tourism approach can go hand in hand with economic viability. Table 8 helps summarise and visualise the main results, linking them with our research questions and with the points raised in the Discussion section.

Table 8. Research questions, results, and implications: a summary

Research question	Empirical evidence	Discussion and implications
RQ1: What are the expenditure patterns of tourists visiting the Area in different seasons and undertaking different activities?	A tourist spends on average €38 per day, much more than a day-tripper (€17). There are great seasonal differences: a winter tourist spends €43 per day, almost twice the expenditure of a summer tourist (€23, see Table 3).	To be fully economically viable, soft projects should invest in the variety and quality of activities offered to boost the visitors' willingness to spend for nature-based activities.
RQ2: To what extent do tourists' attitudes influence their behavioural intention to visit the Area when alternative projects are developed?	Most visitors support all projects, but the hard project (A) is the most divisive: net of indifferent respondents, the difference between positive and negative attitudes is 30 percentage points. The difference is 76 points for the soft project (B) and 57 points for the intermediate project (C) (see Table 5).	Attitudes determine behavioural intentions, and tourists might decide to change the destination to visit, thereby washing away the economic gains of investments that are very divisive. This is nowadays relevant, consistently with the increase in demand for green destinations, which is skyrocketing in the pandemic age.
RQ3: What is the expected economic impact of the hard tourism strategy (project A) compared to soft tourism (Project B) and the intermediate strategy (project C)?	In a scenario where all projects receive the same increase in visitors with positive attitudes, the hard project (A) is slightly more economically advantageous. In an alternative scenario, where visitors with positive attitudes increase by 50% and those with negative attitudes decrease by 50%, the soft project (B) receives the most gains, almost twice project (A) gains.	Policy-makers should learn from the changing attitudes of visitors and the climate crisis to promote innovative development projects in line with the general goal of the green transition. Not only there might be synergy between environmental protection and economic viability, but soft and sustainable projects might be the economic winners, especially in 3M destinations.

The main policy implication of our work is straightforward: the future development of mountain resorts, especially 3M destinations, does not have to be a fight between tourism stakeholders and environmental associations, between economic profitability and protection of the natural resources, between the territory being considered an income-generating resource or a park for the sole amusement of urban citizens. Policy-makers should learn from the changing attitudes of visitors and the climate crisis and promote innovative development projects in line with the general goal of the green and sustainable transition.

This study is not free from limitations, and future refinements should work on three avenues. One, fine-tuning the methodology used to assess the alternative projects and their characteristics: when feasible, choice experiments can lead to more precise estimations of visitors' willingness to pay. Two, since estimates of economic impacts strongly depend on the assumptions of the number of new visitors attracted and pushed away by future projects,

transfer functions could help extract data from destinations that recently undertook similar development projects. Three, our approach might be extended to consider the different costs of alternative investment projects, to better estimate their economic profitability.

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