MASTER'S THESIS

RESIDENTS PERCEIVED IMPACTS OF TOURISM AND ITS RELATIONSHIP WITH PERCEIVED RISK OF COVID 19: THE CASE OF CALVIA (MAJORCA)

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ABSTRACT

As an important stakeholder in the development of tourism, the attitudes and perceptions of the residents of destinations towards tourism and tourism impacts are of great importance to the successful development of the tourism industry. Studying residents' perceptions and attitudes of tourism impacts can provide useful guidance for formulating pre-development, planning and post-development operations and management policies of tourist destinations, and ultimately achieving a trilateral harmony and win-win situation for the tourism industry, communities, and residents. The main aim of this research is to investigate the perceptions and attitudes towards tourism impacts of the residents and its relationship with their perceived risk of COVID-19 in Calvia, one of the popular Mediterranean holiday destinations in Spain. Using a sample of 208 residents from Calvia, this study finds that there is a negative correlation between residents' perceived risk of Covid-19 and their perceived positive impacts of tourism and their overall degree of support for tourism, there is also a positive correlation between residents' perceived risk of Covid-19 and their perceived negative impacts of tourism. The results also show that the factor of community attachment and economic dependence on tourism industry of residents are also related with their perceived impacts of tourism.

1. INTRODUCTION

As one of the biggest creators of wealth and employment, tourism has undoubtedly become an important economic sector in many countries and communities. Along with the development of tourism, the positive and negative impacts of tourism have been noticed and studied by many researchers (Almeida-García, 2016). At the same time, research on the perceptions and attitudes of residents towards tourism impacts has become the focus of research in the sustainable development of tourism. Since the tourism industry depends to a certain extent on the friendly attitude of the residents of the destination, for a tourist destination to develop prosperously, it is essential to minimize its negative impacts and it should be considered welcomed by its host community (Ap, 1992). Studies of the residents' attitudes and perceptions of tourism impact can help designing programs and plans to minimize conflicts between residents and tourists and gain resident support of tourist ventures and tourism development (Belisle & Hoy, 1980). The success of tourism depends on the extent to which development programmes are drew up and carried out with the participation and awareness of the host community. In other words, it requires the residents' hospitality (Gursoy et al, 2002). The hosts' anger and mistrust would decrease the possibilities of the revisit of the tourists since it would make them feel unwelcome, active opposition of residents has also been shown to be bad for the development of tourism (Fridgen, 1991). In conclusion, by understanding residents' reactions and factors that affect residents' perceptions and attitudes, it can help to effectively improve residents' quality of life, improve destination planning, promote community participation, and obtain residents' support for tourism development.

As a mature Mediterranean destination which has a long history of mass tourism, the economy of the Balearic Islands is highly dependent on the industry of tourism. The outbreak of COVID-19 in 2020 has caused significantly impacts on the global tourism in terms of many aspects (Sigala, 2020). However, there is very limited studies have investigated the relationship between the residents' perceived risk of the COVID-19 and their perceptions and attitudes towards the impact of tourism development, and there is also limited studies have investigated the general attitudes and perceptions of the residents towards tourism impacts in Balearic Islands. Garcia and Rosello (2004) investigated the overall attitudes of residents in

Balearic Islands towards tourism impacts and tourism development proposals and strategies by using a cluster analysis Bujosa and Nadal (2007) investigated the relationship between tourism congestion and residents' attitudes towards tourism by using Balearic Islands as the case ground and found out that there is a positive relationship between the level of congestion and the residents' tolerance. In the same year, Bujosa and Nadal (2007) investigated the relationship between the density of hotel beds and residents' perceptions towards negative environmental tourism impacts in Balearic Islands and found the same results. Bartolomé and Ramos (2009) investigated the residents' attitudes towards the potential impacts of sports tourism in Balearic Islands and found general positive impacts. So in general, the related research about Balearic Islands all is dated back to a decade ago, the information needs to be renewed especially in this particular circumstance (Covid-19).And this kind of information might be useful for the successful development of the tourism industry in a destination like the Balearic Islands whose economy is highly dependent on the tourism in such a special time. In order to make up for this gap, this research is aimed to use Calvia (one of the most popular destinations in the Balearic Islands) as the case ground to investigate the residents' perceived impacts of tourism there and its relationship with the perceived risk of Covid-19, the study would also investigate the social demographic, community attachment, economy dependence on tourism variables of the residents that have been proved have a correlation with their attitudes in many studies.

2. LITERATURE REVIEW

2.1 Residents' attitudes and perceptions towards tourism

In the 1990s, as sustainable tourism and community development began to gain attention, people gradually realized that the realization of sustainable tourism goals was inseparable from the participation of community residents affected by tourism (Sheldon, 2001), which greatly promoted the development and in-depth research refers to the residents' attitudes and perceptions towards tourism. The focus of these related studies can be divided into the following four categories: residents' perception and attitude of the different kinds of impacts of tourism; residents' perceptions and attitudes towards certain special tourism products;

influencing factors of residents' perception and attitude towards tourism and research on resident group clustering based on differences in perceptions and attitudes.

2.1.1Residents' perception and attitude of the different kinds of impacts of tourism

Tourism, as a complex social phenomenon, has an important impact on tourism destination communities. The earliest research on residents' perception and tourism impact can be traced back to residents' perception of the economic impact of tourism (Getz, 1986; Perver, 1996). Subsequently, more and more researchers have paid attention to cultural (Besculides, 2002), social (Ap, 1990; King et al, 1993; Brunt el al, 1999) and environmental impacts (Liu et al, 1987). And with the development of this kind of research, more and more researchers have been combined these four different kinds of impact in the research of the residents' attitudes and perceptions towards tourism. However, Gursoy (2002) proposed that it's not adequate to investigate the residents' attitudes and perceptions towards the impact of tourism from these four perspectives. He believes that the research should be conducted from the perspectives of cost and benefit and proposed a new theoretical model that consists of nine different variables (Gursoy, 2002; Gursoy, 2004).Table1 shows the residents' perception content of economy, social cultural and environment impact of tourism.

Table1 Residents' perception content of economy, social cultural and environment impact of tourism

	Impacts	Studies
Economic impacts	Tax and income increase, Improved living standards, Increased employment opportunities, Infrastructure improvement, Increased business and investment opportunities, Foreign exchange leakage, Increased cost of living, Shortage of living materials and services	Almeida et al, 2016; Gursoy & Jurowski , 2002; Gursoy & Rutherford; 2004; Hateftabar & Chapuis, 2020; Korca ;1996; MacKay & Campbell, 2004; Bujosa& Nadal, 2007; Monterrubio et al; 2020; Wang & Chen, 2015; Madrigal, 1995; Perez & Nadal, 2005, Tosun, 2002;
Socio-cultural impacts	Community pride, Increased opportunities for cultural communication, Increased opportunities for cultural exchange, Improved level of community	Almeida et al, 2016; Gursoy & Jurowski , 2002; Gursoy & Rutherford; 2004; Hateftabar & Chapuis, 2020; Ap, 1990;

	infrastructure, provides new opportunities and instigates social changes, Over-commercialization, Increasing problems of gambling, crime, prostitution and alcoholism, Traditional culture is destroyed and impacted, Erosion of local language or dialect,	Besculides et al, 2002; Korca ;1996; Brunt & Courtney, 1999; King et al, 1993; Monterrubio et al; 2020; Wang & Chen, 2015; Madrigal, 1995; Perez & Nadal, 2005; Tosun, 2002;
Environmental Impacts	The natural environment is protected, Historical heritage is protected, Maintained the balance of the community ecosystem, Pollution, Destroy wildlife habitat, Heavy traffic, Crowded population	Almeida et al, 2016; Gursoy & Jurowski , 2002; Gursoy & Rutherford; 2004; Hateftabar & Chapuis, 2020; Bujosa& Nadal, 2007; Liu et al, 1987; MacKay & Campbell, 2004; Monterrubio et al; 2020; Wang & Chen, 2015; Madrigal, 1995; Perez & Nadal, 2005

Source: Own Elaboration

2.1.2 Residents' perceptions and attitudes towards certain special tourism products or certain tourism-related events

There are also a lot of researches have been conducted to investigate the residents' perceptions and attitudes towards certain types of tourism products (Cruise tourism, casino tourism, hunting tourism, event tourism, wine tourism, sustainable tourism) and certain tourism-related events or activities (airport construction, land expropriation). Table2 shows the detailed information about some examples of these studies.

Table2 List of examples of studies related to certain special tourism products or certain tourism-related events

Author	Tourism products and tourism-related events	Case ground	Main findings
Soutar et al (1993)	Mega event tourism(America's cup)	Fremantle, Australia,	The actual perceptions of impact is overestimated in terms of the impact of quality of life
Lee et al (2003)	Casino tourism	Kohan and Sabuk, South	Residents' attitudes and perceptions towards casino tourism varies with time

		Korea	period (before and after the casino opening).
MacKay et al (2004)	Hunting tourism	Manitoba, Canada	Majority of the respondents had positive attitude toward hunting when it is for tourism and economic purposes
Maruyama et al (2015)	Ethnic neighborhood tourism	Brazilian town, Japan	Majority of residents have positive attitudes since it provides job opportunity
Xu et al (2016)	Wine tourism	North Carolina, US	Residents have generally neutral perceptions. Residents' socio-demographics and their degree of love for wine have impacts on their perceptions
Toval et al (2015)	Cruise tourism	Gran Canaria, Spain	Residents' perceived it positive in terms of socio-economic impacts and negative in terms of environment and public polices
Zuo et al (2017)	Red tourism	Jinggangshan Scenic Area , China	Trust in central government enhance the residents' support for red tourism
Monterrubio et al (2020)	Airport construction	New Mexico City, Mexico	Majority of the respondents are not supported for the project due to the negative sociocultural and environmental impact outweighs the positive economic impact.
Ma et al (2020)	Land expropriation	Wudaoliang, China	The attitudes of rural residents towards land expropriation would change within three different phases.

Source: Own Elaboration

2.1.3 Influencing factors of residents' perception and attitude towards tourism

Residents' tourism perceptions and attitudes in tourist destinations differ between different communities and at different times and between different groups within the same community. The related studies have found that there are several factors that can have effect on the residents' attitudes and perceptions towards tourism: Resident sociodemographic characteristics, Sense of belonging to the community or length of residence, The dependence of personal economy on tourism, The life cycle of a tourist destination, The seasonality, personality and emotional solidarity and perception of economic crisis. The list of factors is presented in table3.

Table3 List of factors

Variables	Studies
Age, Gender, Education level, Income level, Civil status, Length of residence, Number of family members; Birthplace,	Almeida et al, 2016; Mansfeld, 1994; Jurowski et al, 2004; Hateftabar & Chapuis, 2020; Korca ;1996; MacKay & Campbell, 2004; Gursoy & Jurowski , 2002; Bujosa& Nadal, 2007; Monterrubio et al; 2020; Bimonte & Faralla ,2016; Wang & Chen, 2015; Madrigal, 1995; Perez & Nadal, 2005; Ishikawa & Fukushige, 2007; Gursoy & Rutherford; 2004;
Distance from tourism zone	Jurowski et al, 2004;
Economic/employment dependency on tourism	Almeida et al, 2016;Lawson et al, 1998
Interaction with tourists	Horn & Simmons, 2002; Teye et al, 2002
Density of tourists/tourism development	Bujosa & Nadal, 2007; Lawson et al, 1998; Horn & Simmons, 2002;
Seasonality	Bimonte & Faralla ,2016; Lawson et al, 1998; Vargas & Porras, 2014
Perceived risk of Covid-19	Sánchez et al, 2021;
Perceived risk of economic crisis	Hateftabar & Chapuis, 2020;
Place identity	Wang & Chen, 2015; Wang & Xu, 2015;
Tourist destination life cycle/ Stage of tourism development	Mansfeld, 1994; Lawson et al, 1998
Personality and emotional solidarity	Moghavvemi et al, 2017;
Residents' quality of life	Liang & Hui, 2016;
Type of tourism/tourists	Lawson et al, 1998;

Source: Own Elaboration

2.1.4 Research on resident group clustering based on differences in perceptions and attitudes

The research on the classification of tourist destination residents began in the late 1980s. Davis first used cluster analysis of 415 residents in Florida, USA, and classified residents of tourist destinations into five types based on their perceptions and attitudes: Lovers, haters, cautious supporters, neutrals and rational lovers (Davis, 1988); Evans divides residents into four types based on data surveys conducted by the New Zealand Ministry of Tourism: lovers, haters, restrainers and self-interested people (Evans, 1993); Madrigal separately investigated

the tourism perceptions and attitudes of residents of Sedona, a rural tourism destination dominated by natural environments in Arizona, and residents of York, a city with a long history in the United Kingdom, and found that although the tourism development backgrounds of the two places are quite different, the residents The results of attitude clustering are very similar, and can be roughly divided into three types: lovers, haters, and realists (Madrigal, 1995); Perez and Nadal divides residents into five types based on data surveys conducted in the Balearic Islands (Perez & Nadal, 2005).

2.1.5   *Methods that are often used in related studies*

According to the review done by Sharpley in 2014 about the research on residents' attitudes and perceptions towards tourism, most of the studies contain an approach of case study, and the approach is often conducted by a quantitative analysis with surveys, and the surveys mainly include the following types: postal survey, household survey, phone survey, self-administered questionnaire, face-to-face questionnaires and on-line survey; the sample size varies from 50 to over 1000 with respect to different size of the case ground and the type of research. There are only a very small part of the studies chose to use the qualitative analysis, and the author also calls for more qualitative analysis in this research area (Sharpley, 2014). There are also many researchers encourage longitudinal studies (Sharpley, 2014; Garcia et al, 2015) in order to identify patterns and differences.

that occur over time

2.2 *Perceived risk of COVID-19*

The term perceived risk is a central concept in most theories of health behavior (Brewer et al, 2004). Brewer also proposed three hypotheses about the relationship between the perceived risk and the risk behavior: people who have more risky behavior would have a higher perceived risk; there is a positive correlation between perceived risk and protective behavior; the increase of the protective behavior would reduce the level of perceived risk. Those hypotheses were proved to be true through a case study about Lyme disease in USA. About the measurement of the perceived risk of a certain type of disease, Brug suggested that the following variable to measure it: perceived likelihood and the level of worry of acquiring or dying from the disease for one self and the family member (Brug, 2004), which has been adapted in many subsequent studies (Yildiri, 2020).

Since the outbreak of the COVID-19 in 2020, there have been many studies engaged in investigating the relationship between the perceived risk of the COVID-19 and the tourism industry. However, most of the studies are related to the perceived risk in the visitor's point of view and how their travel behavior changes with the level of perceived risk (Matiza, 2020; Rather, 2021; Li, 2021). There is very limited literature which investigates the perceived risk of the COVID-19 in the resident's point of view except for one example, Joo investigated the relationship between the residents' perceived risk that is associated with tourists and their support for tourism through a case study in the Jeju Island, South Korea. And the result shows that there is a negative correlation between the perceived risk and their support for tourism and emotional solidarity was a mediator between perceived risk and support for tourism (Joo et al, 2021). However, there are some limitations in this study: it only investigates the residents' support for tourism (their overall attitude) instead of the different aspects of the tourism impacts, there is a lack of the community attachment variables which has been proved has a correlation with the residents' attitudes in many other previous studies.

2.3 Conceptual model and research hypotheses

Due to the different entry and exit management policies of tourists in various places and the long incubation period of the COVID-19, meaning that incoming tourists may increase the risk of infection for the residents in the destinations and also bring more pressure on the local epidemic prevention measures. Surely tourism can bring economic contributions and other possible benefits for the community, especially for a destination like Calvia whose economy is highly depended on tourism, however, residents who perceive that there is change that get the disease from the tourists would cause their negative attitudes of the tourism impacts and eventually impact their degree of support for tourism development (Joo et al, 2021). . Accordingly, the following three hypothesizes have been proposed:

H1: There is a negative correlation between the residents' perceived risk of COVID-19 and their degree of support for tourism development.

H2: There is a negative correlation between the residents' perceived risk of COVID-19 and their perceptions of the positive impacts of tourism.

H3: There is a positive correlation between the residents' perceived risk of COVID-19 and their perceptions of the negative impacts of tourism.

Place attachment is the main component of the place identity, which is often measured by the place of birth and years of residences, many studies have suggested that there is a correlation between the degree of place attachment of the residents and their perceptions of the impacts of tourism. Wang (2015) suggested that the length of residence has a positive impact on the residents' place-based self-esteem and self-efficacy, and there is a positive correlation between the self-esteem and the residents' perceptions of the positive impacts of tourism and there is also a negative correlation between the self-esteem and the residents' perceptions of the negative impacts of tourism; and the influence of the self-efficacy on the perceptions of tourism impacts is similar to that of self-esteem (Wang et al, 2015). Some other studies also suggest the positive correlation between the place attachment and the residents' perceptions of the positive impacts of tourism and the negative correlation for the negative impacts of tourism (Mansfeld 1994; Chen et al 2010; Lee et al, 2003; Vargas 2015). However, there are also many other studies suggest different results, Almeida-García (2016) found that as the length of residence increases, people's awareness of the impact of tourism on social life, culture and local economy has gradually deteriorated through a case study in Benalmadena; Haley (2005) found that long-term local residents had less favorable attitudes towards tourism through a case study in Bath, Uk (Haley et al, 2005); Bujosa and Nadal (2007) found that long-term residents tend to assess the negative environmental impacts of tourism more negatively than those who are new to the community. Since the perceived risk of COVID-19 that is related with the incoming tourists is one of the negative impacts of tourism, accordingly, hypothesis 4 is proposed according to the similar characteristics that Calvia share with Benalmadena.

H4: There is a positive correlation between the degree of the residents' place attachment and their perceived risk of COVID-19 that is related with the incoming tourists.

H5: There is a negative correlation between the degree of the residents' place attachment and their perceived positive impacts of tourism.

H6: There is a positive correlation between the degree of the residents' place attachment and their perceived negative impacts of tourism.

Many studies have suggested that the residents who are economically dependent on the tourism industry tend to have more positive and favorable perceptions of the tourism impacts (Madrigal 1995; Brunt el al, 1999; Bujosa et al 2007; Xu et al 2016). The results may differ when it comes to different type of impact, Almeida-García (2016) found that residents who work in the tourism industry or those who have friends or relatives work in the tourism industry tend to have more positive perceptions of the economic and sociocultural impacts of tourism, while there is no significant correlation between the type of work and their perceptions of the environmental impacts of tourism and their overall attitudes towards tourism. Accordingly, hypothesis 5 is proposed:

H7: There is a negative correlation between the degree of the residents' economic dependence on tourism and their perceived risk of COVID-19 that is related with incoming tourists.

H8: There is a positive correlation between the degree of the residents' economic dependence on tourism and their perceived positive impacts of tourism.

H9: There is a negative correlation between the degree of the residents' economic dependence on tourism and their perceived negative impacts of tourism.

According to the hypothesizes proposed, the following model is constructed (See figure 1).

Figure1 Structural Model
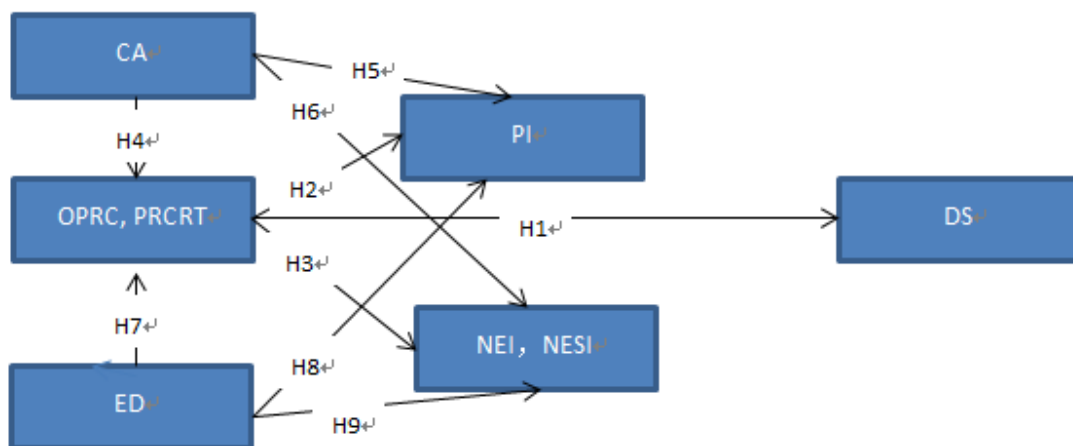
Source: Own Elaboration

Note: Community Attachment (CA), Economic Dependence on Tourism Industry (ED), Degree of Support for Tourism (DS), Residents' Perceived Positive Impacts (PI), Residents'

Perceived Negative Economic Impacts (NEI), Residents' Perceived Negative Socio-cultural and Environmental Impacts (NSEI), Residents' Overall Perceive Risk of Covid-19 (OPRC), Residents' Perceived Risk of Covid-19 Related to Incoming Tourists (PRCRT).

3. METHODOLOGY

3.1 Study site

Calvia is a municipality on the island of Majorca, which is the largest island of the Balearic Islands (See Figure2 for its location). It's located in the southwest of the island with a cover of 145 km2 and with a population (inhibitants) of 51,710 in 2020 (IBESTAT). Most of the population is located in the coastal area: Santa Posa (11,278), Palma Nova (6,903), Son Ferrer (6,097), Magaluf (5,073), Peguera (4,019), Illetes (3,036). The proportion of male and female population is basically the same (26,010 males and 25700 females), most of population are aged between 20-44 years old (36.5%) and 45-64 years old (29.9%). 68% of the population were born in Spain and 38% of the population were born in the Balearic Islands (IBESTAT, 2020).

Calvia has a coastline of 60 km with some of the finest beaches in Majorca. It is also one of the wealthiest municipalities, with disposable income per capita of 19, 236 euros in 2018, compared the figure of 15, 978 of the Balearic Islands (IBESTAT, 2018).Calvia had an accommodation supply of 52,299 square meters of hotels and 8,104 square meters of tourist apartments in 2019. In 2019, there were 1,707,695 tourists lodged in hotels and apartments, and 25.7% of them were come from Germany (IBESTAT, 2019). In general, Calvia is chosen as the case ground of the research since it's a mature tourism destination that has a long history of mass tourism, and also for its proximity with the city of Palma.

Figure 2: The location and study site
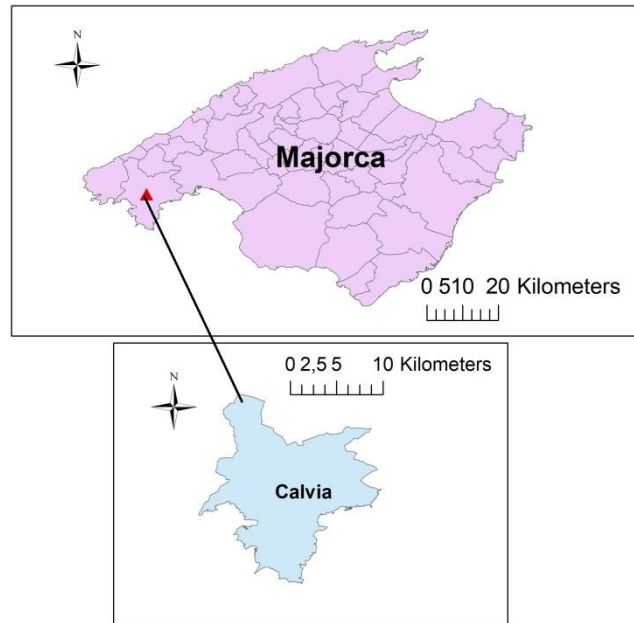
Source： Own Elaboration

3.2   Instruments and sample

The case study would be conducted with an approach of quantitative analysis using surveys. A face to face self-administrated questionnaire would be distributed to the respondents in person. This kind of technique is selected since it has a higher response rate compared to the postal survey. The main target respondents were the residents who are working in the gift shops, restaurants, car rental companies, hotels and other commercial sites along with those who are resting in the park in order to get a higher response rate. Those who are younger than 18 were not considered as respondents to ensure fully understanding to the questions.

The questionnaire (see in Appendix) have 14 questions based on the eight constructs based on the literature review in section two: the general socio demographic variables: age ('younger than 18', '28 to 44 years', '45 to 64 years', and 'older than 65), gender, education level, marital status, income level (low, medium and high); the community attachment variables: place of birth (born in Calvia, other municipalities in Balearic Islands, other provinces in Spain, Other countries in Europe and outside Europe), length of residence ('less than one years', 'one to five years', 'six to ten years and 'more than ten years'), residential status (own or rented); the economic dependence on tourism indicator ('work not related to tourism', 'tourism-induced work-travel agency, commerce, real estate' and 'work directly related to tourism- accommodation and catering'); the perceived risk of COVID-19

variables: ;the perceptions of the economic impacts of tourism variables; the perceptions of the sociocultural impacts of tourism variables; the perceptions of the environmental impacts of tourism variables; the overall attitudes towards tourism variables. The perceived risk of COVID-19 was divided into the overall perceived risk and the perceived risk that are related to the incoming tourists; The last five constructs would be conducted with a five-point Likert scale (1 indicated "strongly disagree" and 5 indicated "strongly agree").

The formal data collection was conducted between June 17 and July 10, 2021 and coved the area of Illetes, Santa Ponsa, Son Ferrer, Palma Nova, Son Caliu, Magaluf, Peguera and El toro, which are all located along the coast of Calvia, and the population of these areas accounts for about 75% of the total population of Calvia (IBESTAT, 2020). As a result, 208 valid observations were obtained out of 224 returned questionnaires.

3.3 Data analysis method

The software SPSS 20 was used to get an overall view of the mean ratings and standard deviations of the constructs and also for the hypothesis testing. The main analysis strategy consisted of four stages. First, principal component analysis (PCA) was used to re-divide the different items in the questionnaires into different constructs to be used in the hypothesis testing. Second, the uni-dimensionality of the perceived impacts and the residents' overall attitudes of tourism and the perceived risk of Covid-19 constructs were tested with a Confirmatory Factor Analysis (CFA), in this step, the reliability and validity of the key constructs would also be evaluated. And then, each item in different constructs would be converted into one numerical variables according to the weight vaule results for each item in the Confirmatory Factory Analysis. Third, pearson correlations analysis was used to identify the relationship between the demographic variables and residents' perceived impacts and support for tourism and their perceived risk of Coivd-19 to extract the control variable for the next step. Fourth, the structural relationships between the main constructs were analyzed by using the partial correlation analysis to test the seven hypothesizes above.

4. RESULTS

4.1 Sample summary

Table4 presents the demographic characteristics of the sample.

Table4 Demographic summary of respondents

Variable	N	%
Gender		
Male	93	44.7
Female	115	55.3
Age		
18-44	94	45.2
45-64	86	41.3
65 and older	28	13.5
Education level		
Primary school	35	16.8
Secondary school	110	52.9
Bachelor's degree	58	27.9
Master's degree	5	2.4
Income level		
Low	38	18.3
Middle	166	79.8
High	4	1.9
Birthplace		
Calvia	61	29.3
Other municipalities in Balearic Islands	47	22.6
Other provinces in Spain	36	17.3
Other countries in Europe	32	15.4
Outside Europe	32	15.4
Residence time		
Less than one year	6	2.9
1-5 years	30	14.4
6-10 years	39	18.8
More than 10 years	133	63.9
Job type		
Not related to tourism	66	31.7
Related to tourism		
Hotels and other accommodation services	23	11.1
Restaurants and bars	29	13.9
Transportation services	5	2.4
Commerce	80	38.5
Other	5	2.4

Source: Own Elaboration

As seen from table7, the participants of this study are a close representation of Calvia's population. Similar to the information from the recent census, there was an almost equal

distribution between males and females in the sample. Residents aged between 18 and 44 years old were the largest group in the sample, followed by the age group of 45 to 65. Respondents who were born in Spain accounts for 69.2% of the sample (68% as for the census 2020).Most of the participants were long-term residents the percentage of the respondents who had been living in Calvia for over 10 years is 63.9%. In terms of income, most of the respondents reported their income level as meddle (79.8%). In terms of their economic dependence on the tourism sector, most of the respondents' jobs are related to the tourism sector (68.3%), and among the respondents who have jobs related to the tourism sector, the commerce sector has the highest proportion (56.3%).

4.2 Descriptive statistics and CFA of the measurement model

After the principal component analysis with rotation method of Quartimax with Kaiser Normalization, the five constructs in the questionnaires can be further re-divided into the following 5 constructs according to the results of the principal component analysis: Positive impacts and support of tourism (PI), negative socio-cultural and environmental impacts of tourism (NSEI), negative economic impacts of tourism (NEI), Degree of support for tourism (DS), Overall perceived risk of Covid-19 (OPRC), Perceived risk of Covid-19 related to incoming tourists (PRCRT).

As seen in table 5, except for the opinion that tourism has helped the protection of local heritage and traditions (0.343), which was excluded for the further analysis. The factor loadings for each construct were above the goal 0.5 and ranged from 0.500 to 0.856, which indicates strong convergent validity. The AVE for each construct is near or above the 50% goal. Each construct had adequate Construct Reliability ranging from 0.701 to 0.880, and the Cronbach's alpha for each construct is over 0.7 except for the negative economic impacts (0.533), which implies high levels of internal consistency. So in general, the sample is appropriate for the hypothesis testing in the next step. And as seen in table 6, all AVEs were greater than their corresponding squared inter-construct correlations, which indicates that each factor was distinctive without overlapping with others.

And as seen in the correlations of different constructs in table 6, we can tell that there is a negative correlation between the residents' perceived risk of COVID-19 and their degree of support for tourism development and their perceptions of the positive impacts of tourism, and

there is a positive correlation between the residents' perceived risk of COVID-19 and their perceptions of the negative impacts of tourism, which can be seen as the first evidence for accepting the hypothesis 1 ,2 and 3 in the circumstances without considering the other demographic variables.

As seen in the mean score and the standard deviation value of each items in table 5, we can have an overview of the residents' attitudes and perceived impacts of tourism and perceived risk of Covid-19 in Calvia. Respondents generally have a favorable attitude toward tourism with the overall score over 3 in the scale of the degree of support for tourism. In terms of the positive impacts of tourism, the perceived impact of "tourism has brought more job opportunities (4.08)" and "Tourism has offered more opportunities to meet with people from other culture (4.30)" have the highest mean socres over 4 and with a relative low standard deviation compared with other items (0.982 and 0.827), indicates that residents in Calvia perceived the availability of job opportunities and chances of cultural exchange that tourism has brought in the most favorable manner; the mean socre of the two items in the perceived positive environmental impact sector were slightly under 3 (2.87 for tourism has brought more parks and gardens and 2.68 for tourism has protected the environment), indicates that the residents in Calvia perceived the positive environmental impacts of tourism in the least favorable manner; the standard deviation for the item "tourism has protected the local heritage and traditions" has the highest value over 2 (2.345), indicates that the residents in Calvia have the largest differences of opinion on the positive cultural impact of tourism in terms of heritage and traditions. In terms of the negative impacts of tourism, the perceived impact of "tourism has increased the price of land and house (4.51)" and "tourism has increased the price of goods and services (4.19)" have the higest mean socres over 4 and with a relative low standard deviation (0.755 and 0.823),indicates that residents in Calvia perceived the cost of living tourism has increased as the most negative impact of tourism; the perceived impact of "tourism has increased the employment instability (2.83)" and "tourism has caused the erosion of local language (2.44)" have the lowest mean socres under 3. In terms of the perceived risk of Covid-19, the respondents generally displayed an optimistic attitude in terms of the perceived possibility of getting infected for themselves and their family

members and the perceived risk that the incoming tourists might bring about, with the overall mean score under 2.5.

Table 5 Results of the CFA in the measurement model

	Λ	Mean	SD
Positive impacts of tourism (Cronbach's alpha= 0.869, CR= 0.880, AVE= 0.451)			
Tourism has improved the infrastructure	0.665	3.28	0.995
Tourism has brought more job opportunities	0.603	4.08	0.982
Tourism has helped increased the income level	0.620	3.83	1.011
Tourism has improved the public services	0.674	3.25	1.030
Tourism has offered more opportunities to meet with people from other culture	0.594	4.30	0.827
Tourism has helped the protection of local heritage and traditions	0.343	2.90	2.345
Tourism has brought more parks and gardens	0.777	2.87	1.058
Tourism has helped protected the environment	0.673	2.68	1.019
Negative socio-cultural and environmental impacts of tourism (Cronbach's alpha= 0.745, CR=0.816, AVE=0.529)			
Tourism has caused the erosion of local language	0.856	2.44	1.186
Tourism has caused congestion and more accidents	0.747	3.18	1.015
Tourism has worsen the problems of crime, drug, alcohol and prostitution	0.639	3.33	1.150
Tourism has ruined the natural environment	0.660	3.15	1.008
Tourism has increased the level of pollution	0.845	3.95	1.018
Negative economic impacts of tourism (Cronbach's alpha= 0.533, CR= 0.701, AVE= 0.446)			
Tourism has increased the price of land and house	0.702	4.51	0.755
Tourism has increased the employment instability	0.500	2.83	1.049
Tourism has increased the price of goods and services	0.772	4.19	0.823
Degree of support for tourism (Cronbach's alpha= 0.665, CR= 0.710, AVE= 0.504)			
The positive benefits of tourism outweigh the negative impacts	0.731	3.52	1.067
I support the tourism development in Calvia	0.688	3.94	1.136
Overall perceived risk of Covid-19 (Cronbach's alpha= 0.894, CR=0.757, AVE= 0.609)			
There is a possibility for me to get Coivd-19 in this year	0.805	2.39	1.107

There is a possibility for my family members to get Covid-19 in this year	0.755	2.44	1.075
Perceived risk of Covid-19 related to incoming tourists (Cronbach's alpha= 0.839, CR=0.854, AVE= 0.661)			
Incoming tourists increase my anxiety related to Covid-19 prevention	0.805	2.09	1.172
Incoming tourists increase inconvenience in outdoor activities	0.786	2.18	1.230
Incoming tourists make me reduce my outdoor activities	0.847	1.73	1.093
Note: CR indicates composite reliability; AVE indicates average variance extracted; λ indicates factor loadings; Cronbach's alpha is a measure of internal consistency			

Source: Own Elaboration

Table 6 Results of discriminant validity of the constructs

	PI	NEI	NSEI	DS	OPRC	PRCRT
PI	0.638					
NEI	0.127	0.620				
NSEI	-0.159	0.243	0.582			
DS	0.602	-0.110	-0.260	0.714		
OPRC	-0.163	0.183	0.277	-0.258	0.900	
PRCRT	-0.229	0.122	0.305	-0.327	0.532	0.797
Note: Values on the diagonal line are AVEs and those off the diagonal line are squared inter-construct correlations						

4.3 Pearson analysis results for the demographic variables and control variable extraction

Table 7 pearson analysis results for the demographic variables

	PI	NEI	NSEI	DS	OPRC	PRCRT
Gender	0.008	0.016	0.006	0.058	0.002	0.101
Age	-0.178**	-0.050	0.019	-0.218**	0.090	0.190**
Education	0.195**	-0.007	-0.064	0.227**	-0.008	0.070*
Civil status	-0.017	0.075	-0.021	-0.077	0.132	0.036
Income	0.207**	-0.103	-0.223**	0.228**	-0.165*	-0.049
Birthplace	-0.245**	-0.001	0.115	-0.235**	0.061	0.042
Residence time	-0.238**	-0.161*	0.092	-0.281**	0.147*	0.248**
Residential status	0.209**	0.073	0.017	0.214**	0.016	-0.017

Economic dependence	0.366**	-0.040	-0.191**	0.463**	-0.166*	-0.222**
Note: * $p<0.05$ ** $p<0.01$						

Source: Own Elaboration

As seen from the table 7, the pearson analysis results for the demographic variables and the different contructs show that no main effect of gender or civil status has been found. In terms of the positive impacts and degree of support for tourism, there is a significant negative correlation between age, residencetime, birthplace (higher value indicates more far away from Calvia) and them, there is also a significant positive correlation between education level, income, degree of economic dependence on tourism industry and them. In terms of the negative impacts of tourism, there is a negative correlation between the residents' residence time and their perceived negative economic impacts, there is also a significant correlation between the income level, degree of economic dependence on tourism industry and the residents' perceived socio-cultural and environmental impacts of tourism. In terms of the perceived risk of Covid-19, there is a negative correlation between degree of economic dependence on tourism sector and the perceived risk of Covid-19, and the correlation is more significant when it comes to the perceived risk of Covid-19 that is related with the incoming tourists, there is also a positive correlation between residence time and the perceived risk of Covid-19, and the correlation is also more significant for the perceived risk related with the incoming tourists; there is a positive correlation btween age, education level and the perceived risk of Covid-19 related to the incoming tourists; there is a negative correlation between income level and the overall perceived risk of Covid-19. So according to the results, the variable of gender and civil status would excluded for the partial correlation anaylsis for the proposed hypothesizes.

4.4 Hypothesis testing

According to the factor analysis above and taking into account the demographic variables that are correlated with the different constructs in the poposed model, the method of partial correlation analysis was used for the hypothesis testing, interms of the negative impacts of tourism, it was divided into economic impacts and socio cultural and environmental impacts, perceived risk of Covid-19 would be divided in to the overall risk ; in terms of measurement of

community attachment, it was separately analysised by the residence time and the birth place,

see the results in table 8:

Table 8 The hypotheses tests summary

Hypothesized Relationship	Coef	P	Result
H1 :OPRC→DS	-0.100	0.150	Rejected
PRCRT→DS	-0.141	0.043	Supported
H2: OPRC→PI	-0.116	0.095	Rejected
PRCRT→PI	-0.196	0.005	Supported
H3: OPRC→Negative impacts of tourism:			
NEI	0.176	0.011	Supported
NSEI	0.173	0.013	Supported
PRCRT→Negative impacts of tourism:			
NEI	0.148	0.033	Supported
NSEI	0.243	0.000	Supported
H4: Commnuity attachment (Residence time) →OPRC	0.140	0.044	Supprted
PRCRT	0.186	0.007	Supported
Commnuity attachment (Birth place) →OPRC	0.026	0.714	Rejected
PRCRT	0.008	0.904	Rejected
H5: Commnuity attachment (Residence time) →PI	-0.055	0.434	Rejected
Commnuity attachment (Birth place) →PI	-0.187	0.007	Supported
H6 Commnuity attachment (Residence time) →Negative impacts of tourism NEI	0.182	0.009	Supported
NSEI	0.034	0.635	Rejected
Commnuity attachment (Birth place) →Neative impacts of tourism	0.019	0.784	Rejected
NEI	0.067	0.339	Rejected
NSEI			
H7: Degree of economic dependence→OPRC	-0.001	0.984	Rejected
PRCRT	0.027	0.702	Rejected
H8: Degree of economic dependence→PI	0.310	0.000	Supported
H9: Degree of economic dependence→Neative impacts of tourism	-0.144	0.039	Supported
NEI	-0.126	0.071	Rejected
NSEI			

Source: Own Elaboration

Hypothesis 1 foucuses on investigating the relationship between the residents' perceived risk of Covid-19 and their degree of support for tourism development in Calvia. Based on the results, residents' perceived risk of Covid-19 related to the incoming tourists (PRCRT) was found to be negatively correlated with residents' degree of support for tourism (coefficient=0.141, p=0.043) at the significance level of 0.05, while no effect of residents' overall perceived risk of Covid-19 (OPRC) on the residents' degree of support for tourism has been found. Thus, hypothesis 1 was supported in terms of the perceived risk of Covid-19 that is related with the incoming tourists.

Hypothesis 2 foucuses on investigating the relationship betweenf the residents' perceived risk of Covid-19 and their perceived positive impacts of tourism in Calvia. Based on the results, residents' perceived risk of Covid-19 related to the incoming tourists (PRCRT) was found to be negatively correlated with residents' perceived positive impacts of tourism in Calvia (coefficient=-0.196, p=0.005) at the significance level of 0.01, while no effect of residents' overall perceived risk of Covid-19 (OPRC) on the residents' perceived positive impacts of tourism in Calvia has been found. Thus, hypothesis 2 was supported in terms of the perceived risk of Covid-19 that is related with the incoming tourists.

Hypothesis 3 foucuses on investigating the relationship between the residents' perceived risk of Covid-19 and their perceived negative impacts of tourism in Calvia. Based on the results, both residents' perceived risk of Covid-19 related to the incoming tourists (PRCRT) and their overall perceived risk of Covid-19 (OPRC) was found to be positively correlated with residents' perceived negative impacts of tourism in Calvia. The correlation between the Perceived risk of Covid-19 related to incoming tourists and the perceived negative socio-cultural and environmental impacts(Coefficient=0.148, p=0.033) of tourism is more significant compared that with negative economic impacts (Coefficient=0.243, p=0.000). Thus, hypothesis 3 was supported whether in terms of the perceived risk of Covid-19 that is related with the incoming tourists or the overall perceived risk of Covid-19.

Hypothesis 4 foucuses on investigating the relationship between the residents' degree of place attachment and their perceived risk of Covid-19. Based on the results, both residents' perceived risk of Covid-19 related to the incoming tourists (PRCRT, coefficient=0.186, p=0.007) and their overall perceived risk of Covid-19 (OPRC, coefficient=0.140, p=0.044) was

found to be positively correlated with residents' residence time, while no correlation with residents' birthplace has been found. Thus, hypothesis 4 was supported in the circumstance that taking residence time as the measurement standard for the residents' degree of community attachment.

Hypothesis 5 foucuses on investigating the relationship between the residents' degree of place attachment and their perceived positive impacts of tourism. Based on the results, residents' perceived positive impacts of tourism was found to be negatively correlated with residents' degree of place attachment when take the birth place as the measurement standard (Coefficient=-0.187, p= 0.007) at the significance level of 0.01, while no correlation has been found when take the residence time as the measurement standard. Thus, hypothesis 5 was supported in the circumstance that taking birth place (higher value indicates the birth place is more close to Calvia) as the measurement standard for the residents' degree of community attachment.

Hypothesis 6 foucuses on investigating the relationship between the residents' degree of place attachment and their perceived negative impacts of tourism. Based on the results, residents' perceived negative economic impacts of tourism was found to be positively correlated with residents' degree of community attachment when take the residence time as the measurement standard (Coefficient=0.182, p= 0.009) at the significance level of 0.01, while no correlation of that has been found for the negative socio-cultural and environmental impacts, either the correlation between the perceived negative impacts and residents' degree of community attachment when take the birth place as the measurement standard. Thus, hypothesis 6 was only supported for the negative economic impacts of tourism when take residence time as the measurement standard for the degree of community attachment.

Hypothesis 7 foucuces on testing the influence of residents' degree of economic dependence on the tourism industry on their perceived risk of Covid-19. Based on the results, no correlation has been found between two of them, whether for the overall perceived risk of Covid-19 (OPRC) or the perceived risk of Covid-19 related with the incoming tourists (PRCRT). Thus, hypothesis was rejected based on the results.

Hypothesis 8 foucuses on investigating the relationship between residents' degree of economic dependence on the tourism industry and their perceived positive impacts of tourism.

Based on the results, residents' perceived positive impacts of tourism was found to be positively correlated with residents' degree of economic dependence on tourism industry (Coefficient=0.310, p= 0.000) at the significance level of 0.01. Thus, hypothesis 7 was supported based on the results.

Hypothesis 9 foucuses on investigating the relationship between residents' degree of economic dependence on the tourism industry and their perceived negative impacts of tourism. Based on the results, residents' perceived negative economic impacts of tourism was found to be negatively correlated with residents' degree of ecomomic dependence on tourism industry (Coefficient=-0.144, p= 0.039) at the significance level of 0.05, while no correlation has been found for the negative socio-cultural and environmental impacts. Thus, hypothesis 9 was supported for the negative economic impacts of tourism in Calvia.

5. *Discussion and CONCLUSION*

This study used a structural model on the relationship among community attachment, economic dependence on tourism industry, perceived risk of Covid-19, and the residents' positive and negative perceptions of tourism impacts. Respondents generally have a favourable attitude toward tourism with the overall score over 3 in the construct of the degree of support for tourism. In terms of the residents' overall attitudes towards the positive and negative impacts of tourism in Calvia, the results show that the locals have a more favourable perception of positive economic impacts (mean value of 3.73) of tourism as compared to positive socio-cultural (mean value of 3.48) and environmental impacts (mean value of 2.78); as for the negative impacts of tourism, the results also show that the locals have a more pessimistic perception of negative economic impacts (mean value of 3.84) of tourism as compared to negative socio-cultural (mean value of 2.97) and environmental impacts (mean value of 3.55); the locals are more aware of the positive socio-cultural impacts as compared to the negative, in contrast, the locals are more aware of the negative environmental impacts as compared to the positive. In terms of the residents' perceived risk of Covid-19, the locals generally have an optimistic attitudes with a mean value lower than 2.5 (2.17), and their perceived risk of Covid-19 that is related to incoming tourists (2.00) is lower than the overall risk (2.42).

As for the socio-demographic factors, there is no clear evidence shows that gender and civil status have a significant influence on the residents' perceptions of the impacts of tourism and their perceived risk of Covid-19, which is also concluded by most of the related studies (Tosun, 2002; Almeida, 2016). The results show that the older generation is less aware of the positive impacts of tourism and is less supported for the development of tourism, which is also concluded by other studies (Almeida, 2016; Huh & Vogt, 2008), there are also studies find the opposite results (King et al, 1993), the results also show that age does not have clear influence on the perceived negative impacts of tourism, while some studies (Bujosa & Nadal, 2007) indicates that older generation is less aware of negative impacts of tourism; the older generation is also more aware of the risk of the Covid-19 that is related with the incoming tourists. The results show that residents that have a higher education level and income level are more aware of the positive impacts of tourism and are more supported for the development of tourism, which is consistent with previous studies (Almeida et al, 2016; Teye et al, 2002), there is no evidence shows that education level has an influence on the perceived negative impacts, while the results show that income level has a negative influence on the perceived negative impacts, education level has an positive influence on the perceived risk of Covid-19 that is related with incoming tourists while income level doesn't.

As for the community attachment factor, this study measures it by residence time and birth place, and the correlations of them with the perceived impacts of tourism are analysed separately, which is differ from many other studies. The results show that residents who have longer residence time are more aware of the negative economic impacts of tourism, while there is no clear correlation for the positive impacts and negative socio-cultural impacts. Residents whose birth place is more far away from Calvia are less aware of the positive impacts of tourism. While Bujosa & Nadal (2007) found that the longer an individual lives in the municipality, the worse their view is of the environmental impacts, Davis et al. (1988) found that longer-term residents are more aware of the positive impacts of tourism. The results also show that longer-term residents are more aware of the perceived risk of Covid-19.

As for the economic dependence on tourism factor, the results show that residents who depend economically on tourism are more aware of the positive impacts and less aware of the negative economic impacts, while there is no clear correlation for the negative

environmental and socio-cultural impacts, which is consistent with many previous studies (Madrigal,1993; Korca, 1996; Bujosa & Nadal, 2007; Almeida, 2016).

As for the perceived risk of Covid-19 factor, the results show that residents who have higher perceived risk of Covid-19 tend to have a worse view of the negative impacts of tourism and less favourably view of the positive impacts of tourism, they are also less supported for the development of tourism, which is consistent with the study of Joo et al (2020).

This is one of the first studies to take perceived risk of Covid-19 as an antecedent of residents perceived tourism impacts and their support for tourism. Compared with the only one previous study of Joo et al (2020), it also takes many other socio-demographic variables into considerations as controlled variables. The findings can serve as a theoretical foundation for the practical implication since Covid-19 has become a global issue and it would not end in the near future.

For practical implication, the findings suggest the importance of dispelling the residents' perceived risk of Covid-19, especially those related with the incoming tourists, since it has a negative influence on residents' perception of the tourism impacts and their level of support for tourism, and the success of a tourism project depends on the degree that the development is made up and carried out with the participation and support of the host community (Belisle & Hoy, 1980; Gursoy et al, 2002; Ap, 1992). Governments can do that by limiting the number of tourists, improving epidemic prevention measures, encouraging residents to be vaccinated and strengthen entry management and quarantine policies. The Calvia government can also focus on solving the problems of high level of cost of living and improving the problems of pollution, since the residents' in Calvia are more aware of these negative impacts of tourism. Efforts should be made to involve the local residents in the tourism planning and create more job opportunities for them that are related to tourism.

Appendix

Date：   Location：

     Questionnaire on the impact of tourism and the perceived risk of COVID-19 in Calvia
General Social Demographic

1. Gender   ☐less than 18 years old
☐Male   ☐18-44 years old
☐Female   ☐45-64 years old
2. Age   ☐65 or over 65 years old

3. Education level

☐No studies

☐Primary school

☐Secondary school

☐Bachelor's degree

☐Master's degree

☐Doctor's degree

4. Marital status

☐Single

☐Married

☐Divorced

☐Widowed

5. Income level

☐Low

☐Medium

☐High

Community attachment

6. Birthplace

☐Calvia

☐Balearic Islands

☐Spain

☐Europe

☐Other countries

7. Length of residence in Calvia

☐Less than one year

☐1 to 5 years

☐6 to 10 years

☐Over 10 years

8. Residential status

☐Own

☐Rented

Economic dependence on tourism

9. Is your job related to the industry of tourism?

☐Yes

☐No

If yes, Please choose among the following sectors:

☐Hotel industry

☐Food and drink establishments

☐Travel agency

☐Transportation services

☐Other

10. Opinion about the economic impacts of tourism in Calvia (1 indicated "strongly disagree" and 5 indicated "strongly agree")

	1	2	3	4	5
Tourism has improved the infrastructure					
Tourism has brought more jobs opportunities					
Tourism has helped increased the income level					
Tourism has increased the price of land and house					
Tourism has increased the employment instability					
Tourism has increased the price of goods and services					

11. Opinion about the sociocultural impacts of tourism in Calvia (1 indicated "strongly disagree" and 5 indicated "strongly agree")

	1	2	3	4	5
Tourism has improved the public services(medical centers, sports facilities, police service)					
Tourism has offered more opportunities to meet with people from other culture					
Tourism has helped the protection of local heritage and traditions					
Tourism has caused the erosion of local language					
Tourism has caused congestion and more accidents					
Tourism has worsen the problems of crime, drug and alcohol and prostitution					

12. Opinion about the environmental impacts of tourism in Calvia (1 indicated "strongly disagree" and 5 indicated "strongly agree")

	1	2	3	4	5
Tourism has brought more parks and gardens					
Tourism has helped protected the environment					
Tourism has ruined the natural environment					
Tourism has increased the level of pollution (noise, water, air, waste)					

13. Opinion about the overall attitudes of tourism in Calvia (1 indicated "strongly disagree" and 5 indicated "strongly agree")

	1	2	3	4	5
The positive benefits of tourism outweigh negative impacts					
I support tourism development in Calvia					

14. Opinion about the perceived risk of the COVID-19

	1	2	3	4	5
There is a possibility for me to get the COVID-19 in this year					
There is a possibility for my family members to get the COVID-19 in this year					
Incoming tourists increase my anxiety related to COVID-19 prevention					
Incoming tourists increase inconvenience in outdoor activities.					
Incoming tourists make me reduce my outdoor activities.					

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