

**ECOLOGICAL AWARENESS OF THE MANAGERS
IN TOURISM ACCOMMODATION FACILITIES
ABOUT THE ANTHROPOGENIC CAUSE OF THE
CLIMATE CHANGE AND THE CAUSAL
INFLUENCE OF TOURISM ON CLIMATE CHANGE**

Aleksandar Racz (PhD)³
University of Applied Health Sciences Zagreb
E mail: aleksandar.racz@zvu.hr

ABSTRACT

Taking into account all other environmental problems, climate change has become the biggest challenge and threat to the survival of human civilization, with many consequences and a expansive and wide influence on virtually every aspect of human life, and undoubtedly on tourism as an activity. The main objective of the research was to examine and analyze the ecological awareness of the managers in tourism accommodation facilities about the anthropogenic cause of the climate change and the negative causal influence of tourism on global warming and climate change. The data were collected during 2019 by a survey method conducted between managers in categorized accommodation facilities in Croatia. Kolmogorov-Smirnov's test analyzed the distribution of continuous numerical values and according to the obtained data corresponding non-parametric tests were applied. Categorical and nominal values were shown using corresponding frequencies and shares. Continuous values were shown using medians and interquartile ranges. The results have shown that managers had a developed the certain lever of the ecological awareness of the importance of global climate change issue, but did not sufficiently recognize the causal link between tourism, atmospheric pollution and global warming with the effects of climate change.

KEY WORDS: ecological awareness, climate change, tourism , managers, anthropogenic cause

INTRODUCTION

The issue of climate change has recently become a global environmental, economic and political issue (Bramwell & Lane, 2012). Climate change is increasingly considered one of the most serious global environmental problems of today (Scott, Gössling & Hall, 2012). There is ample evidence of climate change throughout the 20th century (Farid, 2016). Global climate change over the last hundred years has been linked to changes in several elements of the climate system, and primarily to changes in surface temperature, sea level elevation and coverage of the northern hemisphere with snow. In Croatia, there is a trend of decreasing precipitation and a trend of increasing temperature at most weather stations and throughout most of the year. Period from 1999 till 2000 was the warmest period in Croatia in the 20th century. Also, the relative sunshine in the period from 1971 to 2000 was generally 0.5% -2.1% higher than in the period 1961-1999. years. (Klimatski atlas Hrvatske, 2008). The same trend continued in the 21st century, with temperature peaks recorded since measurements were made in Croatia. The trend of climate change has continued throughout the 20th Century. The intensified climate changes observed in the second decade of the 21st century represent one of the greatest and most serious problems and challenges for humanity. Climate change has become one of the most serious consequences of the global environmental crisis and one of the greatest threats to life on earth. Perić and Šverko Grdić (2017, 57) pointed out that "recently, the awareness of tourism industry participants about the impact of tourism on climate change, but also about the impact of climate change on tourism". However, there are very few papers that would support such a belief or its generalization, despite the exceptional attractiveness and importance of the theme for the sustainability of tourism development. In Croatia, only a few studies have been conducted focusing on attitudes and beliefs about environmental awareness (Afrić, 2002; Ančić et al. 2016;), which in one segment also addressed attitudes to climate change. Research on the environmental awareness of tourism managers in Croatia is very rare (Petrić & Pranić, 2010). The perception of climate change is also linked to understanding the causes of climate change. Changes occur as society adversely affects the global environment through a large carbon footprint, causing global temperatures to rise, and as a result of the anthropogenic impact of the planet's climate. Significant anthropogenic contribution is associated with the intense combustion of fossil fuels after the 1st Industrial Revolution and the discovery of the steam engine. As the population on Earth enters the exponential part of the curve, energy and greed grow exponentially (Fleurbacy et al., 2014). The contribution of tourism to the emergence of climate change is extremely large (..) Accepting tourism's

responsibility for climate change is the first step towards change based on the principles of sustainable development in tourism. Tourism development based on the principles of sustainable development must embrace the different interests and attitudes of all other stakeholders who influence tourism development in different ways, either directly or indirectly. Therefore, it is necessary to get to know their views, otherwise it is not possible to develop the positive communication and partnership that is necessary in the process of implementing sustainable tourism development (Peršić&SmolčićJurdana, 2006).

AIM AND METHODOOGY

The research starts from several concepts of attitudes from the 1990s (Fazio, 1986) or from the early 21st century (Ajzen, 2008; Ajzen&ishbein, 1980; Fazio & Petty, 2008). It is important to analyze the attitudes of managers on the interplay of climate change and tourism, since taking adaptation measures and measures to mitigate climate change also entails changes in the behavior and management of businesses and the tourism industry and changes in the way businesses are managed, or changes in the field of past management. destination. The aim of the research was to examine and analyze the beliefs and attitudes of managers on climate change and the interplay of climate change and tourist accommodation. The survey was aimed at 1084 objects, which represents the total population of all categorized objects by type of hotel and aparthotel, then tourist settlements and tourist apartments and camps and marinas in the Republic of Croatia, covered by the last available List of categorized objects on 7/7/2019. (Ministry of Tourism of the Republic of Croatia, 2019).A survey questionnaire prepared for this research was used to determine beliefs and attitudes about climate change and the interplay of climate change and tourist accommodation. The questionnaire used parts of the Euro Barometer questionnaire "Special Euro barometer 409 - Climate change 2013" (EC, 2014). The questionnaire consisted of a series of statements related to global warming and climate change, and the relationship between tourism and climate change, according to which respondents were required to express their degree of agreement with each statement on a 7-point Likert scale (on a scale of 1-7) on which a score of 1 means "I completely disagree", 4 means "neither agree nor disagree", and a rating of 7 "strongly agree" with the stated statement. The survey was conducted using the survey method over a period of 45 days during 2019.

RESULTS

According to the 2019 census, 705 hotels were categorized as hotels. In addition, a questionnaire was sent to 21 heritage hotels, 1 diffuse hotel, 15 integral hotels, and 4 special standard hotels, as well as to 22 objects in the aparthotel category, which is a total of 768 accommodations. In the category of tourist resorts, a total of 51 tourist resorts and 47 apartment settlements were categorized, or a total of 98 accommodation establishments. There were 192 campsites in the camp category and 33 marinas in the marina category, or 218 accommodations in total

Out of the total number of survey questionnaires sent, 283 questionnaires were duly completed, which represents a response rate of 26.1%.

Table 1 Respondents' degree of agreement with the claims related to the cognitive component of attitude

	N	SV	SD	Minimum	Maximum	Percentil		
						25.	50. (Media n)	75.
Climate change is a serious problem in the world	283	5,70	1,40	2,00	7,00	5,00	6,00	7,00
Global warming is caused predominantly by human activities	283	5,34	1,52	1,00	7,00	4,00	6,00	6,00
Global warming is not predominantly caused by activities related to natural causes and variations in	283	4,50	1,83	1,00	7,00	3,00	5,00	6,00

climate and is dependent on human activity									
The overall impact of tourism on global warming and climate change is much greater than the impact of other services	28	3,2	1,7	1,00	7,00	2,00	3,00	5,00	
The tourism industry is a big energy consumer, a significant user of space and other resources	28	4,3	1,5	1,00	7,00	3,00	5,00	5,00	

The claim that "climate change is a serious problem in the world" in the study found an average value of 5.70, with a standard deviation of 1.40 and recorded lows and highs between 2.00 and 7.00. The recorded values at the median were 6.00, with the range between the 25th and 75th percentiles being between 5.00 and 7.00. The claim that "global warming is caused predominantly by human activities" was found to be an average of 5.34, with a standard deviation of 1.52 and recorded lows and highs between 1.00 and 7.00. The recorded values at the median were 6.00, with a range between the 25th and 75th percentiles between 4.00 and 6.00. The claim that "the overall impact of tourism on global warming and climate change is significantly greater than the impact of other services", which is estimated to be 3.22, with a standard deviation of 1.75 and recorded minima and maxima between 1.00 and 7.00. The recorded values at the median were 3.00, with the range between the 25th and 75th percentiles being between 2.00 and 5.00. The

claim that "global warming is not predominantly caused by activities related to natural causes and variations in climate and is dependent on human activity", with an average value of 4.50, with a standard deviation of 1.83 and minimums and maxima between 1.00 and 7.00. The recorded values at the median were 6.00, with a range between the 25th and 75th percentiles between 3.00 and 6.00. The research was also focused on how managers actively contribute to reducing the negative impact of the tourism accommodation industry on climate change. The assumption was that given that managers are not fully aware of the fact that human activities contribute significantly to climate change. Therefore, they were also expected to be less involved in the implementation of concrete measures that hotels could implement to protect the atmosphere. For this reason, they were asked an additional question related to a study conducted by Bohdanowitz, (2006) during a comparative study of hotel behavior in three EU countries, including Croatia. The study assessed the extent to which certain measures of adaptation of the tourism industry to climate change are implemented in a particular country. Based on the results of her research, respondents were offered the opportunity to choose one or more of them from 17 concrete measures that are represented in the practice of accommodation facilities where the respondents are managers themselves. Specifically, it has been examined what measures are most often implemented by managers or are planning to put them into practice as soon as they find them useful both for the facility itself and for the environment.

From the obtained answers, it can be concluded that in practice, primary selection and separate collection of waste material, which is carried out according to 76.4% of the respondents, are the most widely implemented. This is also related to the legal commitments made by Croatia in its accession to the European Union. Although separate waste collection is very environmentally friendly for the organization of final disposal of certain types of waste, primary recycling as well as reuse of waste is carried out by a slightly smaller number of respondents, where possible, 46.4%. Almost half, or 48.7% of the respondents, stated that their facilities have accessibility to bicycle guests (free or rental) or similar means of transportation. It remains to be considered whether it is content that is driven by ecological motives to reduce car use or commercial sporting content, since the daily rental rates of most establishments at commercial price levels also generate additional revenue, not just cover the cost of purchasing and maintaining the means of transport offered. Similar to the statement from the first part of the questionnaire related to the issue of personal engagement on saving water consumption, 37.8% of respondents stated that the facility introduced some form of water consumption reduction, either through the installation of

pressure reducing valves, taps, showers that save time and the amount used water or some other form of water saving. Contrary to these widespread methods of reducing the environmental impact of a hotel or accommodation, the least accepted methods are donation of consumable equipment, appliances, furniture and supplies (such as linen, towels, etc.) to the local community, which is reported to be 12.7%. respondents or procedures donating surplus food to employees or the local community, which is conducted according to 14.2% of respondents. Lack of donation is probably related to the very strict regulations that control the distribution and donation of food under the supervision of the sanitary inspection, as well as due to the scorn of the general public from using used and expended items, especially food.

DISCUSSION

Occasional surveys of the beliefs and attitudes of mostly the general population on general climate change issues have been carried out at EU and world level (Leviston & Walker, 2012; Ojala, 2015; Leiserowitz et al. 2015), but specific surveys of managers in the tourism accommodation industry about the same problem, especially those where a standardized or modified Eurobarometer would be used or some other questionnaire was not found (EC, 2009; EC, 2017)

The results of this study confirmed that managers in Croatian tourist accommodation recognize that climate change is a serious problem in the world. This is confirmed by the very high median in the analysis of the expressed acceptance or agreement of the respondents with the stated statement.

The proportion of those who do not recognize the severity of climate change is still high despite the fact that climate change is a complex, abstract, but perhaps the most serious environmental problem caused by the daily activities of hundreds of millions of people, which could endanger the survival of the entire planet. Specifically, when claiming that "*climate change is a serious problem in the world*", the study found an average value of 5.70 with a median of 6.00, with a range between the 25th and 75th percentiles between 5.00 and 7.00.

According to a survey conducted by the Pew Research Center (2015) on a sample of the world population, the majority of respondents from all 40 countries surveyed consider climate change a serious problem, with 54% of those reporting climate change as a very serious problem.

In a survey conducted in Croatia ten years ago in the general population, as many as 96% of respondents agreed that climate change was a problem or a very serious problem (Landau, Legro & Vlastic, 2008).

The survey (Bohdanowicz, 2006) found that most of the tourism representatives who participated in the survey recognized that tourist facilities had an impact on the natural environment. The magnitude of the impact was assessed as medium to significant (64% and 23.6% of respondents from Sweden, respectively 52.4% and 16.9% of respondents from Poland). Serious environmental concerns were expressed by most hoteliers (94.7% in Sweden and slightly fewer - 82.3% in Poland).

In 2014, the International Panel on Climate Change stated that "it is confirmed with near certainty that human activities are the dominant cause of global warming, leading to multiple manifestations of climate change" (IPCC 2014, 45). Accordingly, there is an almost global consensus among the scientific community that global warming is caused predominantly by human activity. There is agreement that there is a causal link between human activity and climate change. There is compelling evidence that climate change cannot be explained by the theory of natural variability alone, but that it is due to the predominantly human, anthropogenic impacts, especially the excess emissions of fossil fuels and land-use change (Houghton et al., 2001). In this study, when claiming that "global warming is caused predominantly by human activity", an average value of 5.34 was found, with a recorded median value of 6.00, with a range between the 25th and 75th percentiles between 4, 00 and 6.00. A study (Leiserowitz, Smith & Marlon, 2010) found that only 50% of Americans understand that global warming is caused mainly by human activity. A few years later, a similar survey was conducted by CSIRO (2015), which showed an increase in the percentage of respondents in the sample who confirmed that climate change was caused by human activity, or 62% confirmed their existence.

CONCLUSION

The results of this scientific research can help to understand the beliefs and attitudes that underlie managers' behavior in tourism facilities in practice when making decisions related to the implementation of policies, methods and techniques related to the impact of tourist accommodation on climate change. In a broader sense, understanding the behavior of managers in tourist facilities contributes to a more effective implementation of the policy of reducing the ecological footprint of tourist accommodation to the atmosphere and consequent climate change, as well as adapting management in the accommodation industry to changes related to the impact of climate change on tourist accommodation. The results have shown that managers have developed a certain level of environmental awareness of the importance of the global climate change issue. This is confirmed by the very

high median in the analysis of the expressed acceptance or agreement of the respondents with the stated statement. The proportion of those who do not recognize their severity is still high despite the fact that climate change is a complex, abstract, but perhaps the most serious environmental problem caused by the daily activities of hundreds of millions of people, which could endanger the survival of the entire planet. However, the results showed that tourism managers did not sufficiently recognize the causal link between tourism, atmospheric pollution and global warming with the effects of climate change. This is important because tourism development that consistently ignores environmental issues is unlikely to remain sustainable in the long term (Pigram, 1990). Sustainable tourism should make optimum use of environmental resources, which are a key element in tourism development, maintaining essential ecological processes and helping to conserve natural heritage and biodiversity (UNWTO, 2005).

REFERENCES

- Afrić, K. (2002). Ekološkasvijest-pretpostavkarješavanjeekološkihproblema. *Ekonomskipregled*, 53(5-6), 578-594. <https://hrcak.srce.hr/file/44505>
- Fishbein, M., & Ajzen, I. (1980). Understanding attitudes and predicting social behavior. Prentice-Hall.
- Ajzen, I. (2002). Perceived behavioral control, self-efficacy, locus of control, and the theory of planned behavior 1. *Journal of applied social psychology*, 32(4), 665-683. <https://doi.org/10.1111/j.1559-1816.2002.tb00236.x>
- Ančić, B., Puđak, J., & Domazet, M. (2016). Vidimo li klimatskepromjene u Hrvatskoj?: istraživanje stavova o nekim aspektima klimatskih promjena u hrvatskom društvu. *Hrvatski meteorološki časopis*, 51(51), 27-45. <http://hrcak.srce.hr/168219>
- Bohdanowicz, P. (2006). Environmental awareness and initiatives in the Swedish and Polish hotel industries—survey results. *International journal of hospitality management*, 25(4), 662-682. <https://doi.org/10.1016/j.ijhm.2005.06.006>
- Bramwell, B., & Bernard L. Towards innovation in sustainable tourism research? *Journal of Sustainable Tourism*, 20.1 (2012): 1-7. <https://doi.org/10.1080/09669582.2011.641559>
- Eurobarometer, S. E. (2009). 313; Europeans' attitudes towards climate change. http://ec.europa.eu/public_opinion/archives/ebs/ebs_300_full_en.pdf
- Eurobarometer-Special Eurobarometer (2017). 459; Climate change. Brussels: European Commission. https://ec.europa.eu/clima/sites/clima/files/support/docs/report_2017_en.pdf

Farid, H., Hakimian, F., Nair, V., Nair, P. K., & Ismail, N. (2016). Trend of research on sustainable tourism and climate change in 21st century. *Worldwide Hospitality and Tourism Themes*. <https://doi.org/10.1108/WHATT-06-2016-0032>

Fleurbaey, M., Kartha, S., Bolwig, S., Chee, Y. L., Chen, Y., Corbera, E., ...& Okereke, C. (2014). Sustainable Development and Equity: Contribution of Working Group III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change. In *Climate Change 2014: Mitigation of Climate Change*. Cambridge University Press.

Pachauri, R. K., Allen, M. R., Barros, V. R., Broome, J., Cramer, W., Christ, R., ...& Dubash, N. K. (2014). *Climate change 2014: synthesis report. Contribution of Working Groups I, II and III to the fifth assessment report of the Intergovernmental Panel on Climate Change* (p. 151). IPCC <https://epic.awi.de/id/eprint/37530/>

Keany, F. „Three quarters of Australians believe climate change is real; views on cause correspond with world view, voting patterns: CSIRO report“ ABC NEWS, 3 Nov 2015. <https://www.abc.net.au/news/2015-11-04/majority-of-australians-believe-in-climate-change-csiro-report/6909940>

Landau, S., Legro, S., & Vlašić, S. (2008). Dobra klimazapromjene. Klimatske promjene i njihove posljedice u društvu gospodarstva u Hrvatskoj, UNDP Hrvatska.

Leiserowitz, A., Smith, N., & Marlon, J. R. (2011). American teens' knowledge of climate change. Yale University. New Haven, CT: Yale project on climate change communication, 5. <http://www.ourenergypolicy.org/wp-content/uploads/2013/05/American-Teens-Knowledge-of-Climate-Change.pdf>

Leviston, Z., & Walker, I. (2012). Beliefs and denials about climate change: An Australian perspective. *Ecopsychology*, 4(4), 277-285. <https://doi.org/10.1089/eco.2012.0051>

Ojala, M. (2015). Climate change skepticism among adolescents. *Journal of Youth Studies*, 18(9), 1135-1153. <https://doi.org/10.1080/13676261.2015.1020927>

Peršić, M., & Smolčić-Jurdana, D. (2006). Greening tourism and hospitality industry. 18th Biennial International Congress "Tourism & Hospitality Industry 2006-New Trends in Tourism and Hospitality Management". https://bib.irb.hr/datoteka/273158.Greening_Tourism_Persic_Smolcic_2006.pdf

Petrić, L., & Pranić, L. (2010). Ekološka svijest u hrvatskoj smještajnoj industriji. *Actaturistica nova*, 4(1), 5-21. <http://hrcak.srce.hr/61460>

Pew Center (2006). Pew global attitudes project. *A report published by the Pew Center for Climate Change*. Pew Global Attitudes Project, 2006

Pigram, J. J. (1990). Sustainable tourism-policy considerations. *Journal of Tourism Studies*, 1(2), 2-9.

<https://www.cabdirect.org/cabdirect/abstract/19911896686>

Scott, D., Hall, C. M., & Stefan, G. (2012). *Tourism and climate change: Impacts, adaptation and mitigation*. Routledge.

UNWTO, U. (2005). *Making tourism more sustainable—a guide for policy makers*. New York: UNEP UNWTO. <http://sdt.unwto.org/content/about-us-5>