

The Relationship between Sustainable Community Development and Tourism

A case study of Checiny, Poland



Practising Interdisciplinary Field Research on the Environment

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Preface

This report was written as part of the examination for the course Practising Interdisciplinary Field Research on the Environment in the Faculty of Science at the Copenhagen University, in collaboration with Roskilde University and Warsaw University. The report was handed in on April 5, 2024.

Abstract

In 2014, Checiny, a town in Poland, underwent a revitalization process with the aim of increasing attractiveness for tourists. While tourism can be a significant contributor to economic growth, environmental conservation, and societal development, the way it unfolds should align with principles of sustainable development for a positive impact on the local community. This interdisciplinary study examines the impact of tourism on local livelihood development in Checiny commune, considering three dimensions of sustainability: economic, social, and environmental. Using a mixed-methods approach, 37 business surveys, 15 key informant and tourist site interviews, and 2 focus group activities were conducted with various participants from Checiny. When it comes to economic aspects, the results indicate that most businesses do not rely on tourism and the Royal Castle, the main attraction, receives the most funding, overshadowing the others. However, the local residents perceive it as a catalyst for economic development. Regarding environmental aspects, while most tourist site managers do not see tourists as causing many issues, local residents were more critical. Finally, concerning the social aspects of tourism in the area, many benefit from local entrepreneurship opportunities; however, the need for better public transportation was pointed out. Additionally, responses from local residents show that tourism is generally beneficial for community development.

Acknowledgements

Finally, the acknowledgments. Why ‘finally’, you might think? For the reason that whenever this research became overwhelming, the data abstruse, and us tired, we gratefully thought of those people who stood by us along the way, and worked even harder to eventually get to writing this section.

Ludwig Wittgenstein famously said “the limits of my language mean the limits of my world.” With this in mind we want to acknowledge our talented and dedicated translators, Małgorzata Pawlak, Dominik Brajta and Justyna Kujawa for their invaluable willingness to help us in delving into our topic without hesitation.

Mariola Zalewska from the University of Warsaw and Robert Jakowski, the mayor of Checiny town and commune, who introduced us to the community and the community itself: from the high school students to tourist sites managers and seniors, thank you! For the thoughts you shared, the kindness you treated us with, and the wonderful tours in the sites.

Andrzej Kot, who walked with us in the nearby forest and answered all the questions with professionalism and patience.

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Abbreviations

European Union	EU
United Nations Environment Programme	UNEP
World Tourism Organization	WTO
European Centre for Geological Education	ECGE
Tourist Information and History Center	TIHC
Sustainable Development	SD
Environmentally Responsible Behaviour	ERB
Confidence Interval	CI

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Introduction

Tourism is one of the largest and fastest growing industries in the world (Thomas, 2013). It is described to be multifaceted due to incorporation of inputs from economic, social, cultural and environmental aspects (Lickorish & Jenkins, 2016). Today, this sector is considered to be one of the largest contributors to the world economy (UNEP, 2002), as well as to environmental conservation, and societal development (Richardson, 2021).

Economic, environmental and social dimensions constitute the three pillars of sustainable development (SD), which has found its place in academic literature in relation to the tourism sector (García-García et al., 2023). According to Richardson (2021), SD is fundamental for human and economic development while balancing the functionality of ecological and social systems that support economies. Given the significance of tourism, the way it unfolds must align with the principles of sustainable development to ensure the long-term viability and positive impact on the community (UNEP, 2005).

Tourism plays a key role in the economic development of Poland, which is mainly facilitated by the presence of environmental and historical values (Kapera, 2018). The country is divided into 16 provinces known as voivodeships (Kapera, 2018). Our research site, Chęciny, is a commune in Świętokrzyskie Voivodeship that has unique natural, geological and cultural values (Pałka-Łebek et al. 2019). However, according to Doroz-Turek (2019) poor infrastructure and lack of tourist services discouraged visiting the centre town and spending more time in Chęciny. To address these challenges and generate interest, a comprehensive revitalization project was undertaken in Chęciny in 2013 and 2014 (Doroz-Turek, 2019). Revitalization project, also known as “bringing back to life”, was focused on spatial, technical, social, and economic changes of the town (Pałka-Łebek et al. 2019).

Kamińska (2021) mentions that according to the officials revitalization investment has substantially increased the level of tourist attractiveness of the town emphasising its unique history and culture. However, the study (Kaminska, 2021) also points to the existing research gap on the impact of market square revitalization among residents. Having in mind the connection between revitalization and tourism development, we have decided to focus our research on the impact of tourism on three dimensions of SD within the timeframe of the post-revitalization period, which is 10 years.

Research question

Our research question is:

In relation to the three dimensions of sustainability, how has tourism impacted sustainable community development in Chęciny over the past 10 years?

To address the research question the following objectives were formed:

1. To understand the impact of tourism economic dimension, assessing the local business performance and tourist site funding.
2. To understand the impact of tourism on the environmental dimension, particularly sustainable practices, environmentally responsible behaviour, as well as perception of environmental impact.
3. To understand the impact of tourism on social dimension, namely the destination accessibility, local employment, and local entrepreneurship.

The report is structured as follows. The succeeding section presents background information on Checiny and revitalization process. Followed by the description of the theoretical framework for our research. The third section will outline the ethical considerations and methods used during the fieldwork. Next section will present the results and discussion of the research. The final section will explore the reflections and conclusion of our study.

Background

Description of the Study Site

The research was conducted between 29th of February to 13th of March 2024 in Checiny, an urban-rural commune located in Świętokrzyskie (Holy Cross) Province. The commune is best known for Royal Castle, which was built in the late 12th century and is one of the most visited tourist sites in Poland (Pałka-Łebek et al., 2020). It is a home of many historic buildings such as a synagogue from the 17th century (currently known as The Jewish Culture Remembrance Centre), as well as recently established scientific centres, namely European Centre for Geological Education (ECGE), Leonardo Da Vinci Science Center (Pałka-Łebek et al., 2020). Also, as mentioned by Pałka-Łebek et al. (2020) the commune is part of the Province that has several and diverse natural and landscape values. *See tourist sites of Checiny commune in the figure 1 below.*



Figure 1: Checiny map of tourist attraction sites in polish (TIHC of Checiny Commune, n.d.).

Revitalization

Before visiting the study site we have conducted a literature review, focusing on the area, tourism, and development (Pałka-Łebek et al., 2020; Jaszczyk et al., 2021; Kamińska, 2021; Doroz-Turek, 2019). Jaszczyk et al. (2021) pointed out the implementation of the revitalization process as an important socio-economic development tool for small towns, which as stated by Pałka-Łebek et al. (2020) is also incorporated in development goals.

In 2012 Checiny received funds from the European Union marking the beginning of the revitalization of its historical centre, which lasted till 2014 (Kamińska, 2021). The process included the renovation of surrounding streets as well as upper and lower markets. The commune was redesigned to better accommodate both locals and visitors, and urban space was cleaned up (Pałka-Łebek et al., 2020). *See figure 2 below for before and after revitalization photos of market square.*



a1.



a2.



b1.



b2.

Figure 2: Before (a1,a2) and after (b1,b2) revitalization photos of market square in Checiny (Kamińska, 2021).

According to Doroz-Turek (2019), the interest towards the Royal Castle has increased by 60% after revitalization compared to the pre-work period. The data gathered also showed that from 2015 there have been an increase in tourist visitors. We can see that 18% of the data is accounted for by a linear regression model (*see figure 3.1*). When looking at the visitor data

combining the data from four tourist sites (the Royal Castle, Paradise Cave, Niemczówka tenement, Ethnographic park in Tokarnia) excluding ECGE¹. From the combination we can see that there has been a general increase in the amount of tourists, with a loss in tourists in the years 2020 and 2021 (See figure 3.2).

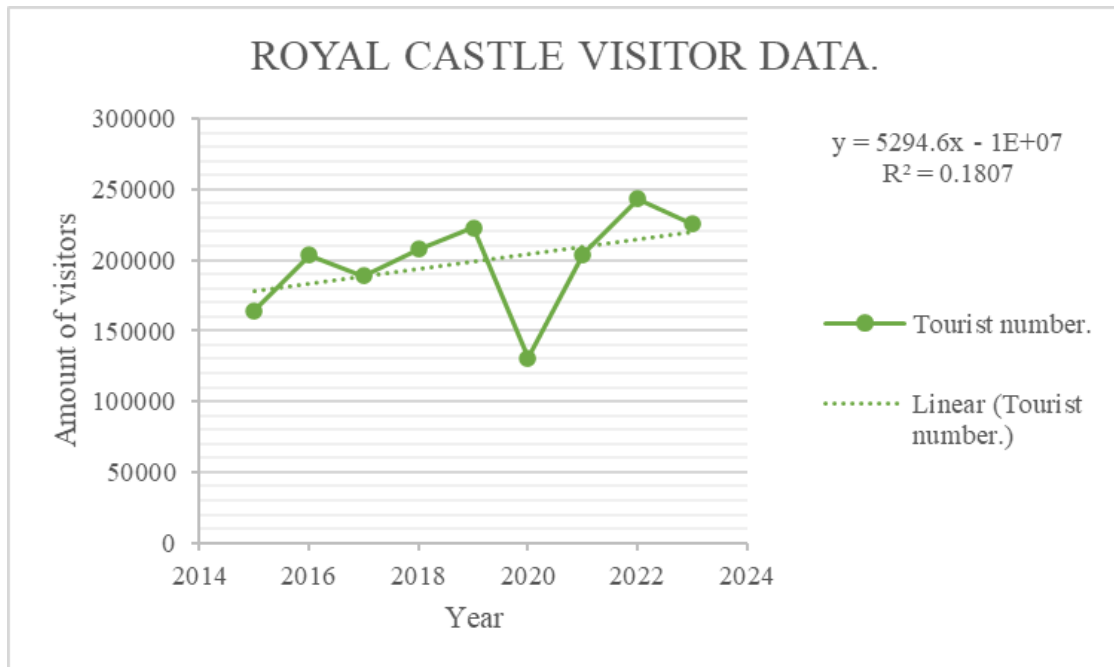


Figure 3.1: Shows that the Royal Castle has an increase in tourist number from the years 2015-2023.

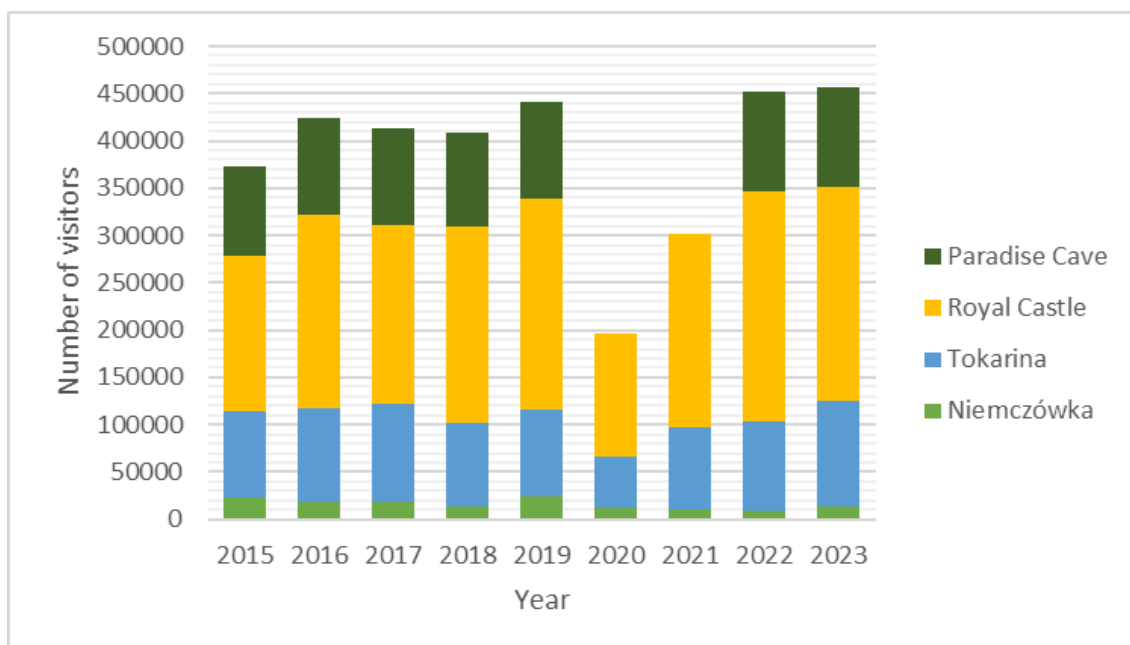


Figure 3.2: Shows the combination of visitor data from four sites, taking into account that the Paradise Cave was closed in 2020-2021.

¹ The exclusion of ECGE was because there is only data from the years 2022 and 2023.

Theoretical Framework

Three Dimensions of Sustainable Development

A sustainable community is the community that is constantly modifying itself to meet the social and economic needs of the residents, at the same time preserving the environment's ability to support it (Roseland, 2000). Roseland (2000) also notes that developing a sustainable community requires shifting towards sustainable practices.

The analytical framework for our research is based on the three pillars of sustainability, which was initially adopted from the UN World Commission on Environment and Development report, “*Our Common Future*” (1987), otherwise known as the Brundtland Report (Purvis et al., 2019). Sustainability can be pictured in different ways, with one of the most common ways being the three overlapping circles, representing environmental, economic and social dimensions of sustainability (Rosen, 2018). The three dimensions are examined below (see figure 4).

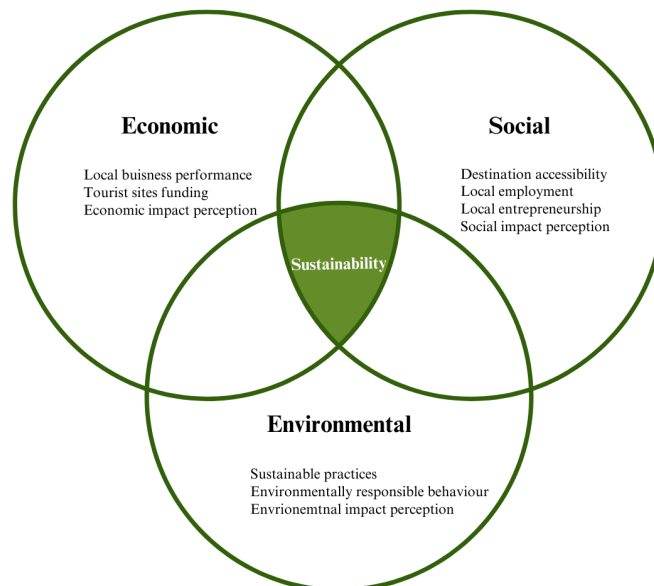


Figure 4. Three Dimensions of Sustainability with the aspects that are discussed in this research (Venn diagram inspired by the Brundtland Report (1987))

Early academic literature that focuses on sustainability, mainly took into consideration either environmental pillar, or economic, leaving the social pillar in the shadows up until recently (Rosen, 2018). In relation to tourism, social sustainability focuses on community engagement, local perceptions, social impacts and other aspects, at the same time emphasising local communities' involvement in tourism (Santos, 2023).

Prihanti et al. (2020) have conducted a systematic review with 19 works of literature focused on the social dimension of the three dimensions of sustainability. The literature studied the comprehension and construct of the social pillar in the sustainable development (SD) debates

(Prihanti et al., 2020). The review discovered 25 aspects of the social pillar (Nugraheni et al, 2019, cited in Prihanti et al., 2020). However, as mentioned in Prihanti et al. (2020), there are a number of aspects which are discussed more in literature, than others, e.g. the most discussed is equality, while the second most incorporated aspects are employment, health, social cohesion, inclusion, and coherence. In our study we discuss destination accessibility, local employment, local entrepreneurship, and social impact perception.

Economic sustainability is a system of production that can satisfy current levels of consumption without challenging future needs (Lobo, Pietriga, & Appert, 2015, as cited in Rosen, 2018). The academic literature provides examples of various economic benefits derived from tourism, such as balance of payment, regional development, economic diversification, levels of income, state revenue (Creaco & Querini, 2003). Thus, there are a number of indicators to measure the economic sustainability, however based on our findings we have decided to assess local business performance, tourist sites funding, and economic impact perception. Megawati et al. (2023) also discuss local businesses and the increase in their income as an impact of tourism development.

In the case of environmental sustainability, it is the capability of the Earth to support humans and the activities related to them (Rosen, 2018). In academic literature, there are two major challenges related to environmental sustainability, namely climate change and stratospheric ozone depletion (Rosen, 2018). However, in our research we are focusing on the environmentally responsible behaviour (ERB), the sustainability practices, and environmental impact perception that can contribute to environmental sustainability, even though they are not directly mentioned under this pillar in the academic literature. According to Wang et al. (2023), environmentally responsible behaviour refers to the actions taken by both residents and tourists to preserve the natural ecological environment of tourist destinations in specific tourism situations, ultimately benefiting the overall environmental well-being of these sites.

These three pillars of sustainability will provide a direction and insight for assessment and discussion of tourism's impact on the local community in Checiny.

Ethical Considerations

Ethical considerations played a major role in the process of planning and conducting our research. To protect the privacy of participants and ensure the confidentiality of their information, the following actions were taken:

- Obtaining consent from respondents in written and verbal forms;
- Using GDPR-approved² software when working with information obtained from respondents;
- Respecting the right of the respondents to refuse answering certain questions;
- Respecting the right of the respondents to withdraw their participation from the study at any time;
- Using simpler language instead of academic terminology in the field.

² University of Copenhagen's joint records of the processing of personal data in research are presented to the Danish Data Protection Agency at their inspections. The record is a statutory requirement that follows from the GDPR (University of Copenhagen, 2023).

Methodology

We have used the mixed-method approach, which is a type of research that involves collection and analysis of both qualitative and quantitative research approaches for the in depth understanding and corroboration (Almalki, 2016). To assess how changes in tourism over the past decade have impacted the economy, environment, and community in Checiny, we conducted:

- semi-structured interviews with key informants and site managers;
- surveys with businesses;
- H-form and participatory mapping as focus group activities.

This section is divided into three parts, each exploring one of the methods used in respective order. Specifically, we explain in detail the method, the sampling strategy, the analysis of the data and limitations.

Interviews

According to Leavy (2020), the most widespread form of interviews in social sciences are semi-structured interviews, which make better use of the dialogue allowing follow-up on the important aspects, thus increasing the visibility of the interviewer (Leavy, 2020). Interviews served as a crucial method for gaining insights into the impact of tourism in Checiny. In total, we have conducted 15 interviews, comprising 6 with key informants and 9 with tourist site managers.

Key informants were important for our research, since they provided a high level perspective and insight (Pahwa, 2023) into the Checiny town and community. The key informants are the Mayor of Borough and town Checiny, representatives from the Tourist and Historical Information Center of the Chęciny Commune, the Świętokrzyskie Agricultural Advisory Center, the Cooperative Bank in Kielce, the Kielce Forest District, and the Culture and Sports Center in Checiny (*see Table 1*).

Table 1: Information about key informants

Key informants	Description
Robert Jakowski	The Mayor of Borough and town Checiny
Niemczówka tenement	Otherwise known as the Tourist Information and History Center (TIHC) of Chęciny, it provides tourists with information, and maps. The building also serves as a place, where tourists can visit exhibitions and watch documentaries about Checiny

Key informants	Description
	(Niemczówka tenement-Tourist Information and History Center of Chęciny, n.d.).
Świętokrzyskie Agricultural Advisory Center in Modliszewice	The activities of the centre include: professional advice in the field of modern and effective technologies in agricultural production, agricultural training, organising promotional, fair, and exhibition events (Świętokrzyskie Agricultural Advisory Center, n.d.).
Cooperative Bank in Kielce	The bank is one of the largest cooperative banks in Poland, operating throughout the country. Currently, 22 units of the Bank operate in the Świętokrzyskie Voivodeship (Bank Spółdzielczy w Kielcach, n.d.).
Kielce Forest District	It is an independent organisational unit of the State Forests operating under the Forest Act. It reports to the Regional Directorate of State Forests, which supervises and coordinates activities in its area (Karst, 2014).
Culture and Sports Center in Chęciny	It is a local government cultural institution that is used as an entertainment and sports hall (Culture and Sports Center in Chęciny, 2014).

Additionally, interviews were conducted with managers of various tourist sites, including the scientific tourism sites: European Centre for Geological Education, Leonardo Da Vinci Science Center; cultural tourism sites: Franciscan Monastery, Museum Chamber of Ore Mining in Miedzianka, Pedzikow Castle, The Jewish Culture Remembrance Centre; and nature tourism sites: Bolmin Reservoir - Camping "Cameleon", Ethnographic Park in Tokarnia, Paradise Cave and the Neanderthal Centre (*see Table 2*). These sites were chosen based on the brochure (Niemczówka tenement-Tourist Information and History Center of Chęciny, n.d.) for travellers made by the Chęciny town and commune and availability of site managers who gave their consent to participate in our interviews.

Table 2: Information about tourist sites

Type of tourism	Name of site	Description of a site
Scientific tourism	European Centre for Geological Education	Operating within the Faculty of Geology at the University of Warsaw, the research institute provides access to advanced geological laboratories and fosters professional research and education in geology and related sciences. Additionally, it serves as a venue for institutions and companies seeking conference facilities for professional events (European Center for Geological Education, n.d.).
	Leonardo Da Vinci Science Center	Operating as a branch of Regional Science and Technology Center the centre offers scientific exhibitions, workshops and shows (Leonardo Da Vinci Science Center, n.d.).
Cultural tourism	Franciscan Monastery	The monastery complex, founded by King Casimir the Great in 1368, is built of stone in the Gothic style. Its history is rich, having been repurposed as a prison, restored as a hotel and tourist shelter, and finally reclaimed as a monastery in 1991 (Historical attractions - Franciscan monastery, n.d.).
	Museum Chamber of Ore Mining in Miedzianka	The Museum Chamber of Ore Mining in Miedzianka was established in 2008. Its activities include gathering, analysing collections scientifically, and presenting them to the public for tourism and educational purposes (Museum Chamber of Ore Mining in Miedzianka, n.d.).
	Pedzikow Castle	In the centre of the Świętokrzyskie area, Gród Pędzików is a mediaeval knight's village. It offers the historical lesson combined with an experience of the mediaeval environment (Grod Piezikov, n.d.).
	The Jewish Culture Remembrance Centre	After 1638, when the building permit was granted, the synagogue in Chęciny was constructed. The Center facilitates intercultural communication and understanding by acting as a venue for meetings,

		conferences, exhibitions, and educational activities (Jewish Heritage Europe, 2024).
Nature tourism	Bolmin Reservoir - Camping "Cameleon"	The Cameleon is a campsite area where there is room for outdoor activities. In connection to the camp there is a restaurant. The location for the camps is situated close to biking paths and Checiny's other attractions (Bolmin Reservoir, n.d.).
	Ethnographic Park in Tokarnia	<i>"Its task is to preserve the monuments of village and small-town architecture of Kielce area and present them in an environment similar to the original one and in natural complexes of village fragments"</i> (Kielce Countryside Museum, n.d.).
	Paradise Cave and the Neanderthal Centre	The cave is a nature reserve that has only been accessible to tourists under a guide's supervision since 1972. The length of its tourist route is 180 metres. There is also a museum exhibition on working tools of Neanderthal men (Paradise Cave, n.d.).

Interviews were conducted in semi-structured formats, which allowed flexibility in questioning. The first part of the interview questions aimed to assess the impact of the 2014 revitalization program on Checiny and its tourism sector, while exploring opportunities and challenges within the industry. We wanted to understand the significance of tourism for the town's development and how it affected the local community in the past decade. Additionally, we asked about existing development strategies focused on tourism and if there have been changes in funding and tourist numbers. Last but not least, we asked questions regarding the environment. Overall, these questions prioritise understanding the role of tourism in driving local development and shaping the town's future. *See Appendix 1 for the interview questions.*

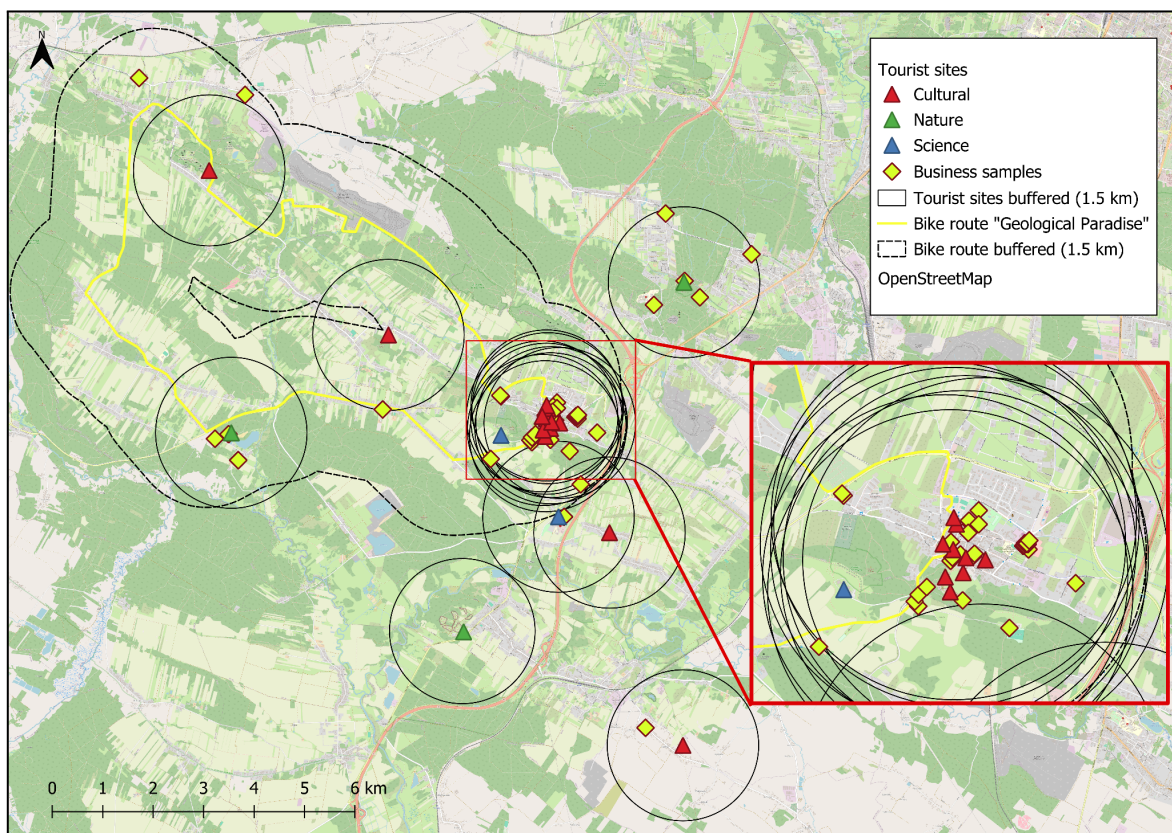
The interviews were transcribed in English and coded through the NVivo14 qualitative data analysis software³. The themes used for coding were 'Community', 'Economy', 'Environment', 'Major events since 2014', and 'Tourism'. *See Appendix 2 for the code book.*

The major challenge in relation to this method was the language barrier, since most of the interview respondents were not English speakers. Despite the help of translators, the indirect communication oftentimes did not allow us to ask follow-up questions.

³ NVivo 14, Release 14.23.3 (61)

Surveys

The survey method gave us insights into the business structure (establishment date, employee numbers, etc.), tourism in Checiny town and commune and the impact it has had on the business (*See Appendix 3 for survey questions*). In total we conducted 37 surveys with 42 purposive sampling points. Firstly, we checked the businesses close to the tourist sites and a main bike route in the area (*Checiny and the Area - Geological Paradise, 2024*) via OpenStreetMap (OSM) geographic database looking at relevant OSM-keys⁴ (*OpenStreetMap Taginfo, 2024*). Afterwards, the buffer range of 1.5km was chosen based on the distribution of businesses on the map (*see map 1 below*). The OSM data does not contain every business located in the buffer, which is why we did a combination of purposive and convenience sampling inside the buffer.



Map 1. This map shows the sampling of businesses in Checiny's commune, with a zoom-in on the town of Checiny.

The survey software used for survey creation and data collection is “Survey123 ArcGIS”. It is GDPR-compliant (*Compliance, n.d.*), and the software has mobile applications for gathering the data in the field (*Helping the Homeless with GIS, n.d.*). It is also worth mentioning that the software made it possible to add a new site if survey respondents mentioned a site we did not know of beforehand (snowball sampling). A 95% confidence was used to see whether the true population lies within the sample answers's confidence interval.

⁴ “OpenStreetMap uses tags of the form key=value to add meaning to geographic objects (*OpenStreetMap Taginfo, 2024*).”

One of the major challenges of this method was seasonality, since we visited some businesses that were still closed in March.

Focus groups

One of the key aspects of our research was to understand how local people perceive the effects of tourism on the three pillars of sustainability. To gain insights into their perspectives, we organised focus groups, conducting H-diagrams and participatory mapping activities. The sampling method used for these activities was clustered sampling, dividing the population into separate cluster groups and then randomly selecting participants from these clusters (Anderson et al, n.d.). We divided the population into two clusters: one of them consisting of 28 high school students aged 16-19 from the District School Complex, and the other comprising 7 seniors aged 60 and above from the University of Third Age. This approach was adopted to ensure more diverse representation across demographics, especially taking into account the fact that senior citizens make up one-fourth of the town's population (Kamińska et al., 2021).

H-form was conducted with both groups, while participatory mapping was employed only with the students.

H-form: "Rank and explain"

To understand the local perspective on tourism and its impact on community, environment, and economy we used the method of "H-Form", that was introduced by Guy and Inglis (1999). According to them, the H-Form "helps individuals and/or groups record their own views and ideas in a non threatening and open yet structured way which fosters individual expression as well as common understanding and consensus. The sequence and clear framework that the H-form provides keeps the discussion, focussed, specific and progressive" (Kenyon and Hunsberger, 2008).

For each focus group, we prepared three A0 sized flipcharts, where we drew big 'H' letters. On the top of each of them, three questions were written in Polish. The questions are as follows:

1. How does tourism affect the local community?
2. How does tourism affect the environment?
3. How does tourism affect the economy?

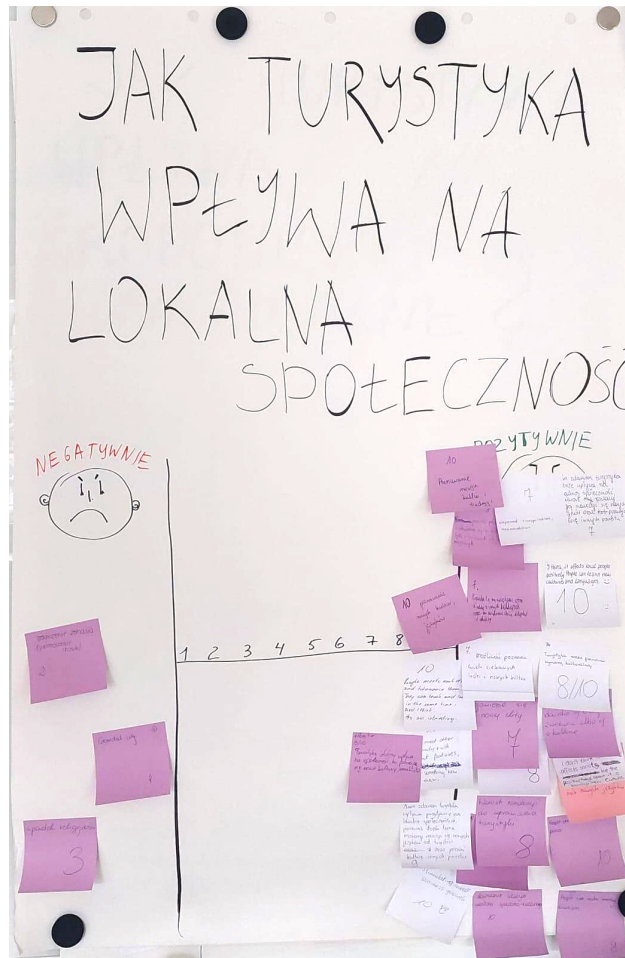


Figure 5. An example of an H-Form: Q1: How does tourism affect the local community?

At the left part of the H, a sad face was drawn, while on the right side – a happy face. On the horizontal line of the letter ‘H’, there was a scale of 1-10, 1 being the most negative and 10 being the most positive, where focus group participants could choose a number corresponding to their perspective on each question. To answer the questions, each participant was given 2 sticky notes for each flipchart. It was not mandatory to write their thoughts under both positive and negative faces. The central part was used to express mixed opinions about a question. For each question approximately 10-15 minutes were given to the participants. Overall, each focus group activity lasted up to 45 minutes.

Afterwards, the notes were carefully translated and grouped. Overall, we received 87 answers from both focus groups. The answers were later coded and analysed through NVivo. Each of them were coded according to the theme and attitude. The theme codes include: ‘Impact on community’, ‘Impact on environment’, and ‘Impact on economy’. The attitude codes include: ‘Positive’, ‘Negative’, ‘Mixed’, ‘Neutral’. We analysed the results using Matrix Coding queries, which allows us to see the coding overlaps between the theme codes and attitude codes.

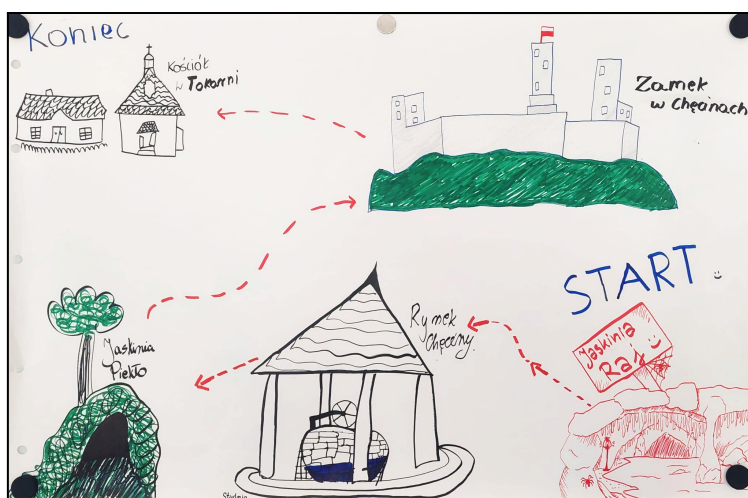
One of the challenges of this activity was that some participants gave us more global than local answers to the questions.

Participatory mapping

Another method that we used as part of the focus group was participatory mapping to gain insight into youth's perception of the local tourism sites, identifying the ones that they see as important and recommend. We specifically used the method of mental mapping which is a part of participatory mapping methods that aim to provide valued visual representations of how local communities see place and the significance in the place (Corbett, 2009). The process is often seen as being inclusive and democratic (Cochrane & Corbett, 2018). The mental mapping tool can be used to visualize the experience and perception of people involved (Catney et al., 2019; Giesecking, 2013).

In the case of our research, mental mapping was used to see the viewpoint of youth on the local tourism landscape (attractions, shops, restaurants, etc.) if they recommended attractions for a tourist to see in a day visit to Checiny. The youth group was 28 students in the age range of 16 to 19 years split into groups of 9, 9, and 10 people. We facilitated the activity by giving the prompt, A0-size paper, and four markers (black, red, green, blue). A0 paper makes room for students to draw as they want with minimized constraints (Giesecking, 2013). The prompt was to make a route for a tourist visiting Checiny for one day. The map should include the beginning of the journey and the end. The prompt makes it a more standard geography task that's why we added the important note to keep in mind that the map should be usable for a real person following examples from Giesecking (2013) for how participants remembered more details if they were "(...) working from the scale of the body". The analysis of the maps was conducted based on Giesecking (2013) but using 13 analytics that were applicable with our prompt and what we wanted out of the method. The analytics chosen are presented in the Results and Discussion section of this report.

Participatory mapping was particularly challenging for us, because the decision to conduct it was made during the fieldwork. In retrospect, we realised that the instructions given to students could have been better formulated to fit the objectives of our research.



An example from the participatory mapping method.

Results and Discussion

Based on the theoretical framework we have grouped the results into three groups, namely the effect of tourism on the economy, environment, and community of Checiny.

Economic Dimension

Tourism is considered to be one of the catalysts for economic development, impacting on the creation of a foreign exchange, job opportunities as well as local revenue (Manzoor et al., 2019). The effect of tourism on Checiny's economy is analysed through dividing our results into three categories, which are local business performance, tourist sites funding, and economic impact perception.

Local Business Performance

According to Othman and Rosli (2011), there are several internal (e.g. marketing resources, previous experience, skill level) and external (e.g. policies, access to infrastructure) factors that can influence business performance, and tourism is considered an external factor. In our research we measured the impact of tourism on the economy through measuring its effect on local businesses.

Out of 37 businesses surveyed, 21 were established after 2014, which was initially chosen as a point of departure for our research. However, the reason for the establishment date was not addressed in the survey.

Over the span of the past ten years, 15 businesses have observed an increase and 10 observed substantial increase, 8 have observed no change, while 3 haven't observed any change in the number of tourists in Checiny. Meanwhile the tourist site managers' responses and visitor data from 5 tourist sites (the Royal Castle, Paradise Cave, ECGE, Niemczówka tenement, except for Ethnographic park in Tokarnia) showed an increase in the number of tourists (*see Appendix 4 for visitation data*). Apart from revitalization, COVID-19 pandemic was another major event that was mentioned by managers and businesses as a challenge for the sectors, affecting the visitor data.

However, the increase in tourist numbers over the years did not have a noticeable influence on businesses. This is largely because only 10 businesses indicated tourists as their primary customers, while the majority, 22, depend on local people (*see table 3*). In addition, 12 out of 37 businesses observed a variation in their level of income due to change in tourism over the last decade. It is worth noting that out of these 12 businesses only 4 mentioned tourists as primary customers. From this we can observe that $\approx 11\%$ ($CI=0.13$) of all businesses dependent on tourism have benefitted from the change in tourist numbers. Given the low confidence level, the 11% may not be representative of the total population of business.

Table 3. Shows the different ways that businesses have seen tourism affecting them.

Question \ Who are your primary customers?	Locals	Tourist	L&T	Business	T&B	Total
Profit variation and positive on tourism	8	3			1	12
No profit variation and positive on tourism	10	7	1	1		19
No profit variation and not affected by tourism	3		1			4
No profit variation and don't know regards to tourism	1					1
N/A						1
Total	22	10	2	1	1	37

L&T (Locals & Tourist), T&B (Tourist & Business).

Tourist Sites Funding

Public funding has been a driving force for local and regional development over the past decades, playing a significant role in numerous tourism-oriented projects (Setoodegan et al., 2022).

Checiny town receives a lot of funding for its development from various sources, as stated by the Mayor of Borough and town Checiny Robert Jaworski:

“85% of overall fundings for the region goes to Checiny. It has been named as the leader of this Voivodeship of Świętokrzyskie, in terms of being eager to take on funds from different organisations, like the Government or the European Union” He believes that this result is due to active work of Checiny’s municipality: *“We actively look out funds we can apply for, brainstorm them and aim for quick resolution of our projects”*

The majority of the fundings to the development of tourism in Checiny comes from the European Union. The representative of the Cooperative Bank in Kielce stated that *“Checiny has taken a lot of money from the European Union during the last 10 years.”* This

information has been also confirmed by the manager of the Pedzikow Castle, who mentioned that *“This region does use a lot of the EU funds.”*

In regards to where majority of the fundings are directed to, the TIHC of the Chęciny Commune stated that *“the biggest part of the funding goes to the castle as it's the biggest and oldest one at the same time. So it needs more reconstructure to be in good condition and create a good experience for visitors.”* The manager of the The Jewish Culture Remembrance Centre told us that *“The castle was mainly funded by EU funds.”*

However, not every tourist site actively receives funds for their sites. For instance, the manager of the Paradise Cave and Neanderthal Centre stated *“We are just going off our own funds. Things come from tickets. Right now, we are applying for EU funds for a big project we are working on.”* Other sites, such as Pedzikow Castle are fully self-financed, its manager told us: *“We do not get anything, unfortunately, since it is a private site, all the expenses are from our pocket. We don't get any money from the commune, city or voivodeship. We are on our own.”*

It is clear that all the stakeholders agree upon one thing: the Royal Castle is the symbol of Checiny if not the whole region. The survey data showed that 73% (CI = 0.13) with 95% confidence view the Royal Castle as the main tourist attraction of Checiny. Since the CI range is over 50% it is likely this result represents the total population proportion. The Royal Castle as the main attraction is also supported by the abovementioned excerpts from the interviews, and visitor data (see figure 3.2 or Appendix 4). Particularly interesting are also the results from the mental maps' categories (Giesecking, 2013), that are as follows:

1. 'Landmarks' - What are the elements the maps have in common?
2. 'Orientation' - Compass direction? Standard N/E
3. 'Text Labelling' - The way the participants wrote labels. Capital, lowercase or a mix. Can Indicate priority or scale.

We identified the Royal Castle in all three categories (see Appendix 5 for Mental Mapping results), supporting the above-mentioned findings. Thus the castle can be viewed as an obstacle for other tourist sites in terms of receiving the funding, which directly affects their opportunities for development.

Economic Impact Perception

The Matrix Coding Query showed 23 results regarding local residents' economic impact perception, 21 of which are positive, while 2 other responses are coded under 'Negative' and 'Neutral' child-codes.

Among the positive responses we found a common pattern of focusing on the employment opportunities and local business performance, such as: *“creates jobs”*; *“more tourists do shopping in stores”*; *“in my view, tourism has a good impact, because the more tourists there are, the more profits there will be for enterprises such as: souvenir shops, grocery stores”*; *“it*

has an impact on the development of economy, people are able to find jobs, in the region there's more and more tourist sites".

The negative response mentioned the *"high increase of prices in the region where tourist attractions are"*, while the neutral response said *"I don't know"*.

Overall, the answers of the majority of local residents show that they perceive tourism as a tool for economic development.

Environmental Dimension

Environmental sustainability is one of the major problems that humankind faces today (Arora, 2018). The increasing number of tourism activities has resulted in several negative environmental impacts, such as pollution, pressure on natural resources, as well as physical impacts (Asha, 2013). Some forms of tourism, such as ecotourism, can contribute to protection of biodiversity and ecosystem functions (Richardson, 2021). To understand the effects of tourism on the environment in Checiny, we have divided our results into three main categories, which are sustainable practices, environmentally responsible behaviour, and the environmental impact perception.

Sustainable Practices

Environmentally friendly practices, so-called green or sustainable practices, are the activities that use more efficient resources and limit their influence on the environment (Langgat et al., 2023). They are employed to make establishments more responsible for the environment and communities, reducing firm's negative aspects (Bhatti & Sulaiman, 2022).

According to our data, three tourist sites (the Royal Castle, Jaskina Ray cave and Museum Chamber of Ore Mining in Miedzianka) are selling tickets online instead of printing them.

In 5 interviews, the words "trash", "recycling", and "bins" were mentioned. The manager of the Leonardo Da Vinci Science Center noted: *"Once we got fundings for ecological projects, like trash segregation."*

However, there is also mistrust regarding the recycling process. The manager of the Ore Mining Museum noted that: *"... it [trash] is always dumped into the same big container either way. So there's no point in doing this at all."*

For three tourist sites, the European Centre for Geological Education, Jaskinia Raj Cave, and the Culture and Sports Center, solar panels are used for electricity. Concerning electricity, the manager of the Leonardo Da Vinci Science Center mentioned that *"... there will be an event about electricity. So we want to turn all the lights off at the centre and to observe the changes."* Additionally, the TIHC of Checiny Commune manager told us that: *"We stopped burning coal and now we use gas for heating."* The ECGE manager states that the centre is *"very eco-friendly because we use the underground heating pump. We have only 1 chimney for the generator, but it's an emergency generator so it's not used every day and we use the solar panels as well for heating the water."*

Three touristic site managers mentioned law restrictions in the area regarding the environment. The Ethnographic Park in Tokarnia manager spoke briefly about the usage of drones and that if anyone wants to use it *“they need a special permit... as it’s protected.”* The manager of the ECGE told us that the building has *“a green roof and some plants that are protected by law”*, so they keep them. The manager of the Jaskina Ray cave mentioned: *“This is a nature reserve with very strict regulations: roads, people, light usage in the cave, no pictures or cameras... a lot of regulations. It probably impacts the environment. Also, we’re obliged to constantly monitor the carbon dioxide levels, the humidity, if anything is going on there.”*

Three site managers mentioned that they clean the site *“after parties and events”* (the Ethnographic Park in Tokarnia), *“we sweep before the season, collect pinecones, and mushrooms during autumn, as well as clean the beach from rubbish, but nothing major”* (Aquatica Park Bolmin), *“Once a year or something, we do our initiatives like cleaning the forest and we go to the top of the mountain to collect trash. But this is the idea of the museum, nothing mandated”* (Ore Mining Museum).

The Bolmin Reservoir - Camping “Cameleon” manager answered to our question on incorporating sustainable practices by stating that: *“It’s absurd. The funding for green energy, to be more ecological, is only for private people, and I’m an enterprise, like a registered enterprise. And enterprises don’t get funds, even if it’s for ecological reasons. I’m trying, but it’s really hard.”* This shows that even though there is an eagerness to become more sustainable, they first need to fulfil the criterias to be eligible to meet the application requirements.

Last but not least, the manager of the Culture and Sports Center added some information about the practices incorporated in the town:

“Each year I know that the commune of Chęciny buys trees and something to be bee-friendly. We know that bees are life for every one of us. When it comes to lighting of the town, the renovated street lamps are LED, that is more energy-saving. We have a lot of bicycle paths. We do that, so our people, instead of cars, will be choosing bikes. The bicycle paths are friendly for our tourists. And in this place [the center] we rent bicycles. And it’s also eco-friendly.”

Whether it is a private initiative or mandated by law, we observed that most of the tourist sites incorporate at least one type of sustainable practices. The most mentioned practice is waste-management.

Environmentally Responsible Behaviour

ERB reflects a person’s commitment to ecology, their knowledge and concerns about it (Liu et al., 2022). It incorporates leaving local flora and fauna undamaged, preserving materials and energy, recycling, avoiding pollution, and other environmentally responsible activities (Wu et al., 2022).

When it comes to pollution in the area, one of the most mentioned answers is littering. The ECGE manager told us: *“Unfortunately, people leave lots of garbage everywhere, so it’s the uttermost problem.”* The manager of Jaskinia Ray mentioned that *“overall, there are more tourists but here you cannot really harm much because we have visitor limitations. Maybe there’s an impact, more trash.”* Also, the manager of Ethnographic Park in Tokarnia stated *“They [tourists] litter.”*

However, not everyone sees littering as a serious issue. For instance, the representative of the Kielce Forest District told us that *“there is trash, but it is not a big problem since the State Forest cleans it up.”* The Culture and Sports Center manager supports this statement by saying that *“I think there is no harm to the environment, because our tourists are clever people and they take care of the rubbish. And we have people from an association that cleans places like that. And I don’t think that the tourists have had an impact on our community in this way.”*

One problem that was mentioned by 2 managers and a key informant concerns motorbikes. The manager of the Bolmin Reservoir - Camping “Cameleon” mentioned that even though there are motorbike riders, he thinks that *“that’s just natural. I can’t do anything about it. I didn’t notice any impact on the natural environment or overall.”* The ECGE manager mentioned that in case there are some motorbikes around, they *“call the police to stop them”*. While the Forester mentioned that *“the huge problem is motorcycles, like wild races through forest, since it’s not regulated legally at all. These wild races have a negative impact on the area.”*

One of the issues is setting fire in natural reserves. ECGE manager stated that *“it’s forbidden to set fire here. But lots of people came here and set the fire on the fireplace. This place is still a reserve, so they’re forbidden to set any kind of fire, but they do it. And what we need to do is then call the police.”*

To enhance environmentally responsible behaviour of tourists, it is also very important to continually develop the quality of destination (Liu et al., 2022). During our stay in Checiny, we have not observed bins for waste separation, all the bins were for mixed waste. Even though there are several issues mentioned, such as littering, yet tourists are not perceived as a threat to the environment.

Environmental Impact Perception

The empirical research has largely shed light on the people’s perception and attitudes towards tourism and its economic and socio-cultural impacts, leaving out their perception on environmental impacts (Nyaupane & Thapa, 2006). Over the course of past decades, tourism contributed to CO₂ emissions (transportation), energy consumption (amusement parks, shopping centres, etc), while at the same time served as an agent of the conservation of environment and adoption of eco-friendly technologies and means of transportation (Deb et al., 2023).

Out of 37 survey answers to the question if there are any environmental issues in the town, 16 businesses answered ‘no’, 11 answered ‘yes’, while 10 chose the answer ‘no observation’ (see figure 6 below). In this connection, Nyaupane & Thapa (2006) mention that negative impacts on the environment can be ignored when there is economic gain, that comes from tourism and its potential to uplift locals’ economic conditions.

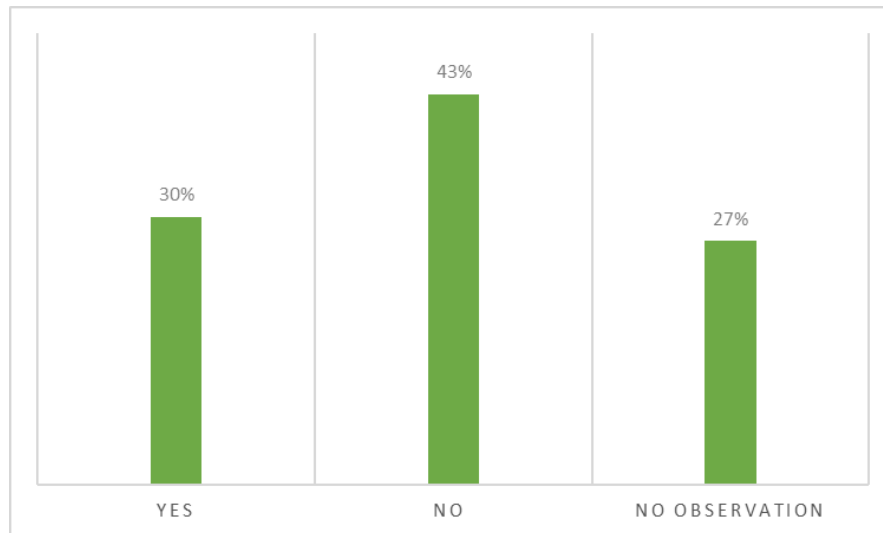


Figure 6. Perception of businesses on if there are environmental issues on Checiny.

When it comes to perceptions of tourist site managers on the impact of tourists on the environment there are mixed answers. For instance, the manager of the Leonardo Da Vinci Science Center mentioned that *“mostly people’s mentality is good; they pay more attention to local fauna and flora, specifically to their protection.”* While the manager of the TIHC spoke about overcrowdedness during the tourist season. We also observed this during the first weekend of March, when the weather was warm and sunny, and there was an international dance competition, taking place in the Sports and Culture Center of Checiny.

Our focus group H-form results suggest 21 negative, 5 mixed, 3 positive and 0 neutral responses regarding tourism’s impact on the environment. The most mentioned negative aspect is related to pollution. We have received responses, such as *“in my view, tourism impacts the environment in a negative way, because tourists pollute water sources, which makes the state of the environment worse”*, *“it pollutes the natural environment”*, *“tourists pollute the air a lot”*, *“destruction of sites, pollution of the forest, setting fire for bonfires in places that don’t allow it”*, *“tourists pollute the environment by creating more trash, different rubbish, they destroy the sites”*.

The positive answers contain answers, such as *“it disciplines tourists to take care of cleanliness, it forces manners, doesn’t leave the tourists a chance to waste”*; *“raising awareness of conservation issues”*; *“it impacts in a positive way, you can get to know new interesting places”*.

While under the mixed answers we coded the ones that contain both positive and negative aspects. Examples are as follows: *“advantages:creation of nature parks, disadvantages:air*

pollution”; “there are advantages like natural parks and protection of animals, but there are also disadvantages like air pollution”; “you can admire nature for sure, but some tourists destroy it instead”; “tourists can destroy or litter the environment, but some are ok”.

In general, there is a noticeable difference between the responses of the key informants, survey respondents and the managers, who mostly do not think there is or do not observe any environmental impact, while the local perception is more critical about it. This contradicts the Nyaupane & Thapa (2006) study, where they conclude that managers are usually more aware of the environmental negative impacts than locals, because the latter might have inadequate environmental knowledge.

Social Dimension

One way for researchers to acquire information about the impact of tourism is through studying local residents’ perceptions, thoughts, and feelings (Alamineh et al., 2023). Local residents’ attitudes towards tourism can vary, with some viewing it positively due to the benefits it brings to leisure facilities and recreational opportunities, while others have a negative view, seeing it as potentially leading to overcrowding and displacing residents from recreational areas (Almeida García et al., 2015).

Regarding this dimension, we focus on destination accessibility, local employment, local entrepreneurship, and social impact perception.

Destination Accessibility

The concept of destination accessibility reflects on how accessible a certain destination is while taking into account the amenities and infrastructure as well as time and effort to reach the destination (Yen et al., 2021).

Through our visits we gathered information about the tourist destinations accessibilities, while the interviews shed light on the opinions of managers on the topic. It turned out that there is no bus that directly goes to the Cameleon Bolmin Lagoon. As the manager said: *“No. There’s one bus that just passes through Chęciny. It’s a shame because people could come and walk around here”*. The manager of the ECGE mentioned a similar concern: *“...But I think there should be at least a bus stop near the castle because it’s missing here...”*

The manager of the Center for Jewish Remembrance and Culture mentioned that for now since there is good space for parking, the site is still accessible. He added: *“So, it is much easier for tourists to visit Checiny generally, because now we have parking areas”*.

Although sites in the town were within walkable distance, the ones in the commune were not easy to reach without having a car, since there was no other convenient public transportation available. Suthanaya and Suwarningsih (2023) note that in order to achieve sustainable transportation goals, such as reducing energy consumption and CO2 emissions, the development of public transport should be a priority.

The Culture and Sports Center manager mentioned that *“we have a lot of bicycle paths that we constructed so our people, instead of cars, will be choosing bikes and it's also eco-friendly too.”* Despite this statement, during two weeks of our field trip we noticed very few bike-riders. However, this can also be connected with seasonality, since it was mentioned by all the stakeholders and supported by secondary data (Cierpień-Wolana, 2023) that September to April is a low tourist season. In addition, most of the days the weather conditions, in particular fogginess, rainfalls, were not suitable for biking.

Local Employment

Employment opportunities in tourism-related industries can help to maintain economic growth and prevent its decline (Južnik Rotar et al., 2023). As Dogru and Bulut (2018, cited in Južnik Rotar et al., 2023) mention, the tourism industries were one of the sectors that have achieved a positive average annual growth rate of employment since the economic crisis in 2008. When it comes to local communities, creating tourism service skills and developing tourism prospects in the area, the local employment encourages the communities (Rizka Rachim, 2022).

Robert Jakowski, the mayor, mentioned that the unemployment rate in Checiny town is low, only 4%. According to the latest data on the website of Checiny town and commune (*W Gminie Chęciny Maleje Liczba Bezrobotnych*, 2023), in 2022 about 218 residents out of 4304 were unemployed, which is 5%.

Our research indicates that the tourist sites and businesses predominantly employed local individuals. The number of employees varied from 1 to 20. The manager of the Bolmin Reservoir - Camping “Cameleon” stated that the number is dependent on seasonality: *“There’s a summer bar there and a pizzeria, so during the summer we need up to 20 people to manage everything. Right now [March], there are two employees”*.

According to the interview with the ECGE manager, the site predominantly cooperates with three Checiny-based restaurants, where mostly locals are employed.

At Jewish Culture Remembrance Centre, five people are permanently employed. However, as the manager noted: *“During the Jewish cultural festival in Checiny lots of people, especially the youth, are participating in it as volunteers”*.

Leonardo Da Vinci Research Center witnessed an increasing number of employees, as the manager said: *“We started from around 6-7 employees, and now we have 11-12 employees. But during summer time, we sometimes have nearly 2-3 people who help us here at the centre”*.

At Ethnographic Park in Tokarnia, only locals work there, as the manager noted: *“Everyone lives up to like 20 or 30 kilometres from here. It’s very local”*. The representative of the Kielce Forest District said that *“the people who are doing manual labour and maintenance of the forest are from the local community”*.

The survey also indicates that most businesses employed local people (*see figure 7 below*).

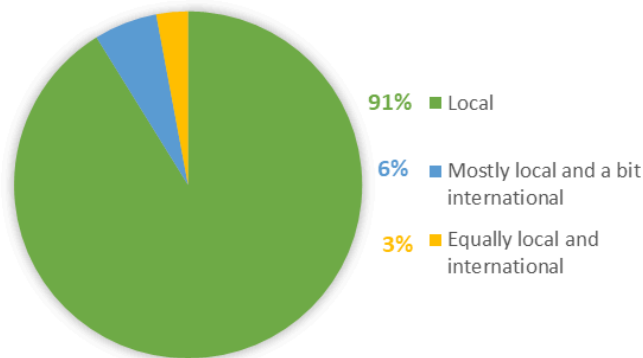


Figure 7: Employment data for businesses according to our survey. With the answer of 91% and looking at a confidence of 95% we have a $CI=0.16$. This indicates we can be confident that the population proportion of business answers lies within the range 74%-100% locally employed.

Bello et al. (2018, cited in Rizka Rachim, 2022) noted that community involvement is significant for sustainable community development. Overall, from the answers of interviewers and surveys, it is clear that the locals make up the biggest number of the workforce at the abovementioned tourist sites and businesses.

Local Entrepreneurship

Local products are significant for the tourism market and its potential (Salih Ikiz, 2021). According to Gonda et al. (2021), these products are local specialties that are made with native or locally produced materials by a small-scale enterprise, processed by procedure that is characteristic for the region, and utilised collective traditional knowledge.

During the interviews, we asked managers and key respondents about the local products at their tourist sites. Most of the answers mentioned that locals contribute to all the tourist sites by creating tourist souvenirs or producing local dishes and drinks.

For instance at the Bolmin Reservoir - Camping “Cameleon” locals produce beer and vodka, while at the Jewish Remembrance and Culture Center souvenirs (cups and plates) are produced by local craftsmen.

For Tokarnia and the Mining Museum, all the souvenirs they see are locally produced by local craftsmen. Both sites’ managers, respectively, noted: *“Magnets are locally made, and the postcards are also local”*. *“It’s all their designs, e.g. the bags, and the magnets are all their idea, and they just commissioned this. So, people make this for them. The jewellery also is commissioned. Everything is either their idea or made by them”*.

The manager at the ECGE noted: *“most of the time we order special companies to create them for us. There is no strict rule for us where we should order these things from. But sometimes*

people who are specialised in crafts create them for us. Like Leonardo bridges, that we sell”.

At Paradise Cave and Leonardo Da Vinci Research Center, souvenirs and products that they sell are produced by locals, as well as ordered from different shops, as they would like to meet visitors' preferences. The manager at Paradise Cave said: *“We have many things in our shop, but it depends on the season. When we have children's groups, we prefer Chinese products. But when there are adults, we prefer different things like magnets, a popular souvenir”.*

Purchase of local goods contributes to the local economy (Gonda et al., 2021). The majority of the tourist sites include locally produced goods for sale. This way local people directly can derive economic benefits from tourism in the area. However, the scope of this study did not allow us to gather full information on the production process of these goods.

Social Impact Perception

Tourism, after revitalization in 2014, impacted different aspects of community life. According to our interview with the manager of ECGE, this tourist site is a place that “helps people to have a place where they can spend some free time and unwind.” The TIHC manager said: “The reconstruction of the main castle has a positive influence on everyone here, as they are able to attract more tourists and gain more income”.

From 25 H-form responses from high school, 22 viewed the impact of tourism on the community as generally positive, while only 3 of them saw it as negative. The responses are the following:

Positive responses: “tourism impacts the community in a positive way, because our countrymen can learn new languages and get to know the culture of other countries”; “increases number of stores in the area”; “thanks to tourism, local community can find jobs”; “people meet each other and learn tolerance, they can both teach and learn about each other and i think it's interesting.”

Negative responses: “danger for health (bringing disease)”; “decline of religiosity”; “crowded town.” One of the unexpected responses for us was “decline of religiosity”, which we found to be present in tourism-related academic literature. For instance, the English Tourist Board conducted a study on tourism and English cathedrals, which focused on the problems caused by tourists, for instance traffic, litter, and disturbance of religious services (Alamineh et al., 2023).

According to Almeida García et al. (2015) most studies show that residents usually have a positive attitude on the tourism in the area. This corresponds to our findings, where the majority of our respondents saw tourism as being beneficial for the local people in several aspects such as improvements to infrastructure, employment and local entrepreneurship opportunities that are discussed in details above.

Reflections

One of the challenges we faced while writing was the difficulty to identify and choose the aspects of three dimensions of sustainability that were applicable for tourism-related research. For instance, for the environmental dimension we have chosen the aspects that we have not encountered in academic literature as a part of this dimension. Thus, based the choice of the aspects on both the general tourism- and sustainability-related literature review and our findings. We hope that the aspects we used will be beneficial for future research in this field.

When it comes to the time frame we did not have a chance to gather data on the tourists visitation before 2014, as many sites simply did not keep the record of it. Also, the connection between the revitalization and visitation data was confirmed by managers but there could be other factors influencing it. For instance, COVID-19 was one of the major events that have influenced the data.

Although we had translators, the language barrier was still one of the major challenges for our research. It prolonged the length of the interviews and transcriptions, created confusion about who the interviewer was, and made it difficult to follow-up.

Conclusion

The study aimed to assess how tourism has affected the development of the sustainable community in Checiny over the last decade by examining its impact on three dimensions of sustainability, namely economic, social, and environmental.

In terms of the economic aspect, research discovered that most businesses surveyed are not reliant on tourism, with only a third of them profiting from the increasing tourist numbers. Additionally, the funding for tourism sites revealed that while some receive financial support, the Royal Castle receives the majority, overshadowing other tourist attractions. The economic impact perception of local residents shows that they consider tourism as an economic development tool.

The study's environmental viewpoint reveals that the majority of tourist destinations implement some form of sustainable practices, with waste management being the most commonly cited practice. While most site managers do not perceive any problems with environmentally responsible behaviour, local residents are critical of the effects of tourism on the environment and have raised several concerns.

Finally, the social aspect examined destination accessibility, local employment, and entrepreneurship. It was noted that there is insufficient public transportation and environmentally-friendly transportation options, with an increase in the use of private cars due to the growing number of parking spaces. It was also observed that the majority of people working in the tourism industry are locals, and many tourist sites offer locally made products for purchase. This allows residents to directly benefit economically from tourism in the area. The social impact perception showed that the majority of our respondents saw tourism as being beneficial for the local people in several ways.

In conclusion, sustainable community development is not an easy process, because it requires a significant emphasis on all three dimensions of sustainability. Overall, we can say that the impact of tourism is observable especially on local employment and entrepreneurship, however, the general shift to sustainable practices is very limited.

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Appendixes

Appendix 1 - Interview questions for touristic site managers and key informants

Visitation:

1. Has there been an observable change in the number of tourists since the revitalization of market square 2014?
2. Does the visitation of tourists vary according to seasonal changes? Which season has the most influx of tourists?
3. Are there any events that you organise to attract tourists? If yes, what are they?
4. Do you incorporate locally produced goods in the site?
5. Are more tourists international or domestic?

Tourist Site Funding:

1. Do you receive any funding for the site?
2. If yes, where does the funding come from?
3. What is the funding used for?
4. Is it enough?
5. Have there been major restoration projects over the past 10 years? Why?
6. Has there been change in financing over the last 10 years?
7. If there are multiple financing sources, which one provides the most substantial support?

Environment:

1. Does the tourist site incorporate sustainable practices? If yes, which practises?
2. Have you noticed any environmental changes because of tourist activities?

Appendix 2 - Code book

Name	Description	Files	References
Attitude		2	87
Mixed		1	6
Negative		2	25
Neutral		1	1
Positive		2	52
Community		8	43
FG - Impact on community		2	32
Impact of tourism on community		4	8
Economy		13	74
Employee data		7	10
FG - Economical impact		2	23
Funding	Funding types, usage, challenges	13	34
Local products		7	7
Environment		11	51
Environmental impact		10	12
FG - environmental impact		2	26
Sustainable Practices		8	11
Major events since 2014		5	5
COVID-19		3	3
Revitalization Initiative		2	3
Tourism		10	54
Collaboration		6	7
Cultural Representation		4	6

Languages	Availability of other than Polish languages in touristic sites, such as tour guides, information, etc.	5	7
Marketing		6	10
Restoration of touristic sites		7	12
Revitalization impact on tourism		5	5
Touristic season		9	11
Visitor Data		10	15

Appendix 3 - Survey questions

- 1) Have you observed any changes in the number of tourists visiting Checiny town and commune in the past 10 years?
 - a) Substantial decrease
 - b) Decrease
 - c) No increase
 - d) Increase
 - e) Substantial increase
- 2) Have you observed any variations in income or profit levels before and after the change in tourist numbers?
 - a) Yes
 - b) No
- 3) During which season do you notice the most customers? (can choose multiple answers)
 - a) Fall
 - b) Winter
 - c) Spring
 - d) Summer
 - e) Same all seasons
- 4) Who are your primary customers?
 - a) Tourists
 - b) Locals
 - c) Other businesses
 - d) Other _____
- 5) What factors have influenced the choice of place for your business?
 - a) Operating and other costs (rent, transportation, water bills, etc.)
 - b) Proximity to target consumers
 - c) Safety of the area
 - d) Closeness to the touristic site
 - e) Other _____
- 6) In your experience, what are the main challenges faced by your business in relation to tourism in Checiny?
 - a) Operating and other costs (rent, transportation, water bills, etc.)
 - b) Competition
 - c) Branding and marketing issues
 - d) Lack of tourists
 - e) Location
 - f) Seasonality
 - g) Lack of workforce
 - h) Other _____
- 7) In your opinion, has tourism in the area generally been a positive or negative influence on the growth of businesses nearby?

- a) Positive
 - b) Negative
 - c) No effect
 - d) Don't know
- 8) What is the most important tourist attraction in Checiny? (map with touristic sites or as a list with the option to put new attractions on the map)
- 9) Do you think there are environmental issues in Checiny town and commune?
- a) Yes
 - b) No
 - c) No observation
- 10) If yes, what do you think are the main factors of these issues?
- a) Tourists
 - b) Mining sites
 - c) Governance
 - d) Farming
 - e) Other_____

Appendix 4 - Visitation data from five tourist sites.

Table 4. The combination of visitor data from four sites.

Year	Niemczówka	Tokarina	Royal Castle	Paradise Cave	Total
2015	23047	91354	164227	94652	373280
2016	18423	98867	203753	102213	423256
2017	17612	105000	188661	102283	413556
2018	13054	88759	207837	99146	408796
2019	23798	92660	223010	101352	440820
2020	12330	53332	130986		196648
2021	9710	88040	204150		301900
2022	9278	94056	243351	105729	452414
2023	14334	110940	225415	106612	457301
Total	141586	823008	1791390	711987	3467971

Table 5. The visitor data from Niemczowka tenement.

Years	Tourist number	<p>The line chart illustrates the yearly visitor data for the tourist information centre spanning from 2015 to 2023. Analysis of the data reveals a slight decrease in visitor numbers from approximately 23,000 tourists in 2015 to 13,000 in 2018. However, there was a notable peak in 2019, with 23,798 visitors recorded. Subsequently, the visitor count continued to decline until 2022, reaching a low of 9,278 tourists. In 2023, there was a modest increase in visitor numbers, with 14,334 tourists recorded. Although this represents the highest number of visitors in the past four years, it remains lower than the visitor counts in 2015, 2016, 2017, and 2019</p>
2015	23047	
2016	18423	
2017	17612	
2018	13054	
2019	23798	
2020	12330	
2021	9710	
2022	9278	
2023	14334	



Figure 8. The visitor data from Niemczowka tenement.

Table 6. The visitor data from Ethnographic Park in Tokarnia.

Years	Tourist number	The bar chart and line chart present the tourist visitation data for Tokarnia spanning from 2015 to 2023. The analysis reveals a stark fluctuation in visitor numbers, with the lowest recorded rate occurring in 2020, with only 53,332 tourists, attributed to the impact of the Covid-19 pandemic. Conversely, the highest peak in visitor numbers was observed in 2023, surpassing 110,000 visitors. The data underscores the significant influence of external factors, such as the Covid-19 pandemic, on tourist visitation trends.
2015	91354	
2016	98867	
2017	105000	
2018	88759	
2019	92660	
2020	53332	
2021	88040	
2022	94056	
2023	110940	

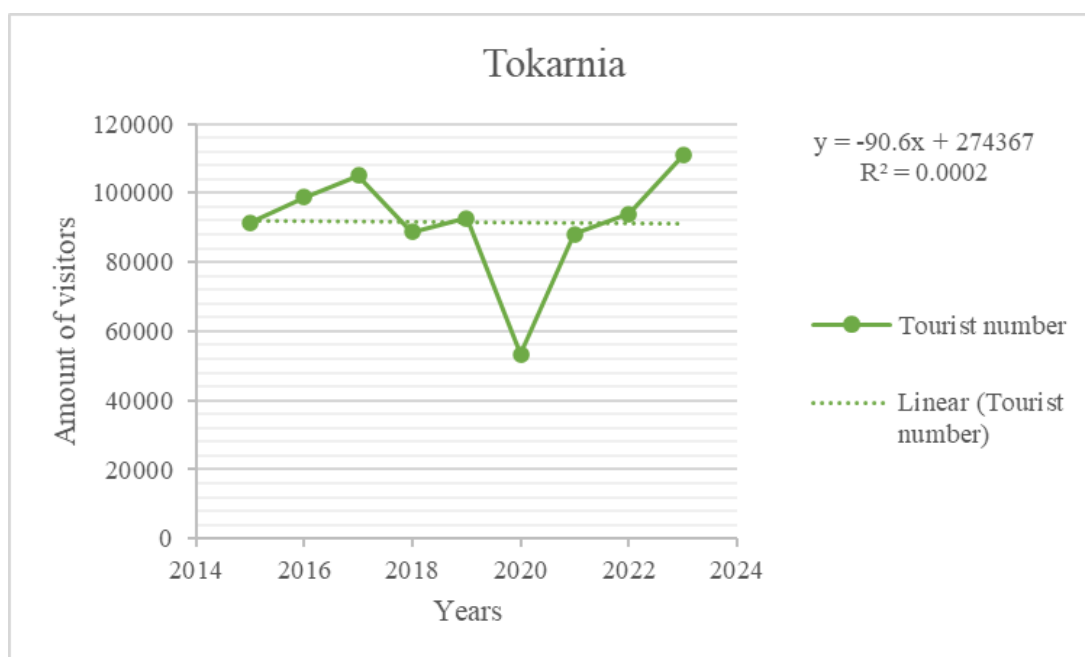


Figure 9: The visitor data from Ethnographic Park in Tokarnia.

Table 7. The visitor data for the Royal Castle.

Years	Tourist number.	The below line chart illustrates the number of visitors at the main castle from 2015-23 years. overall, visitor's number has increased from 164 227 to 225415 in 2023. 2021 has witnessed 204150 tourists, while the next year-2022 peaked the highest number of visitors- 243351.
2015	164227	
2016	203753	
2017	188661	
2018	207837	
2019	223010	
2020	130986	
2021	204150	
2022	243351	
2023	225415	

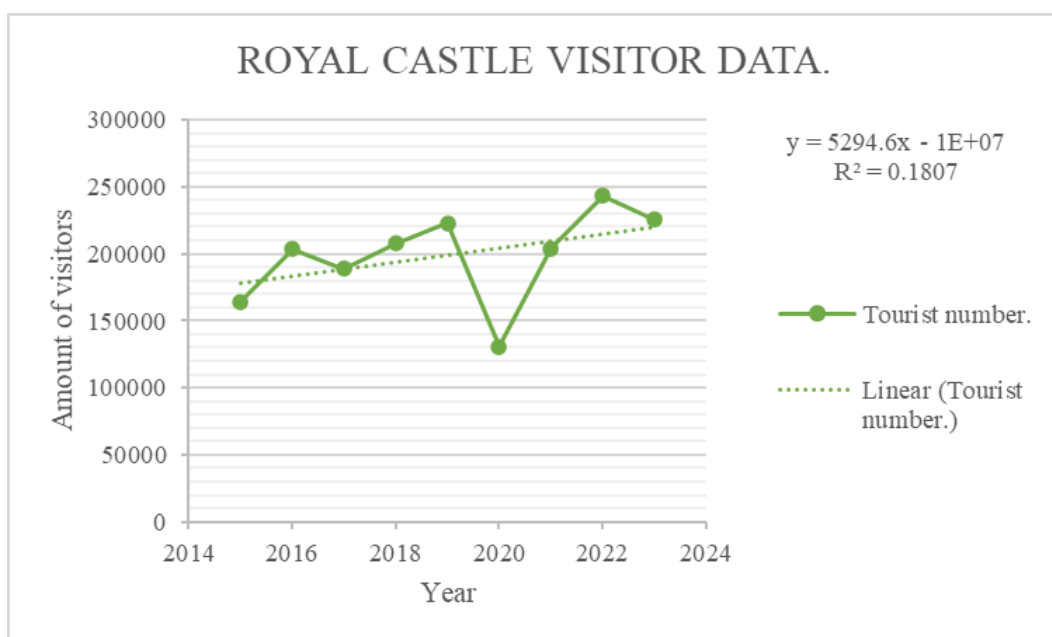


Figure 10: The visitor data from the Royal castle.

Table 8. Showing the ECGE visitor data.

Month/Year	Tourist number	Month/Year	Tourist number
Jan-22	39	Jan-23	223
Feb-22	210	Feb-23	214
Mar-22	205	Mar-23	404
Apr-22	459	Apr-23	501
May-22	737	May-23	839
Jun-22	654	Jun-23	716
Jul-22	286	Jul-23	190
Aug-22	167	Aug-23	235
Sep-22	708	Sep-23	563
Oct-22	720	Oct-23	822
Nov-22	547	Nov-23	392
Dec-22	271	Dec-23	500

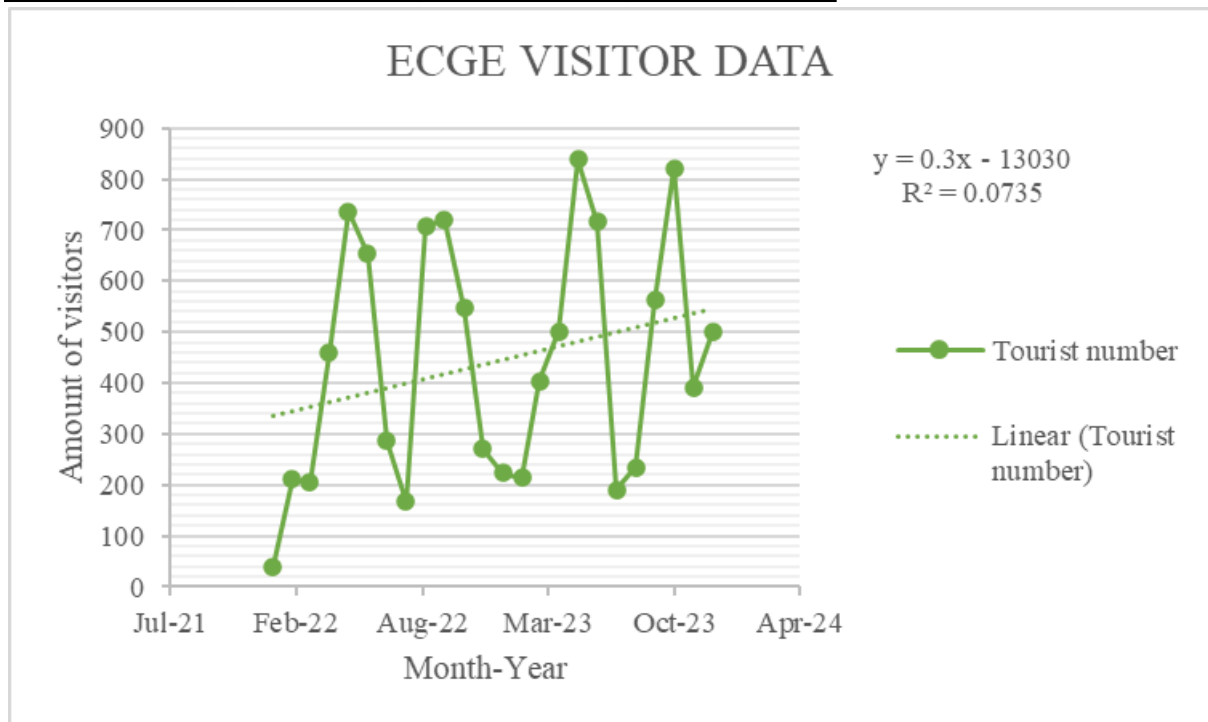


Figure 11: The visitor data from the ECGE.

Table 9. The visitor data from the Paradise Cave also known as “Jaskinia Raj”.

Years	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Sum.
2014	739	304 9	2758	504 8	1827 0	1760 2	138 88	1397 9	830 2	823 2	3072	0	94939
2015	1255	198 8	2414	655 0	1661 7	1499 6	142 18	1418 9	956 6	976 3	3096	0	94652
2016	1113	464 9	2981	854 1	1655 7	1577 6	150 71	1431 5	102 29	104 94	2487	0	102213
2017	1186	332 0	3081	769 8	1726 3	1695 8	146 73	1534 9	104 78	961 8	2659	0	102283
2018	2102	269 4	2382	847 5	1728 8	1506 3	141 65	1460 5	104 90	913 6	2746	0	99146
2019	1277	387 6	4425	714 7	1756 7	1534 6	142 97	1503 9	941 3	977 6	3189	0	101352
2022	1430	583 0	2998	618 4	1585 6	1585 4	150 45	1447 7	108 80	125 68	4607	0	105729
2023	2822	537 0	4143	794 6	1634 0	1561 2	141 08	1467 1	1120 9	109 48	3443	0	106612

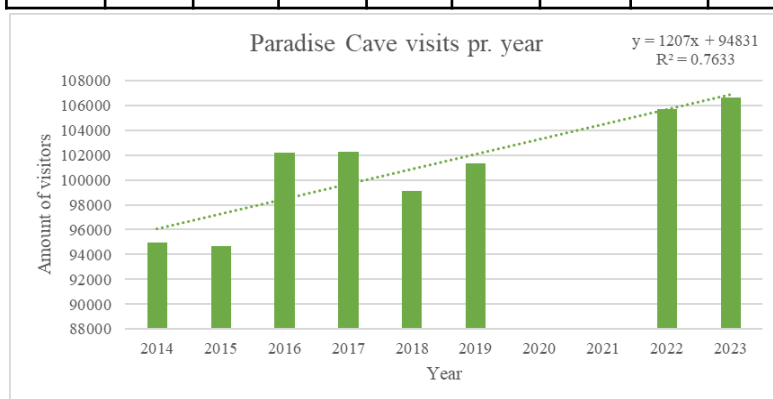


Figure 12. The bar chart “Paradise Cave” illustrates the monthly visitor count at Paradise Cave from 2015 to 2023, excluding the years 2020 and 2021. Notably, December consistently recorded zero visitors across all years. The peak visitation occurred in 2023, with a total of 106,612 tourists. Seasonally, the period from May to October emerged as the most visited months throughout each year. Specifically, May stood out as the month with the highest visitor turnout annually. Overall, there has been a noticeable upward trend in tourist visits since 2015, with numbers climbing from 94,939 visitors to over 106,000 in 2023.

Appendix 5 - Mental mapping results.

Analysis	Description	Map 1	Map 2	Map 3
First drawn element	First drawn element, can come from experience and create “associational dependence” to later drawn elements.	Center of town and a church. “CHECINY Rymek” and “Church”	Paradise Cave. “Jaskinia Raj”	Start point for the route. “START”
Last drawn element	Last element drawn on the map.	The Jewish Culture Remembrance Centre. “Synagoga”	Ethnographic Park in Tokarnia. “Kościół w Tokarni”	The end point of the route. “KONIEC” (eng. “end”)
Center of map	The centre is often where the most important things/element is drawn. (Giesecking, 2013)	Center of town and the Jewish Centre. “Rymek” and “Synagoga”	Center of town. (“Rymek Chęciny”)	A monastery (“KOŚCIÓŁ”)
Scale	How is the scale between elements?	Elements are mixed in scale.	Features have the same scale but are not comparable to real scale difference.	Elements are mixed in scale.
Colours	How are the colours used?	Blue for site number, black for mainly elements, green and red for details and the connections between elements.	Red for the connection between elements and blue for start and end. Mostly black for labels and small buildings.	Mostly black features with red labels end a three green trees with leaves.
Time limit	Meets the 20 min.	Yes	Yes	Yes

	time limit?			
Built environments	Human-made elements.	Yes, five human-made locations out of six.	Yes, three human-made locations out of five.	Yes, six out of seven locations with focus on human made elements.
Physical environment	“Natural” elements	Yes, one natural location.	Yes, two natural locations.	Yes, one nature focused location.
Landmarks	What are the elements the maps have in common?	Center of town and Royal Castle	Center of town and Royal Castle	Center of town and Royal Castle
Orientation	Compass direction? Standard N/E	SW	SW	SW
“What is included is out of the ordinary”	Anything on the map not in the area per se.	No	Hell Cave. “Jaskinia Piekto”	Skate park.
“What is omitted is out of the ordinary”	Anything that is not on the map but usually a part of the area's tourism?	Private funded tourist sites. Also the well located in the centre of town.	Private funded tourist sites.	Private funded tourist sites.
Text labelling: All capitals, uneven sizing	The way the participants wrote labels. Chapital, lowercase or a mix. Can Indicate priority or scale.	The sites Checiny town centre and Checiny’s Royal Castle were written with capital letters.	It is a mix between standard for labels and a full capital word for the start label of the route.	All site labels are in capital letters.