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Residents' Perception towards Tourism Development: The Relationship between Economic and Environmental Impacts during Disruptive Events



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ABSTRACT: This study explores how a crucial measure can contribute to tourism impact research on residents and understand the standpoints among different resident groups. A stakeholder perspective demonstrates how residents in the public and private tourism sectors consider economic and environmental impacts. It probes differences in perceptions towards tourism impacts between these two stakeholder groups. Data are gathered among residents working in Macao's private and public sectors. A semi-structured interview is used to collect data, with 14 interviews conducted. After the data analysis, significant differences are not found in residents' opinions of both groups regarding economic and environmental impacts. Furthermore, the findings do not indicate the perceptions of negative environmental impacts can be mitigated if the number of tourists declines. The study contributes to the literature by adding the importance of residents' perceptions of tourism impacts on the tourist destination and pursuing sustainable tourism planning and development. Findings are also relevant to Macao, using the traditional measures of residents' perceptions, which may help raise support among residents of tourist destinations for future tourism development. Then, it can further help improve the sustainable tourism management of tourist destinations.

KEYWORDS: Disruptive events; economic impact; environmental impact; residents' perception; sustainable development

Introduction

Tourism is one of the most popular industries that contributes to wealth and improves economic growth in the country (Bazaza, 2020). Tourism can lead to economic benefits, including increased tax incomes, job opportunities and sources of income for residents (Comerio & Strozzi, 2019). With the rapid development of tourism these past few years, an increase in the usage of tourism resources, natural or man-made, has caused negative environmental impacts on several tourist destinations and residents (Zhao & Li, 2018). Those tourist destinations have simultaneously and persistently experienced several positive economic and negative environmental impacts. Environmental issues such as air pollution, overcrowding and damage to ecosystems have negative consequences for the past few years,

which highly affect the residents' support towards tourism development (Mikayilov et al., 2019). Research on tourism impacts has largely garnered popularity in recent years. Thus, several studies over the last few years have investigated residents' perceptions of tourism impacts, namely economic, environmental and socio-cultural impacts. Such attention is primarily explained by the increasing tourism development worldwide, which positively affects society or community but negatively impacts residents (Nordin et al., 2020). Over the past decades, the flow of tourists and the significance of economic growth have been beneficial for many tourist destinations. An increase in tourists is good for economic growth; even the residents can benefit from the economic impact of tourism development, but the overgrowth of tourism may lead to adverse effects on the tourist destinations (Comerio & Strozzi, 2019); notably, such economic growth may damage the environment and the residents' quality of life in the tourist destinations.

With the pandemic, the economic conditions of different countries are in disarray, resulting in a decline in employment opportunities among immigrants and residents. According to Coibion et al. (2020), a massive decline in the employment rate and the number of tourists occurred during the COVID-19 pandemic (which refers to the pandemic period in the entire study). Therefore, as one of the sectors worldwide that provides employment, tourism has suffered along with the economy and its residents. In addition, changes in residents' perception of tourism impacts are most likely to happen during these pandemic periods and affect residents with the support of tourism development in tourist destinations. In this case, dissatisfied residents might negatively impact tourists' experiences, affecting their decision to return (Bello et al., 2018). Thus, investigating residents' perceptions of tourism impacts plays a critical role in lessening the negative impacts that could satisfy both residents and tourists' experiences. Economic growth is argued to happen owing to environmental degradation (Ehigiamusoe, 2020). Given that economic growth negatively affects environmental impacts, economic decline may enhance the positive environmental impact in tourist destinations during the pandemic period. Furthermore, involving residents' perceptions will affect how tourism development would succeed; understanding residents' perceptions will benefit the government and policymakers, particularly tourism's economic and environmental impacts. Most previous studies focus on destination recovery during the pandemic, which can be a transformative moment that will change tourism development concepts (Davies et al., 2020). The pandemic is the most disruptive event affecting tourism and tourist destinations in the 21st century. Disruptive events refer to a crisis or disaster constantly threatening tourism. As such, the pandemic period is a good time to understand how the residents will perceive the impacts of tourism in a tourist destination during disruptive events. Meanwhile, disruptive events frequently experience vastly lower tourist numbers, and the pandemic can be another good way to investigate the situation of reducing the number of tourists, particularly for some tourist destinations that encounter overcrowding issues. It can explain what may happen and influence when the number of tourists is reduced.

Thus, this study aims to narrow the gaps by examining the linkages between economic and environmental impacts. In reducing the number of tourists, the influence of economic and environmental impacts affecting a tourist destination is further investigated. This study investigates the residents' perspective in tourist destinations towards the co-existence of economic and environmental impacts of tourism to fill the gap in other studies relating to tourism impacts. This study focuses on the following research questions: (1) How have tourism's economic and environmental impacts affected residents' perception of tourism development? (2) What do residents perceive about tourism's simultaneous economic and

environmental impacts during disruptive events? (3) What strategies can help improve tourism impacts in the future sustainable tourism development? Determining the interaction between economic and environmental impacts is imperative for tourism planning and policies. This study can shed light on understanding the impacts of tourism during disruptive events. The contributions of this study will constitute an essential guide for tourism practitioners in tourist destinations for sustainable tourism development.

Tourism can drive economic growth but have negative impacts on a community. It is a powerful tool for many tourist destinations to boost their economy and time whilst supporting their people (Li et al., 2018). Various studies indicate that tourism development creates a positive perspective from the community given the belief that it creates additional job opportunities, increases local shops' revenue and promotes the country's culture and traditions (Garau-Vadell et al., 2018). However, similar to any other industry, without proper planning, tourism can negatively impact or damage different aspects of tourism, such as the economy and environment. It may be even worse during the disruptive events. Brandtner et al. (2021) mention that given the impact of the pandemic across different countries worldwide, different businesses were highly affected, which resulted in an abrupt decline in the economy and tourism. Nevertheless, tourism is still considered a tool for economic growth because it generates various positive impacts on a destination with or without disruptive events. In this case, understanding residents' perspectives towards economic impacts is a priority for many tourist destinations. Furthermore, given the resource-based nature of tourism development, many studies consider the crucial need to minimise the negative impacts on the natural environment (James et al., 2020). Meanwhile, sustainable tourism management policies should maximise economic benefits from tourist arrivals whilst minimising the associated negative environmental impacts (Nepal et al., 2019). Thus, the current study considers the investigation of economic and environmental impacts during disruptive events.

Economic Impacts on Tourism

Tourism is one of the most critical drivers of economic development (Tosun & Timothy, 2001). Tourism research has emphasised and analysed economic impacts (Kuvan & Akan, 2012). Previous research shows that tourism's economic impacts can be either positive or damaging to residents (Qin et al., 2021), positively impacting employment opportunities for residents. Thus, residents are shown to be more dependent on tourism as it raises their standard of living and income. Developing as a tourist destination has also positively impacted the residents, especially local retail shops and public facilities, given that this scenario helps enhance its residents' overall facilities and living standards. Despite its positive impacts on communities and tourist destinations, tourism development could still cause issues among different destinations, such as inflation in the economy, which causes substantial reduction in prices of products, services and accommodations (Shaari et al., 2018). Afthanorhan et al. (2017) mention that numerous residents do not favour the increasing tourism development because their incomes cannot be sustained with the increasing cost of living. Additionally, tourist destinations that rely primarily on tourism are susceptible to rapid economic decline (Ingram, 2020). Residents would lose tremendous revenue if a natural disaster or pandemic hits tourist destinations, resulting in an economic crisis from which some destinations may struggle to recover. According to Hertati et al. (2020), an economic crisis can affect the tourist destination's economy, businesses and residents. Furthermore, tourism leakage is also one of the economic impact factors worth considering (Kariyapol & Agarwal, 2020).

Therefore, without proper management in the tourism field, the development of tourism can lead to both positive and negative economic impacts.

Environmental Impacts on Tourism

The environment is a crucial element to consider when developing and building tourism infrastructure in tourist destinations. Environmental impacts on tourism can positively impact tourist destinations, such as preserving heritage sites; and negatively impact tourist destinations, such as air and noise pollution, overcrowding, improper disposal of solid waste and traffic (Sadeghian, 2019). It often focuses on natural resources. However, it is not limited to natural sources in tourist destinations; urban tourist destinations also have risks. It could attract additional tourists, potentially leading to over-tourism (Maldonado-Ore & Custodio, 2020). Furthermore, environmental impacts are noticeable nowadays as shown in other literature; negative environmental impacts from tourism only occur when the number of tourists exceeds the environment's resources or capacity for use (Goliath-Ludic & Yekela., 2020). Following the results of other studies, the urban areas seem to contribute further negative environmental impacts (Rosselló et al., 2020). In addition, tourist activities require consideration when planning for long-term tourism. Tourists' activities can substantially affect the environment and tourist destinations. Among those issues are the increasing population, which could lead to littering, illegal dumping, traffic congestion and noise pollution (Sadeghian, 2019). With these increasing negative environmental impacts from tourists, the quality of residents' daily lives is highly affected. Thus, as the number of tourists increases in tourist destinations, the environment is damaged, leading to negative environmental impacts. Another negative environmental impact may be generated when economic growth occurs during the increased number of tourists. The large number of tourists may be seen as the primary issue of negative environmental impacts.

Sustainable Tourism Development by Understanding Residents' Perceptions towards Tourism Impacts

Residents are a stakeholder in tourist destinations (Kamata, 2022). Despite the challenge of obtaining every resident's opinion to understand the opinions of multiple stakeholders in tourism planning, limited research identifies different stakeholders' views on tourism impacts. Individual stakeholders possess attitudes specific to their group (Hardy & Pearson, 2018). Residents can be treated as a homogeneous group (Lundberg, 2017) or grouped by demographic profile, such as age, gender and educational background. They can also be grouped by spatial factors and economic dependence on tourism factors (Keikhosrokiani et al., 2018). The group with economic dependence on tourism particularly refers to residents who work in the tourism industry. This group tends to indicate favourable support towards tourism development (Stylidis et al., 2014). Although the negative impacts of tourism could be enhanced during disruptive events (Rey-Carmona et al., 2023), they may still perceive the positive impacts in the tourist destinations and support tourism development. As stated in a previous study, tourism negatively and positively impacts destinations and residents (Lundberg, 2017). Numerous studies of residents' perspectives on tourism impacts have earlier been conducted in different tourist destinations (Alrwajfah et al., 2019). Understanding residents' perceptions of tourism development and its impacts on destinations is vital because it helps contribute to the destination's image and influence tourists' decision-making (Stylidis, 2020). Governments and destination management organisations (DMOs) need to consider improving residents' perceptions of tourism policies (Kamata, 2022).

Residents are essential stakeholders, and their quality of life should be considered in tourism planning and management. Meeting the needs of various stakeholders for sustainable tourism development, including tourist businesses, host communities and tourists, is essential (Liu, 2003). Given that tourism primarily comprises the private sector, the public sector is considered the gatekeeper of tourism development through planning control (Connell et al., 2009). It implies that the residents relating to private and public sectors are essential. Furthermore, Gursoy et al. (2010) suggest that understanding residents' perceptions is crucial for the success and sustainability of tourism development. Sustainable tourism development can generally have a substantial influence through the involvement of the local community. Despite various ways to achieve sustainable tourism development, investigating residents' attitudes is the foundation for achieving sustainable and successful tourism development (Duarte & Nyanjom, 2017). In this case, residents are critical stakeholders in achieving sustainable development in tourism (Eligh et al., 2002). Although residents are considered stakeholders in tourism development, they lack strategic significance for policymakers (Kuvan & Akan, 2012). However, residents' perceptions can provide valuable information for public policymakers and tourism practitioners (Kuvan & Akan, 2012). Thus, information on the residents' perception of impacts can be helpful towards future tourism development.

Methodology

The study focus primarily lies in understanding local stakeholders' perspectives on tourism impacts. Qualitative research is used to explore in-depth the complexity of the situation in the destination with stakeholders (Ritchie et al., 2014). It can provide valuable insights specific to the phenomenon under investigation, incorporating respondents' experiences that lead to further accurate data collection (Rahman, 2017). Furthermore, it enables the researchers to describe the respondents' experiences, which can either validate or refute the study's theoretical assumptions (Queiros et al., 2017). As such, qualitative research is considered appropriate because the study aims to identify residents' perspectives on economic and environmental tourism impacts. An in-depth interview is conducted to attain the current research objectives. In-depth interviews are unstructured and personal to obtain respondents' feelings and opinions regarding a particular research topic (Showkat & Parveen, 2017). Semi-structured interviews are a flexible qualitative data collection method without strict structured questions to follow (DeJonckheere & Vaughn, 2019). Therefore, this study uses a semi-structured interview with open-ended questions to identify Macao residents' perceptions and experiences of tourism's economic and environmental impacts. The interview questions' structure has the following two sections: (1) The first section aims to gather basic information. (2) The second section evaluates the respondents' perceptions and experiences towards the economic and environmental impacts of tourism in Macao. Furthermore, the questions used in this study are developed from the existing literature on residents' experiences regarding tourism's economic (Afthanorhan et al., 2017; Kariyapol & Agarwal, 2020) and environmental impacts (Sadeghian, 2019). The literature can help the researchers identify and develop specific questions that could answer and satisfy the research questions of this study.

Before the interviews are conducted, a pilot testing phase is conducted to test the selected data collection instrument further and discover gaps within the research procedure. The purposive sampling method is chosen during the interviews to provide appropriate and valuable information to fulfil the research objectives (Campbell et al., 2020). Therefore, in this current study, the selection of respondents follows purposeful sampling with two criteria. The

interviewee must be a resident of Macao and have a professional standing related to the tourism field. The selected sample members have a personal connection to the phenomenon being studied, appropriate and pertinent job experience in the tourism field and general research background knowledge. Within this framework, the respondents are selected from public and private tourism sectors, such as government departments, small and medium tourism businesses and hotels. Thereafter, the sample is expanded by asking the selected respondents to recommend additional participants they knew who could be willing to provide relevant information to the study. This method is known as snowball sampling (DeCarlo, 2018). All recommended participants who met the criteria and were willing to engage in the study were then asked to be interviewed.

The semi-structured face-to-face interviews were conducted in 2022. The purpose of the study and interview procedures had been explained before the interview began, including the respondents' rights to withdraw from the study at any time and the protection of their personal information. Each interview lasted at least 20 minutes long and was carried out in English. Although not all the participant's native language is English, their command of the language is good owing to their education and professional standing. The researchers can transcribe the interviews verbatim without translating them by conducting interviews in English. In addition, all interviews were recorded and agreed upon by all, except three respondents who had not agreed to be recorded. Thus, the notes were taken during these three interviews. Purposive sampling increases the diversity of the sample. Interviews were transcribed and reviewed simultaneously to ensure data saturation. When it reached 'saturation' after the 14 interviews, coding began. Finally, a total of 14 interviews were conducted.

Research Area

Macao is a self-governing territory on China's south coast located across the Pearl River Delta from Hong Kong. It is also known for its various casinos and luxurious shops. Tourism plays a vital role in the economic development of Macao. Revenue from the gaming sectors exceeded 29 billion U.S. dollars with approximately 39 million tourists in Macao (Macao Statistics and Census Service, 2020); additionally, it is one of the most densely populated regions in the world with 20,400 people per km² in 2019 (Liu et al., 2021); continuous growth in the number of tourist arrivals in Macao has affected residents' perceptions regarding sustainable tourism development. As such, the pandemic period (starting from 2020) has caused a heavy blow to Macao's economy. The number of tourists to Macao has decreased significantly, and Macao locals have also minimised their entertainment time, negatively impacting Macao's gaming and tourism sectors.

Data Analysis

The open, axial and selective data coding is drawn from Strauss and Corbin (1998) to facilitate the analysis. Accordingly, tourism stakeholder groups in the public and private sectors are included in the study. These stakeholder groups are able to evaluate Macao tourism development's potential, its progress and future directions. Table 1 summarises the demographic profile of the participants. However, Macao is a small tourist destination; thus, Table 1 excludes the affiliations/positions to ensure anonymity of the respondents; only public and private sectors are indicated. A total of eight female participants and six male participants participated in the interview. Among all 14 participants, nine are between the ages of 24 and 35, whilst five are between the ages of 35 and 55. All participants have been working in the

tourism sector for over three years, have experienced various impacts and have an understanding of tourism development in Macao. Nine respondents acquired a bachelor's degree, two obtained a doctoral research degree (PhD) and three acquired a postgraduate degree. Overall, all respondents are from Macao and have specific knowledge of the economic and environmental impacts of tourism.

Table 1: Demographic Profile of Respondents

Private Sector				
Code	Gender	Age Group	Educational Background	Length of Service
PR1	Female	24-35	Bachelor's Degree	5 years
PR2	Female	24-35	Bachelor's Degree	4 years
PR4	Female	24-35	Bachelor's Degree	5 years
PR6	Male	24-35	Bachelor's Degree	3 years
PR9	Male	36-55	Doctorate Degree (PhD)	10 years
PR10	Male	24-35	Bachelor's Degree	3 years
PR11	Male	24-35	Bachelor's Degree	7 years
PR14	Female	36-55	Postgraduate Degree	9 years
Public Sector				
PS3	Female	24-35	Bachelor's Degree	9 years
PS5	Female	36-55	Bachelor's Degree	7 years
PS7	Male	36-55	Postgraduate Degree	10 years
PS8	Male	36-55	Doctorate Degree (PhD)	4 years
PS12	Female	24-35	Postgraduate Degree	10 years
PS13	Female	24-35	Bachelor's Degree	6 years

Research Findings

Table 2: Local Residents' Perception towards Economic and Environmental Impacts

Major Theme	Sub-Themes
Economic Impact (Positive)	<ul style="list-style-type: none"> • Financial subsidy • Increased income
Economic Impact (Negative)	<ul style="list-style-type: none"> • Inflation • Lack of government support
Environmental Impact (Positive)	<ul style="list-style-type: none"> • Clean environment
Environmental Impact (Negative)	<ul style="list-style-type: none"> • Pollution • Overcrowding
Strategies for Mitigating the Negative	<ul style="list-style-type: none"> • Capacity building

Impacts

- Developing various types of tourism
- Proactive tourism planning

Residents' Perception towards Economic Impacts

The findings indicate various opinions regarding the economic impacts with positive and negative issues in Table 2. The respondents from the public and private sectors have varying perceptions of economic impacts. Most respondents assert that tourism development in Macao has positively impacted their lives in normal situations. Several respondents' income shows an increase despite Macao's ongoing recovery from the economic downturn during the pandemic period. Fewer tourists arriving during the pandemic negatively affect income and employment opportunities. In particular, employment opportunities decrease significantly in the private sector, whilst employment opportunities in the public sector remain the same. However, the respondents agree that tourism development keeps improving during the pandemic period, and Macao's economic conditions are slowly recovering. The extracts are as follows:

'The economy has boosted and enhanced the living standard in Macao. Our salaries have been increased but also the price of necessities' – PS12.

'Before COVID-19, I had a job, but during the pandemic, I lost my job. There are not a lot of jobs offered in the market to choose these days'. – PR14

'I am satisfied with Macao's current economy'.—PS5

The pandemic period has caused substantial economic disruption in Macao and worldwide. Most respondents negatively perceive the pandemic period and express their discontentment that the health crisis has caused businesses and quality of life to deteriorate. However, some respondents adopt a neutral position regarding the situation in Macao because they can obtain financial assistance from the Macao government. The extracts are as follows:

'COVID-19 has led to the deterioration of Macao's economy. I am not satisfied with the current economic condition in Macao. I hope Macao can gradually revive the economy after taking measures'. —PS7

'Compared with the economy in the U.S. or Europe, I think Macao's economy is satisfactory... In the U.S., a lot of people died because of COVID-19, and the products become fewer and fewer, but at present, all this does not happen in Macao. Our life is normal. Although our life is not so good'. —PS8

'Even though COVID-19 affected our lives, the Macao government provided many policies to residents, for example, the money...Macao government gave some money to support residents and businesses'. — PR11

Apart from job opportunities, the respondents also mention that tourism has helped build a good relationship with the family owing to the recreational services it offers to the market. Types of employment are different, and some new job opportunities are created during the pandemic. The extracts are as follows:

'There's places somewhere to go like shopping during the weekends where we can have some recreational times'. —PR1

'The gaming industry has created many job opportunities. Like before the people in the 2000s we will not think of, we can get a job as a Data Analyst'. —PR2

Many respondents negatively perceived the economic impact of tourism in Macao. The respondents mentioned that inflation is evident within tourist destinations, affecting their consumption behaviour and standard of living. It happened during the pandemic period, and the situation also appeared before it. The prices of goods in the market and housing are becoming more expensive or higher than their income. Inflation could be considered a temporary situation, but many residents remain largely affected by it. Residents in Macao can cope with inflation better than residents of other tourist destinations. Nevertheless, some respondents consider that the government can provide additional support for tourism development. The extracts are as follows:

'Even though we are experiencing an economic breakdown, the prices in the market...got higher than before'.—PS13

'What we want most is how we can attract more tourists...how we can defend this pandemic and not be affected [and] the tourism number not being affected by this pandemic'. —PR9

To sum up, most of the respondents negatively perceive the economic impacts during the pandemic period. Among the negative impacts found are inflation and the pandemic period. However, some expressed that the economic impacts of tourism have helped increase employment opportunities and income for the residents, regardless of the financial losses and adversities Macao has faced.

Residents' Perception towards Environmental Impacts

The majority of the respondents mostly express a negative attitude towards the environmental impacts of tourism in Macao. Congestion in Macao existed before the pandemic period but remains a recurring environmental issue, specifically the persistently ignored traffic congestion. Nonetheless, some respondents convey that Macao's congestion has significantly decreased due to less frequent tourist visits than before. The extracts are as follows:

'My concerns are sometimes very crowded industry and that if I go out, I just see the people and cannot go inside the shop...I need to wait for a long time to enter'.—PS3

'Frankly speaking, in previous years...when there are a huge number of tourists in Macao, there may be some traffic... But nowadays there are fewer tourists, which means it takes me the least time to take a bus from one place to another place'. —PS8

Many respondents mentioned that air, noise and light pollution are their primary concerns regarding the environmental impacts of tourism. As tourism is associated with various activities, it is likely to damage the environment and could lead to disturbing residents. The extracts are as follows:

'There are lighting issues....it disturbed me maybe it is just for me because I am living in an apartment...facing the Cotai casinos'. —PR10

Some respondents acknowledge that Macao's environment has become cleaner than before. They have also acknowledged the government's effort to maintain a clean environment for its residents and tourists. The extracts are as follows:

'I think Macao has become cleaner than before like the Macao public toilet. You will see the Macao government expand the public toilets everywhere, not just one or two...not only for the public toilet but also the roads'. — PS5

The explanations above demonstrate that residents perceive the environmental impacts of tourism with a more negative attitude than a positive one. In particular, all the respondents encounter the negative issues of environmental impact first in their minds. Pollution and congestion have also been clarified to be among residents' many concerns, disturbing them for years. For those respondents who live closer to the tourist attractions, this situation could have a further negative effect on their perception of tourism development.

Strategies for Mitigating the Negative Impacts

Although most of the respondents are satisfied with the tourism development in Macao during the pandemic period, they also express various opinions regarding mitigation strategies for negative impacts. The extracts are as follows:

'I think the development prospects of Macao's tourism industry will be better because the Macao government is taking different measures to attract more tourists'.—PR4

'I think it will be better when COVID is gone'.—PR6

'Macao, as a tourist destination, attracts people from the whole world, which means that I have more chances to communicate with people from different cultures'.—PS8

For mitigation strategies, many respondents suggested that the Macao government should introduce different types of tourism other than focusing mainly on the gaming industry. Alternatively, the Macao government can start by organising other tourism events internationally and nationally. Diversification in Macao, such as nature-based tourism and adventure tourism, is crucial. Generally, promoting eco-tourism may be helpful to prevent recurring negative environmental issues and lead to balancing the negative and positive impacts of tourism. The extracts are as follows:

'Macao should think more about, aside from the casino... they should develop other kinds of possibilities... like different kinds of tourism, adventure tourism or the natural tourism or some other historical ones...They should focus on that side so they can develop diversity'.—PR6

'I think the Macao government can put more effort into introducing eco-tourism in Macao and preserving Macao's historical buildings, culture and even food to sustain the industry's development'.— PR12

'We should try to hold more events in cultural heritage sites, and the food is exquisite and of good quality, which are the most important conditions for attracting tourists'.— PR4

Promoting proactive planning from the government is also crucial for mitigating the negative issues of tourism development. Given the current crisis the world is facing, proactive crisis management by the government is deemed the most effective method in combating future turbulent periods. The respondents further expressed that the government should pay extra attention to possible future problems such as COVID-19. They should not wait for sudden adversities to arise and then slowly respond. In short, the government should not imply

reactive responses but instead apply proactive crisis planning for the betterment of the community to grant them ample time to address other issues. The extracts are as follows:

'I suggest the decision makers... should promote more appropriate over planning, be proactive and develop contingency plans to deal with potential problems'. —PR14

In this case, capacity building is essential for tourism development. A critical need arises to attract various people to work in Macao. In particular, young people may be essential and should not be overlooked. They may be the future local leaders and can make invaluable contributions towards tourism development.

'Macao government should think of kind of encouragement policy to motivate the young guys, scholars, foreign expertise and talent that can move to migrate to Macao'.—PS9

To conclude, residents have suggested various strategies to address the impacts for better tourism development in Macao. Among those strategies were introducing different types of tourism, promoting eco-tourism, organising additional tourism events to attract other markets and promoting proactive government planning, which would lessen the time spent addressing future adversities within the destination whilst preventing further economic losses.

Discussions

This study attempts to investigate the residents' perceptions of tourism impacts and the effects of residents' perceptions towards tourism on supporting tourism development during disruptive events. Thus, when researchers attempt to understand the impacts of sustainable tourism development, they should also look at the big picture and include various situations in the tourist destinations.

Theoretical Implications

Regarding theoretical implications, residents' perceptions of each impact are classified into positive and negative perceptions as most similar research studies have found (Eyisi et al., 2023). Some respondents show a negative perception of economic impacts brought about by adversities such as the pandemic period, which is an ongoing problem worldwide. Their comments reflect the highest concerns regarding the negative economic impacts affecting their living standards. The findings align with the previous study; the residents can benefit from some employment opportunities (Gannon et al., 2021); despite the reduced number of tourist arrivals during the pandemic period, employment opportunities continue to exist. However, the latter may differ between regular and pandemic periods. Nevertheless, as stated in the previous study, tourism development can increase the availability of recreation and entertainment facilities (Látková & Vogt, 2012); the respondents also indicate with similar opinions that building a relationship with their family members and friends is good. It implies that tourism brings well-being to residents in the destinations despite the emergence of other negative impacts. The environmental impacts of tourism have also shown negative attitudes from the perspective of the residents. They are reported in the findings to have a direct impact on residents through congestion and pollution from traffic. Although the environment seems

cleaner than before during disruptive events, improving the infrastructure is needed. People will likely perceive a negative environmental impact associated with road and transportation infrastructure development (Kanwal et al., 2020). It implies that tourism brings negative environmental impacts even if the number of tourists is reduced or even during disruptive events. Importantly, the findings indicate the linkage between economic and environmental impacts. They do not only imply the negative environmental consequences associated with economic growth but also recognise the need to reconsider the significance of economic decline towards negative environmental impacts. The reduction in the number of tourists lacks a significant change in the negative environmental impacts. It further implies that when a tourist destination is developed, the negative environmental impact remains.

A clear understanding of residents' perceptions of tourism development is necessary to promote sustainable tourism development (Eusébio et al., 2018). Many tourist destinations face problems from over-tourism as well as increasing numbers of tourists before the pandemic period. Based on the situation in such disruptive events, the problems caused by over-tourism have disappeared (Kamata, 2022). However, the negative environmental impacts persist in residents' perceptions based on the findings. Therefore, merely reducing the number of tourists will not immediately remove the negative perceptions of such impacts. Environmental impacts and tourist management policies such as environment improvement and behaviour rules should be given focus to promote sustainable tourism development (Wang et al., 2020) all the time. Moreover, these findings imply that tourism-related jobs significantly affect residents. Residents whose work is related to the public sector in tourism tend to exhibit a favourable perception of economic impacts. This finding is contrary to previous studies that suggest a perceived negative environmental impact can be negatively related to residents' support of tourism development (Kanwal et al., 2020). Results suggest that although the respondents indicate various negative environmental impacts, they still support tourism development, particularly from the respondents working in the public sector. They may consider those negative impacts that remain temporary and still favourable to tourism development. Overall, aligning with the previous study, they are economically dependent on tourism and tend to support it (Rasoolimanesh et al., 2015). Therefore, the results echo the previous studies that show no statistically significant relationship between the residents' perception of negative tourism impacts and tourism development (Eusébio et al., 2018). Various determinants can influence residents' support for tourism development such as the following: economic dependence on tourism seems to be one of the stronger determinants in this case.

Managerial Implications

Understanding the residents' perceptions of impacts is crucial and requires continuous monitoring. Keeping their perceptions in mind is the key to developing and implementing successful tourism strategies in tourist destinations (Rey-Carmona et al., 2023). Good tourism planning can help mitigate tourism's economic and environmental impacts (Asadzadeh & Mousavi, 2017). The findings can provide ideas for tourism planning in the future, such as coping with the impacts of disruptive events (Aldao et al., 2021), suggesting that tourism practitioners and policymakers should pay closer attention to negative impacts although the residents still support tourism development. Furthermore, it implies obtaining support from residents who do not complete all the tasks in the tourism development. The residents' involvement in the tourism planning and development is also considered. Residents' participation is necessary for success (Çelik & Rasoolimanesh, 2023). The residents are

frequently excluded from tourism decision-making and tourism planning (Dyer et al., 2007). If the residents can participate in the tourism planning process, they tend to feel responsible for tourism (Çelik & Rasoolimanesh, 2023); then, they are anticipated to give strong support for tourism development.

Furthermore, the direction of a sustainable approach related to reducing, reusing and recycling should be embedded in tourism education in a push to transform people's consumption behaviour in tourism (Higgins-Desbiolles et al., 2019). Striving for institutional, structural and behavioural transformations is necessary (Sharpley, 2020). The negative impacts of tourism cannot be overlooked (Latkova & Vogt, 2012), particularly in environmental impacts with an emphasis on overcrowding and traffic congestion. Macao is a gaming-dependent economy (Lim & To, 2022); therefore, the pandemic period has negatively impacted the tourism industry in Macao, which is deemed to be a slow recovery (Gursoy & Chi, 2020) in the economy. Gaming is a tourist attraction in Macao; tourism development should not only be one pillar and needs a diverse economy. The results also show that the orientation of government budgets towards recreation infrastructure development is essential, not only for positive economic benefits but also for handling the negative environmental impacts. When tourist destinations encounter a challenging situation with reduced numbers of tourists, they focus on the negative economic impacts and other potential negatives that cannot be overlooked. Thus, considering the multifaceted aspects of sustainable tourism development is suggested for understanding the latter.

Conclusion, Limitations, and Future Study

This study aims to contribute to including determinants such as including local residents from the private and public sectors which are absent or minimally incorporated in the previous studies related to tourism impacts and development. Understanding different stakeholders can be considered a first step in exploring conflicts and agreements. Maintaining a balance between the interests of various stakeholders and tourism development is vital as it affects sustainable tourism development. The residents related to the private sector are discontented and unsatisfied with Macao's economic status during the pandemic period. Residents' voices offer powerful insights that should be considered in the process along with their further remedial actions. This study provides extensive knowledge of economic and environmental impacts on residents in Macao and the tourism strategies that could be considered during disruptive events. Its significance lies in the fact that many researchers have identified residents' perceptions as a critical and basic component of mitigating the tourism sector's long-term growth. Although many studies on residents' perceptions of tourism impacts and development have been conducted in tourist destinations, they remain the foundation for achieving sustainable tourism development.

As with other studies, this study has encountered several limitations that could provide opportunities for future research. Firstly, the researchers primarily focus on economic and environmental impacts; socio-cultural impacts can be considered in future studies. Future studies on sustainable tourism development can be accomplished on a broader, more in-depth scale to allow for a more comprehensive study of the data; quantitative methods can be used. Secondly, only residents directly involved in tourism are interviewed; generalising from the data had to be done cautiously to avoid reaching a misleading conclusion. Future studies can consider how tourism impacts all types of stakeholders in tourist destinations, particularly

residents or non-local residents who have worked or stayed can be considered. Obtaining data from them regarding their perceptions of tourism impacts may help formulate strategies that would help alleviate residents' negative perceptions or concerns regarding the impacts on tourist destinations. Lastly, given that this study's findings show that most respondents negatively perceive tourism's economic and environmental impacts during disruptive events, further follow-up can be conducted to examine whether those negative perceptions of the residents have changed over time. Longitudinal research should be conducted in the future. Nonetheless, this study provides evidence for additional research in this field by shedding light on tourism's economic and environmental impacts from the perspective of residents.

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