

Research Paper: Investigating Citizen Perception of Covid 19 Effects on the Tourism Sector (Case Study: Bandar Anzali)

Mehdi Hesam^{1*}, Hamid Reza Yoosefi Matak², Amir Hossein Nourbakhsh³

1. Associate Professor of Geography, Faculty of Literature and Humanities, University of Guilan, Rasht, Iran.

2. PhD Candidate of Urban Planning, Faculty of Architecture & Urban Planning, Imam Khomeini International University (IKIU), Qazvin, Iran.

3. PhD Student of Urban Planning, Faculty of Art and Architecture, University of Guilan, Rasht, Iran.



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ABSTRACT

Purpose: Cities are often considered tourist destinations, with tourism increasingly recognized as a primary source of income. To maintain this source sustainably, cities must be prepared to face emerging challenges. The spread of coronavirus has been a significant challenge for cities in recent decades because of macro politics, especially based on traffic restrictions against this virus, which is causing serious loss of tourist destinations. The primary objective of this research is to investigate citizens' perceptions of the effects of COVID-19 on tourism, focusing on Bandar Anzali during the Pandemic.

Methods: The current study is practical in goal and descriptive-quantitative in research methodology. Data collection was done through surveys and documentary research using questionnaires. The questionnaires were structured around six main factors: occupation, income, tourist services, afford, welfare, and entrepreneurship. The information collected from the questionnaires was quantitatively analyzed using SPSS software, and software tests such as the binomial test, Spearman correlation coefficient, and Friedman test were also used. Then, it is modelled, and its finding is analyzed with the use of Smart PLS3 software.

Results: The most effective path Coefficient was for the hidden factor of welfare (0.955), indicating that welfare has a profound effect on Bandar Anzali's tourism destination. The factors of tourist services and income, with the path coefficients of 0.953 and 0.954, respectively, are the most effective.

Conclusion: The results of this study indicate that focusing on welfare factors—such as reducing economic inequity among employees, promoting the welfare level of employees, upholding justice in earning tourism incomes, increasing the stability of occupations, and promoting the living level of employees in the Anzali tourist section—can promote the tourism economy of Anzali in the crisis period of the coronavirus.

* Corresponding Author:

Mehdi Hesam, PhD

Address: Faculty of Literature and Humanities, University of Guilan, Rasht, Iran.

Tel: +98 (919) 4464776

E-mail: mhesam@guilan.ac.ir

1. Introduction

In the context of the profound challenges introduced by the COVID-19 pandemic, how have citizens in Bandar Anzali perceived the impacts on both the tourism sector and its economic dimensions?

The emergence of the novel coronavirus (COVID-19) in December 2019 in Wuhan, China, has presented numerous challenges to countries worldwide (Tahernia & Hasanvand, 2020: 44). This virus has significantly impacted global economic development, with stringent lockdowns, travel restrictions, and social distancing measures drastically reducing consumption and income. This international situation has led to a worldwide economic recession (Baker & Rosby, 2020: 189). COVID-19 is one of those pandemics that quickly escalated to a global scale, directly affecting various industries, particularly the tourism and retail sectors (Lee & McKibbin, 2004: 115). Before the outbreak, half of international tourism involved urban tourism. Moreover, in recent decades, tourism in urban destinations has grown more than in non-urban destinations (WTTC, 2018: 2). The pandemic can have devastating effects on tourism. Despite the restrictions, the development of tourism is still possible. Importantly, this pandemic underscores the need to understand tourism within the larger global economic and political framework that defines the world's future. We must now comprehend and explain whether our fundamental theories and understandings have changed due to the pandemic (Zenker & Kock, 2020: 3). Furthermore, in the context of a global pandemic, knowledge of epidemiology and public health contributes to a sense of security and risk in individuals, each of which is an essential component of tourism demand and supply. Therefore, interdisciplinary dialogue, especially between tourism and other fields, can better illuminate theories, methods, and models concerning the relationship between COVID-19 and tourism (Yang et al., 2021: 14).

Tourism, as a cultural, social, and economic activity, holds significant importance for the development of countries. Tourism is a phenomenon that, with precise planning, can lead to increased production, improved living standards, public welfare, and the employment of many production factors, especially labor, capital, and land. Economists view tourism as a catalyst for capital development and job creation, paying particular attention to this industry. Thus, the precise economic development of tourism enhances foreign exchange earnings. Suppose a country can harness its potential and accel-

erate this industry's wheels. In that case, it will witness substantial economic growth (Shakouri et al., 2017: 34). Tourism is also one of the crucial economic sectors that can be considered a clean industry, significantly contributing to job creation and income enhancement, in addition to increasing foreign exchange earnings for the national economy. This industry plays a vital role in developing other industries as a driving force. Here, Iran, due to its historical monuments and ecotourism attractions, ranks among the top 9 out of 10 countries globally (Shakouri et al., 2017: 48). The cities of Gilan, particularly Anzali, due to their location, climate, and historical value, are considered one of the most important tourist destinations in the country and even in the world, attracting both domestic and international tourists. Cities have always been the economic and innovation hubs in various fields through their ecosystem management and structure. The COVID-19 outbreak has disrupted city structures and their tourism. Economically, the pandemic's financial losses are largely due to decreased demand, meaning there are no customers to purchase the goods and services of the global economy (Menonati, 2020: 165). Therefore, the main question of this research is: What is the perception of citizens regarding the effects of COVID-19 on tourism in the case study of Bandar Anzali during the pandemic?

2. Literature Review

2.1. Coronavirus and Cities

The perception of citizens regarding the effects of COVID-19 on tourism is a critical factor in decision-making and planning within the tourism sector. Understanding how citizens perceive these impacts can provide valuable insights for policymakers and stakeholders to develop strategies that address the challenges posed by the pandemic. This perception influences not only the immediate response to the crisis but also the long-term sustainability and resilience of the tourism industry. By integrating citizen perceptions into planning processes, authorities can ensure that recovery efforts are aligned with public sentiment and needs, ultimately leading to more effective and inclusive tourism management. Cities are complex systems whose features affect their inhabitants' health (Salaripour & Yoosefi Matak, 2021: 8). Emerging infectious diseases are increasing and causing both loss of human life and high societal costs. Many factors play a role in the occurrence of diseases, including climate change, globalization, and urbanization, and most of these factors are caused by humans to some extent. Pathogens may be more or less susceptible to emergence, and among emerging pathogens, mutated viruses

are more common (Lindahl & Grace, 2015). Coronaviruses are a big family of viruses and a subset of Coronaviridae, which contains a wide range of diseases, from common cold to severe diseases like Sars-Cov-2, Mers-Cov-2, and Covid-19. Coronaviruses were discovered in 1960, and studies on them continued till 1980. These viruses spread naturally in mammals and birds. Yet seven coronaviruses transmitted to humans are discovered. The last one, Severe acute respiratory (Sars-Cov-2), in Wuhan, China, spread in humans in December 2019 (Karami et al., 2020: 623). COVID-19 is highly communicable, and its rapid spread has triggered a worldwide health crisis, which is considered through plans and social distancing strategies on local and global scales (Salama, 2020: 1). The pandemic has profoundly impacted human life, influencing daily routines, and even entering humor, comedies, and socio-political criticisms and changed the social and cultural life of society (Davis & Lohm, 2020: 12). The coronavirus epidemic has revived people's existential anxieties by reminding people of their vulnerable physical and economic abilities. It is during this time that our deeply ingrained evolutionary protective mechanisms are activated (Kock et al., 2020: 10).

More than half of the world's population is living in cities. It is expected that cities' population will reach about 70 per cent of the world population by 2050. Cities, in comparison with the suburbs, will be more prepared to face COVID-19 because of their better and more developed healthcare. Still, cities' population density is rather high. Therefore, they are in danger because of the citizens' rather closeness and the challenges of keeping social distancing. In particular, big and smaller cities play roles in occupations and transnational activities. These cities can boost the spread of COVID-19 because their people have more connections. Also cities with social inequality and densely populated poor communities potentially are more in danger in comparison with cities with social quality and less population density (Tehran Urban Research and Planning Center, 2020: 7). The ever-increasing density of people in dense urban areas, coupled with efficient modes of transportation that connect these centers, makes cities particularly vulnerable to the spread of epidemics; Therefore, this issue makes it more important to pay attention to the relationship between the coronavirus and the city (Hazarie et al., 2021: 1). Pandemics have shaped the way cities are planned and configured. Throughout history, cities have evolved to solve health problems and access to health while providing space and opportunities for urban dwellers. Covid-19 will have important implications for how cities are planned (Martinez & Short, 2021: 1).

2.2. Tourism and the Effect of Corona on the Tourism Economy

Tourism is known as a human activity and an improving and extensive industry. Tourism has its special offers and demand and products with specific features are distinguished from the other economic activities, and the use of economic sources has positive or negative effects on the national or international level (Imani et al., 2013: 1). Cities and tourism have a complementary relationship since all the types of tourism need urban clubs and services, so in every planning for improving and developing tourism urban potencies in offering direct and indirect services should be considered (Nouri Kermani et al., 2009: 139).

Tourism has a significant role in making a balance between a constant and improving the local living quality and solving the problem of a society with a high poor population density. "The importance of tourism in the current age, more than everything, is related to that economic cycle which is more qualified in improving the local and international economy." (Lee et al., 2008: 180-181). Tourism incomes in its travels can be replaced with exports and can help to improve the country's income through currency income. As a result, the incomes of tourism are known as a significant source for increasing occupations, family incomes, and national incomes in the world (Oh, 2005: 39). Since tourism is growing in many countries, the causative relation between economic growth and tourism textures for policymakers is of great importance (Sokhanvar et al., 2018: 97) in addition that, improving tourism could have positive economic results in gross domestic product and job opportunities for countries (Manzoor et al., 2019: 14). The tourism and travel industry has grown worldwide in importance since 1990, when services were growing. From 1990 the portion of the tourism and travel industry in the gross domestic product has increased from %9.9 in 1995 to %10.3 in 2019. The impact of tourism and travel agencies is also notable at the occupation level. The total participation in the world occupation was 10.4 in 2019. Sars epidemic in 2003 and the financial crisis in 2008 had a severe negative effect on the tourism and travel industry of the world and region (Skare et al., 2021: 3). The tourism industry plays an effective role in the economic processes of countries (Çiftçioğlu & Sokhanvar, 2021: 1). In case of development and stability, it has positive effects such as job creation, income generation, circulation, and foreign exchange attraction through domestic and foreign visitors, which can be mentioned as the third industry in the world after the oil industry and automobile manufacturing (Keshavarz, 2019: 121). Therefore,

tourism is one of the most important economic activities with a high potential for creating employment in many parts of the world (Grubor et al., 2019: 6691) to the extent that it can be considered the main source of income for government departments and local residents (Brida et al., 2011) and attracting domestic and foreign investors (Jenkins, 1982: 91). Recently, in their management policies, local politicians looked at tourism as an effective activity for political, cultural and economic development at the macro level (Ghahramanifard et al., 2021: 67). Today, the development of the tourism industry is considered one of the important ways to achieve growth and development in the world, and different societies have paid attention to this category as one of the important factors of income generation and have based many of their programs on this basis (Yaghfoori et al., 2020: 107). For this reason, from the perspective of sustainable and dynamic development, based on parameters such as gross income, exports, job creation, travel, and tourism, tourism is the largest industry in the world (Seraphin et al., 2018: 89). Meanwhile, tourism, as one of the most dynamic economic activities of the present era, can play an effective role in the development of cities (Asadi Peyman et al., 2020: 50). So, the interest in urban tourism since the beginning of the 1980s has changed the trend and methods of tourism to a great extent (Ciango & Popescu, 2013: 34). Therefore, cities, as the densest human settlements, are among the important places for tourism purposes (Alvarez, 2010). Cities, as a collection of components, spaces, cycles, and governing laws, regardless of their current relationships, are the most attractive tourist places. They can provide various manifestations of beauty, services, and relaxation for local residents and visitors. Therefore, achieving sustainable urban development has always been one of the most important concerns of urban planners. The realization of this development with the current economic conditions and the limitations of labor resources does not seem simple; Therefore, one of the most effective processes of sustainable urban development is tourism, which can become the most important economic pole of cities (Grah et al., 2020: 792).

After the start of the COVID-19 disease in December 2019 in China, the first cases of this disease were officially announced on February 19 in Iran. Along with China, the United States of America, Italy, Spain, Germany, and Iran have suffered the most from the spread of Covid-19. Another problem for Iran is that it faces the double pressure of political sanctions and the supply of medical and pharmaceutical equipment. An epidemic can be the main driver of the collapse of the tourism industry, because it affects all human activities, including social, religious, sports, artistic, and cultural. The coronavirus has dis-

rupted the world tourism industry. Countries like China, where the epidemic started, as well as Italy, where new cases are constantly being reported, are no longer tourist destinations. Countries that rely on the tourism industry for their economic growth have faced many problems. Almost all countries are facing the suspension of international travel. Even if the main activities and industries resume their activities, the impact will continue for some time (Lapointe, 2020). Of course, the country's political conditions, weak economic power, and commercial exchanges and business connections due to the US sanctions, as well as the small and nascent nature of tourism businesses in Iran, have made the tourism supply sector more vulnerable and caused it not to be a good year for tourism sector activists; Therefore, it can be said that in the last few months, the tourism sector in all countries, including Iran, has suffered heavy losses. In this regard, some countries, including France and Germany, have provided significant financial aid to their country's tourism industry, but the Iranian government is unable to provide effective financial aid to tourism business operators due to the country's many economic problems (Stezhko, 2020).

The arrival of the coronavirus needs some activities to control, which has a significant economic impact, including massive restrictions on transportation and moving the workforce, particularly in tourism, travel, entertainment, and leisure time. Also, closing a factory or decreasing activity affects the provision of the world chain (Baldwin & Mauro, 2020: 39). Nature, situation, and unexperienced impacts of this virus indicate that this crisis is not only different from other crises but also can make structural changes and deep and long-term evolution in tourism as an activity and socio-economy industry. This huge and worldwide scale, dimensional and coherent impacts, taking current system and values under challenge, downturn, and depression are special features of this pandemic (Sigala, 2020: 312). Corona's impact on the world economy and tourism was easily notable immediately after China prohibited travel all around the country to prevent the spreading of the virus.

As a result of China's restricted actions to control coronavirus prevalence, based on the CNBC report, it cancelled about 200000 internal and external flights to China. Corona prevalence had a severe domino impact because many countries have restricted immediately the entrance of hurt patients. It includes the temporary closing of special destinations, cancelling or postponing important gatherings, and mainly important sports events, like the Olympics 2020 (Polyzos et al., 2021: 176).

Flexibility and alacrity are two important features needed in tourism. It is expected that in the future, there will be a high need for mobility, consumption, and free choice, but this is reflected in local fields. Updating travel insurance, repaying, and changing the policies are needed so that firms can offer their services completely certain and flexible (Uğur & Akbıyık, 2020: 11). Urban areas always face challenges and difficulties that threaten the city and region's economy, but utilising tourism development can lead to attracting needed capital for developing cities and tourist destinations and do that by studying the kind of challenges and the way of offering solutions in the tourism section.

2.3. Crisis Management and Coronavirus

The world has always encountered natural and unnatural disasters, and managers are trying to control and stop the crisis. In other words, crises and disasters are inseparable parts of human life. The pandemic was one of the recent global crises that the current age is experiencing (Baharlooei & Nayedar, 2020: 94). The Prevalence and epidemic of the new coronavirus (COVID-19) as a pandemic illness (worldwide) made the health system face the most crises. Difficulties in managing this crisis, especially with the particular situation in Iran, having no information about this disease and no experience, had provided the fields for innovations (Heidari, 2020: 95). Regarding the importance of the new virus of COVID-19, the World Health Organization also published instructions which make people and staff of health domains and carrying them out is necessary for controlling and preventing COVID-19. Nowadays, regarding the high statistics of coronavirus prevalence, to carry out management decisions, the government should take into account the specified budget for health care services and medical centres. In addition, people's relaxation and spirit are important. Thus, the government and related organs present daily reports of crisis levels. And also tries to improve people and Corona patients' morale with the help of different media. In a crisis, often, particularly in the prevalence of the new coronavirus poor and weak people are mostly in danger. Therefore, the government and its organs should offer them some facilities to meet their basic needs of physical and mental health. Also, in the meantime, there are many problems, such as closing occupations, shortage of workforce, insufficient control in breaking the transmission chain, the health ministry recommendations for staying at home, and shortage in facilities and health care centres (Maher et al., 2020: 12).

Tourism destinations are among the sectors that have received the most negative impact from this crisis. Con-

sidering the frequency and fury of crises during the last decade (Pennington-Gray, 2018: 136) and the increased access to information about these events, it has led to the intensification of crises that directly affect the tourism industry (Schroeder et al., 2013: 127). A crisis can affect travellers' destination images as well as their travel destination choices (Pennington-Gray et al., 2011: 316). Society's reaction to a crisis is influenced by the decisions that are made (Hall et al., 2018).

3. Methodology

The present study goal is practical and its method is descriptive-quantitative. Data collection is done through surveys and documentary research using questionnaires. The questions are designed by the Likert five range spectrum from high to low. Questions in questionnaires are made based on six main factors: occupation, income, tourist services, affordability, welfare, and entrepreneurship, encompassing a total of 29 indices. In this category, there are research criteria that relate to them. Some questions are designed. The statistical population of this research is residents and citizens of Anzali in 2021. For this amount of issue, the Cochran Formula is used, and 398 questionnaires are made concerning the statistical population of Anzali based on the census in 2016, which was 139016. For more stability, 386 questionnaires were distributed randomly, including 77 online responses and 309 in-person responses.

The collected data were quantitatively analyzed using SPSS software, employing tests such as binomial test, correlation coefficient, Friedman test, and... are used. To confirm the questionnaire, the amount of Cronbach's Alfa was analyzed, and it was 0.892. This number indicates the validity and stability of these questionnaire questions.

The port of Anzali is a coastal area in the north of Iran. It is the biggest sea economic pole located south of the Caspian Sea. The city has a population of about 140,000. The Caspian Sea borders it to the north and Anzali's international lagoon to the south, resulting in a linear urban growth pattern.

A key feature of the city is 'The Shanbe Bazaar Roga River, an essential corridor connecting the international lagoon and the Caspian Sea passes from different parts of the city to its centre (Minaei & Nourbakhsh, 2021: 5).

Anzali is strategically important due to its connections with independent northern countries, proximity to densely populated regions, and role as an important

commercial and industrial hub for Iran. Through its sea routes, Anzali is linked with major ports along the Mazandaran coast. It connects to international waterways via the Volga-Don Canal and the Black Sea, enabling trade with various European countries.

This city’s strategic position, accessibility, and integration with neighbouring centres and transit routes make it a popular destination for tourists and a critical component of Iranian economic and social frameworks. Additionally, it facilitates the establishment of new connections with other neighbouring tourist hubs (Zarghaam & Haji Mohammad Amini, 2012: 107).

4. Findings

In the present study, 386 individuals participated and responded to the survey. In addition to the answers to the study criteria and indexes, the participant’s information has been analyzed. of their sexual status, they are 61.7% male and 38.3% female. The participants’ occupations include 48% self-employed, 17.8% employed, 12.3 university students, 5.3% retired, 3.8% homemakers, and 2.3 unemployed. Of their educational status, they are 5.8% under Diploma, 23.4% Diploma, 13.2% Associated Degree, 36% Bachelor’s, 18.4% M.A degree, and 3.2% a Ph.D. degree. The income of participants is 20.6% under a million, 34.8% between one to three mil-

lion, 19.1% between three to five million, and 25.5% more than 5 million.

Table 1 shows the AVG Criterion, the total Category average (criterion), SEM, Std, and P-value of each index.

Based on the results presented in Table 1, the analysis highlights the following key insights:

The index “How do you estimate the coronavirus effect on decreasing the tourism employees’ income of Anzali?” belongs to the income criterion and has the highest average score of 3.76.

The index “How do you estimate the coronavirus effect on decreasing the demand for handicraft products of Anzali?” part of the entrepreneur index recorded the lowest average score of 3.42. Also, the AVG Criterion indicates that the people’s responses to the questions are higher than the average. Thus, with a P-value smaller than 0.05 (0.000), the test is valid for study criteria, and rating the indexes is effective in influencing the economy of Anzali’s tourist destination.

Table 1. Average and confidence level of each index

| critrion | Codes | Indexes | P-value | AVG Crite- rion | Category aver- age (criterion) | SEM | Std |
|------------|-------|---|---------|--------------------|-----------------------------------|-------|------|
| Occupation | A1 | How do you estimate the corona effect on decreasing the occupation in tourism of Anzali? | 0.000 | 3.64 | 3.59 | 0.057 | 1.09 |
| | A2 | How do you estimate the corona effect on decreasing women’s occupation in Anzali’s tourism industry? | 0.000 | 3.43 | | | |
| | A3 | How do you estimate the corona effect on decreasing the youth occupation in Anzali’s tourism industry? | 0.000 | 3.55 | | | |
| | A4 | How do you estimate the corona virus effect on decreasing the redundancy of other parts of Anzali’s tourism? | 0.000 | 3.58 | | | |
| | A5 | How do you estimate the corona virus effect on decreasing job satisfaction among tourism employees of Anzali? | 0.000 | 3.74 | | | |
| | A6 | How much do you estimate the coronavirus effect on the hope job future in tourism of Anzali? | 0.000 | 3.64 | | | |

Table 1. Average and confidence level of each index

| critereion | Codes | Indexes | P-value | AVG Cri- terion | Category average (critereion) | SEM | Std |
|-----------------------|-------|--|---------|--------------------|-------------------------------------|-------|------|
| Tourism Services | B1 | How much do you estimate the corona effect on decreasing going to tourism service centers (like the villa renting offices and...) of Anzali? | 0.000 | 3.52 | 3.55 | 0.054 | 1.04 |
| | B2 | How do you estimate the coronavirus effect on residential accommodation decreasing demands of Anzali? | 0.000 | 3.50 | | | |
| | B3 | How do you estimate the corona effect on decreasing demands for the welfare and recreation of Anzali? | 0.000 | 3.56 | | | |
| | B4 | How much do you estimate the coronavirus effect on decreasing Anzali's hospitality accommodation demands? | 0.000 | 3.58 | | | |
| | B5 | How do you estimate the coronavirus effect on offering virtual services in Anzali? | 0.000 | 3.43 | | | |
| | B6 | How much do you estimate the coronavirus effect on decreasing the coastal and sea tourism demands in Anzali? | 0.000 | 3.59 | | | |
| | B7 | How much do you estimate the coronavirus effect on food tourism in Anzali? | 0.000 | 3.66 | | | |
| | B8 | How much do you estimate the coronavirus effect on Anzali's decreasing sports demands? | 0.000 | 3.59 | | | |
| Income | C1 | How much do you estimate the decrease in tourism employees' income of Anzali? | 0.000 | 3.76 | 3.73 | 0.059 | 1.14 |
| | C2 | How much do you estimate the corona effects on the purchasing power of tourism employees in Anzali? | 0.000 | 3.71 | | | |
| | C3 | How much do you estimate the corona effect on decreasing income satisfaction of tourism employees of Anzali? | 0.000 | 3.73 | | | |
| | C4 | How much do you estimate the decrease in tourism employees' savings of Anzali? | 0.000 | 3.75 | | | |
| Welfare | D1 | How much do you estimate the corona effects on increasing the economic inequity related to tourism affairs with other people of Anzali? | 0.000 | 3.58 | 3.65 | 0.055 | 1.06 |
| | D2 | How much do you estimate the corona effects on decreasing the welfare level of tourism employees of Anzali? | 0.000 | 3.66 | | | |
| | D3 | How much do you estimate the corona effect on inequalities in earning tourism of Anzali? | 0.000 | 3.66 | | | |
| | D4 | How much do you estimate the corona effects on decreasing the job goodness of fit-making in tourism of Anzali? | 0.000 | 3.70 | | | |
| | D5 | How much do you estimate the corona effects on decreasing the living level of tourism employees of Anzali? | 0.000 | 3.68 | | | |
| Entrepre- neurship | E1 | How much do you estimate the corona effects in decreasing the demands for handcraft of Anzali? | 0.000 | 3.42 | 3.56 | 0.054 | 1.04 |
| | E2 | How much do you estimate the corona effects on decreasing investment in tourism of Anzali? | 0.000 | 3.60 | | | |
| | E3 | How much is Corona's effect on decreasing the job variation in tourism of Anzali? | 0.000 | 3.57 | | | |
| | E4 | How much do you estimate the corona effects on decreasing the indirect occupation (shopkeeper, pedlar...) of Anzali? | 0.000 | 3.66 | | | |
| Purchas- ing Power | F1 | How much do you estimate the corona effects on shopping from local markets of Anzali? | 0.000 | 3.54 | 3.50 | 0.068 | 1.04 |
| | F2 | How much do you estimate the corona effects on demand for agricultural products (marketing the products in Anzali's market) in Anzali? | 0.000 | 3.44 | | | |

4.1. Spearman correlation coefficient

A Spearman correlation coefficient is used for showing the correlation between the sequential variable. According to the study findings in analyzing the Spearman correlation coefficient between the income of participants and study criteria, since the amount of sig for a 2-tailed test for all 6 criteria, occupations, income, tourism services, purchase power, welfare, an entrepreneur is more than 0.01, rejection of the assumption of 1 (correlation) and confirmation the assumption of 0 (no correlation) is obtained among the criteria.

4.2. One- Sample Kolmogorov-Smirnov Test

Before deciding for selecting the proper test for each study, the normality or abnormality of data should be determined, then the kind of test should be selected. Computing one- Sample Kolmogorov-Smirnov Test is valid for all study variables ($P < 0.05$) ($0.00 < 0.05$) so the distribution is not normal and nonparametric tests should be used.

4.3. Binomial test

Binomial tests or ratio tests are used to recognize the effectiveness or ineffectiveness of some variables on a determined phenomenon and to study the objective percentage or ratio in the statistical society under study. This test is to study the effect of some variables on the determined phenomenon, which usually involves designing the hypothesis H_0 , which indicates ineffectiveness, and H_1 , which indicates the effectiveness of the variable. However, if this test is used to study a specific rate of society, the H_0 hypothesis indicates its presence, and H_1 indicates its absence in society. The binomial test table from the right includes factors or understudy variables respectively, describing or categorizing the factors or variables (category), the amount of data in each group (N), the observed proportion (observed Prop), test proportion (test Prop), and the significance level (sig). Notably, the error level of each test is considered 5 per cent. If the test sig is lower than the error level (5 per cent), the H_0 hypothesis is rejected. However, if the test

sig is more than 5 per cent, the H_0 is confirmed. So the following binomial test table is presented for the study criterion's occupation, income, tourist services, purchase power, welfare, and entrepreneur, which concerning all factors significance level (with the acceptance of H_1 hypothesis) is effective on tourist destinations of Anzali. It can be indicated that, through the numbers related to the observed ratio in criteria, the occupation criterion has a ratio of 0.71, the income criterion has a ratio of 0.74, the tourist services has a ratio of 0.71, the purchase criterion has the ratio of 0.6, the welfare criterion with the ratio of 0.72, the entrepreneur criterion with the ratio of 0.71, is more than the average effectiveness level. By studying the binomial test of each index of study six main criteria, it can be said that about occupation, income, and welfare, there is a meaningful relation among all the indexes; in the tourism criterion from the total criterion, seven criteria have accepted the H_1 hypothesis and are significant. Also, in the purchase power criterion, just the "decreasing demands for purchasing from local market" is significant. In the entrepreneur, criterion three criteria out of four presented criteria have accepted the H_1 hypothesis.

4.4. Fridman test

To rate and recognize the most important criterion, the Fridman test is used. This test is also used to analyze non-parametric statistical data through rating and to compare the mean rating of the criterion.

Regarding a significance level lower than 0.05 (0.000), the test is significant for the criteria, and ranking the criteria is effective in determining the economy of the Anzali tourist destination. It also concludes that there is a significant difference among the study criteria in terms of importance, and from the participants' views, these criteria are not equally valuable and important. In this table, the statistical test chi-test acts like the variant under mean ranks. The bigger the amount of this statistic, the greater the difference in ranks. According to Table 4, income, with a mean rank of 3.85, is in the highest rank, and after that, there are welfare criteria and tourist services, with mean ranks of 3.77 and 3.40.

Table 2. The result of analyzing the correlation coefficient

| Factor | Occupation | Income | Tourist Services | Purchase Power | Welfare | entrepreneur |
|-------------------------|------------|--------|------------------|----------------|---------|--------------|
| Correlation coefficient | 0.048 | 0.024 | 0.036 | -0.018 | 0.050 | 0.060 |
| Sig. (2-tailed) | 0.401 | 0.672 | 0.530 | 0.744 | 0.380 | 0.284 |
| Number | 314 | 321 | 310 | 330 | 314 | 320 |



Table 3. The binomial test results

| Factor | category | number | observed proportion | test proportion | 1-tailed test (sig) |
|------------------|----------|--------|---------------------|-----------------|---------------------|
| Occupation | <=3 | 104 | 0.29 | 0.50 | 0.000 |
| | >3 | 260 | 0.71 | | |
| | | 364 | 1.00 | | |
| Income | <=3 | 98 | 0.26 | 0.50 | 0.000 |
| | >3 | 274 | 0.74 | | |
| | | 372 | 1.00 | | |
| Tourist Services | <=3 | 106 | 0.29 | 0.50 | 0.000 |
| | >3 | 254 | 0.71 | | |
| | | 360 | 1.00 | | |
| Purchase Power | <=3 | 154 | 0.4 | 0.50 | 0.000 |
| | >3 | 229 | 0.6 | | |
| | | 383 | 1.00 | | |
| Welfare | <=3 | 103 | 0.28 | 0.50 | 0.000 |
| | >3 | 260 | 0.72 | | |
| | | 363 | 1.00 | | |
| Entrepreneur | <=3 | 110 | 0.29 | 0.50 | 0.000 |
| | >3 | 263 | 0.71 | | |
| | | 373 | 1.00 | | |



Table 4. Fridman test results

| Criteria | Mean Rank |
|--------------------|-----------|
| Occupation | 3.33 |
| Tourist Services | 3.40 |
| Income | 3.85 |
| Welfare | 3.77 |
| Entrepreneur | 3.35 |
| Purchase Power | 3.31 |
| Chi-square | 32.293 |
| Degrees of freedom | 5 |
| Significance level | 0.000 |



4.5. Confirmatory factor analysis model

Structural equation modelling is among the most powerful ways of analyzing multiple variables in statistics and recognizing content dimensions of quantitative study. Estimating the multiple relationships and measurability of hidden variables is one of the advantages of this model.

The clearest difference between structural equation modelling and previous techniques is that multiple relationships are used related to each dependent variable. In simpler words, structural equation modelling simultaneously estimates a set of multiple regression equations by determining the structural model utilized in the statistical program. The other important structural equation modelling ability is the possibility of entering the hidden

variables in data analysis. Previous statistical analysis methods described the hidden and concealed variables by utilizing statistics such as mean or total questions related to that variable. This leads to measuring errors in evaluating the hidden and concealed variables and consequently affects the results. Since a concealed construct is subjective, hypothetical, and not objective, it should be evaluated with measurable or objective variables, which are the questions or indexes themselves. In structural equation modelling, a concealed variable is evaluated indirectly with its compatibility with the questions, and this causes decreasing the measuring error calculations (Rafieian & Giahchi, 2021: 7). So, to evaluate the study model validity or stability, the confirmatory factor model and to model the structural equations SMART PLS3 software is used. In this article, in the reflective measurement section (latent variable to manifest variable),

factor loading (reliability of indicators), Cronbach’s Alpha, Composite Reliability (CR), and rho-A were used to confirm the reliability of the model (constructs). Also, in the validity index section, convergent validity (Average Variance Extracted (AVE)) and discriminant validity (Fornell and Larcker criterion) have been calculated. In the structural part, the value and significance of path coefficients, R Square Adjusted (R²) and Construct Cross Validated Redundancy (Q²) have been obtained.

A stability coefficient is used to evaluate the convergent validity evaluation of the stability coefficient criterion AVE and a mixture of CR. If AVE at least equals 0.5, it indicates that the criteria (variables) have proper convergent validity. It means that the concealed criterion can describe the average of its index’s variants. The AVE shows the correlation of a criterion with its indexes; the more correlation there is, the better and more proper the goodness of fit. Regarding that, in this study, the index average and extracted variant (AVE) for all the study criteria are more than 0.5, so the criteria’ convergent validity is confirmed. The coefficient of composite stability (CR) and the coefficient of Cronbach’s Alpha evaluate the stability of measurement tools. As is indicated in Table 5, the composite stability correlation (CR) and Cronbach’s Alpha correlation for all the study criteria are more than 0.7. Therefore, the stability of the study questions in the questionnaire is acceptable.

In comparison with Chronbach’s Alpha, the composite stability model shows more valid results. This is because the stability of the construct is not concluded but concerns its construct correlation. Analyzing the data in this study indicates high data validity and inner stability and is suitable for measurement models. This stability is also measured by the rho-A model. The measurement criteria in this model are higher than 0.7, which means that, concerning Table 5, all criteria are reliable enough.

Among 29 criteria of the questionnaire, the criterion “How do you estimate the corona effect in decreasing

the demands for shopping from local markets?” from the purchase power criteria with the coefficient of 0.913 has the most overlap. Also, the criterion “How do you estimate the employees’ purchasing power decrease in Anzali’s tourism section?” from the income criteria and the criterion “How do you estimate the corona effect in decreasing the goodness of fit-making of Anzali’s tourism occupations?” from the welfare criteria with the coefficient of 0.906 in the next level has the most overlap.

The criterion “the corona effect decreases in attracting the other sections’ excess force in Anzali’s tourism section? The occupation with the 0.787 coefficient has the lowest overlap. On the next level of the lowest overlap is the criterion “How do you estimate the corona effect in hope for occupation future of Anzali’s tourism?” from the same criteria with a coefficient of 0.796.

In the present study, the Goodness of the fit model in structural equation modelling is carried out with the SMART PLS3 software in 2 parts: 1) goodness of fit measurement models and 2) goodness of fit total models.

The Fornell and Larcker criterion is used to study the divergence (discriminant validity). To study discriminant validity, the construct correlation with its criteria is compared against the correlation of that construct with other criteria. Discriminant validity is acceptable when the amount of AVE for each construct is more than the shared variant between that construct and the other constructs (the R square adjusted) in the model. In this method, the average extracted variant root of each concealed criterion should be more than the maximum correlation of that criterion with other concealed criteria of the model. In other words, the matrix diameter should be more than the correlation between them, which are in the lower cells and the left of the main diameter (Table 6).

According to the data algorithm in PLS, after the goodness of fit, the measurement models turn to the goodness of fit of the construct.

Table 5. The model validity and stability criterion

| | Construct/indicator | Composite reliability (CR>0.7) | AVE (AVE>0.5) | Cronbach’s Alpha (Alpha>0.7) | rho-A |
|---|---------------------|--------------------------------|---------------|------------------------------|-------|
| 1 | Occupation | 0.936 | 0.709 | 0.917 | 0.920 |
| 2 | Tourist Services | 0.947 | 0.693 | 0.936 | 0.939 |
| 3 | Income | 0.944 | 0.909 | 0.921 | 0.921 |
| 4 | Welfare | 0.937 | 0.750 | 0.916 | 0.917 |
| 5 | Entrepreneur | 0.909 | 0.715 | 0.867 | 0.868 |
| 6 | Purchase Power | 0.885 | 0.793 | 0.742 | 0.762 |



Table 6. Comparing the matrix root of AVE and constructing correlation coefficients

| | Occupation | Tourist Services | Income | Welfare | Purchase Power | Entrepreneur |
|------------------|------------|------------------|--------|---------|----------------|--------------|
| Occupation | 0.842 | | | | | |
| Tourist Services | 0.843 | 0.832 | | | | |
| Income | 0.898 | 0.859 | 0.899 | | | |
| Welfare | 0.892 | 0.860 | 0.913 | 0.866 | | |
| Purchase Power | 0.669 | 0.772 | 0.668 | 0.731 | 0.891 | |
| Entrepreneur | 0.834 | 0.881 | 0.852 | 0.876 | 0.770 | 0.846 |



The coefficient of data determination (R^2) is a criterion for connecting the modelling measurement parts and constructing part of the structural model. It indicates an exogenous variable on an endogenous one. The coefficient of determination is between 0 and 1, and the closer to 1, the more accurate it is. The present research drawing model shows its accuracy in general. The determination coefficients of tourism services and income are respectively 0.908 and 0.892, so the results of the study can strongly describe the model. The second construct goodness of fit model criterion is the Q^2 criterion. This criterion determines the model predicting power in endogenous constructs. The models which have an acceptable goodness of fit construct should be able to predict the endogenous variables of the model. That means if, in a model, the relationship between data is correctly defined, the constructs affect each other. If Q^2 in the construct model test is above 0.3, it shows that the study construct model is proper. According to Table 7 in the study construct model, the income criterion with 0.678 is the best study construct model, and after that, welfare and entrepreneur criteria, respectively, with 0.64 and 0.594, are in the next levels.

4.6. Total study model power criterion (total goodness of fit)

Model goodness of fit is taken out of coefficient determination geometric mean and extracted variant mean AVE, which is named goodness of goodness of fit cri-

terion GOF^{14} which is calculated through rooting the multiple of two shared mean amount and coefficients of determination, that means that how a model is the goodness of fit to the sample data. The GOF amount should be above 0.36 to be a goodness-of-fit model.

Equation (1)

$$GOF = \sqrt{(communalities) \times (R^2)} \rightarrow \sqrt{0.744833 \times 0.84966} = 0.795$$

Communalities are the average sign of each construct's shared amount and the average of the model's endogenous constructs. Calculating the GOF based on the amount extracted from SMART PLS, which indicates 0.795, shows that this model has a strong goodness of fit.

In Figure 1, in the research drawing model, the regression coefficients (the path coefficient) are in powerful status. The path coefficient shows the effect of a hidden coefficient on the other one. if the path coefficient is closer to 1, it indicates its effectiveness. If it is closer to 0, it indicates that the independent criterion has no meaningful effects on the dependent criterion, and eventually, if it is close to -1. In reverse, it is powerfully effective. In the present research drawing model, 'the path coefficient ends in hidden criterion "welfare" has the most powerful effect (0.955). This means that the welfare criterion is strongly effective in Anzali's tourist destination economy. Tourist service and income criterion, with path coefficients of 0.953 and 0.944, respectively, are the most effective.

Table 7. Construct validated redundancy

| | Indicators | |
|---|------------------|-------|
| 1 | Occupation | 0.573 |
| 2 | Tourist Services | 0.587 |
| 3 | Income | 0.678 |
| 4 | Welfare | 0.640 |
| 5 | Purchase Power | 0.479 |
| 6 | Entrepreneur | 0.594 |



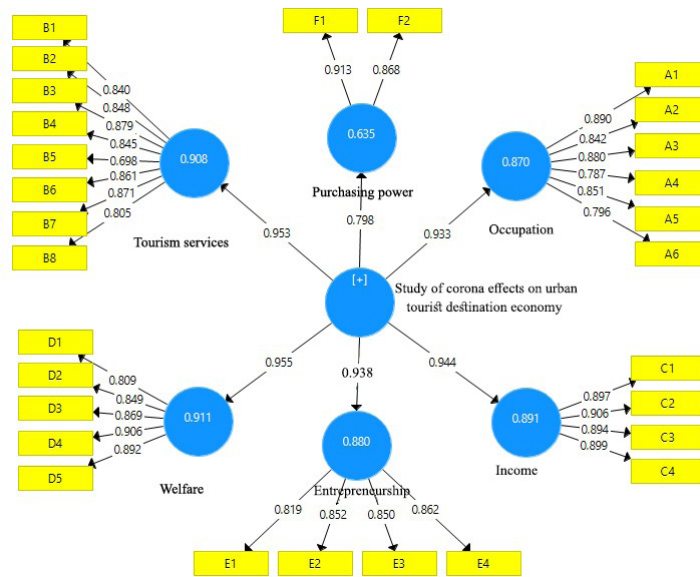


Figure 1. Research drawing model



5. Discussion

The city of Anzali, a prominent tourist destination in Guilan and the northern region of the country, has had a significant impact on the tourism sector following the outbreak of the coronavirus. Given Anzali’s substantial potential in tourism, this pandemic has had profound effects on various economic dimensions of the city. This study categorizes these impacts into six criteria: employment, income, tourist services, purchasing power, welfare, and entrepreneurship.

In all the indicators examined, the average perception of citizens regarding the negative effects of the coronavirus exceeded the midpoint (3). The statistical analysis results from the study highlight welfare as the most critical criterion. Enhancements in social distancing among employees, improvements in employee welfare, the establishment of equity in tourism-related incomes, increased job profitability, and the enhancement of living standards for employees in Anzali’s tourism sector are identified as measures that could bolster the tourism economy of Anzali during the coronavirus crisis.

Among the indicators, the occupation index has been in an unfavorable situation due to the dependence of many other indicators on it, as well as the sensitivity of the local people towards it. This issue was also confirmed in the research of Huang et al. (2020). In the said research, econometric analysis is used to examine the effects of the pandemic and intervention policies on the supply of US labor in tourism-related industries, and the result is that business closures lead to a decrease in employment

and small business activities in the hospitality industry. Also, tourist services at the next level are the important criterion of study, the indexes of which are a decrease in going to tourist services centers (offices for renting villas and...), demanding residential accommodation and recreational services, offering hospitality facilities and virtual tourism services, demanding sea and coastal tourism, and demanding for food and sports tourism of Anzali which is observed. The average effect of Corona on this index is 3.53 (Henseler et al., 2023). stated that during the COVID-19 pandemic, accommodation, transport, and tourism services in Tanzania had the largest decline among other businesses. According to the data presented in the research (Huynh et al., 2021), the income of businesses has decreased significantly compared to the same period in 2019. Specifically, the income of accommodation establishments has decreased by an average of 50% to 90%, while the income of travel agencies and dining establishments has decreased by 90% and about 60-90%, respectively.

In the research of Khan et al. (2021), the impact of COVID-19 on employment patterns in tourism-related sectors in the United States of America was examined, where museums and historical sites, performing arts, and sports seem to be more vulnerable. For example, Sharma and Nicolau (2020) assess the impact of the pandemic by estimating how infection and mortality rates affect US stock returns of tourism-related industries. Cruise lines were most affected. Kaczmarek et al. (2021) collected stock market data from tourism-related companies in 52 countries and showed that companies with low value,

limited leverage, and high investment are less affected than others. In addition, companies in countries that support some closure policies are more resilient to the negative effects of COVID-19. In terms of macroeconomic modelling, Yang, Zhang, and Chen (2020) developed a dynamic stochastic general equilibrium model to understand the impact of COVID-19 as an external economic shock. Subsidy policies for tourism consumption were useful in reducing related consequences.

To strengthen the people and employees, the present process should be revised. Moreover, with some changes in attitude, Anzali's economy would improve. Income is considered the third effective criterion of the Anzali tourist destination economy in the present study, which includes decreasing employees' income, decreasing purchase power, decreasing income satisfaction, and decreasing the tourist section employees' money saving, which is one of the cases that has the worst situation in terms of the effects of Corona on tourism because basically, the income is the most tangible economic part of tourism for the local people who face it daily. Research analysis (Sun et al., 2022) shows that a higher proportion of women (9.6%) and youth (10.1%) have experienced unemployment, while (-5%) are significantly less paid for working in tourism and (-23%) if they are women.

Concerning the so-called criterion, there is a hopeful perspective for Anzali as an urban tourist destination and the people who want to have a dynamic economy in the tourism sector.

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Conflict of Interest

The authors declared no conflicts of interest.

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