Germany's Tourism Sector: An Interdisciplinary Analysis of Growth and Sustainability

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Abstract German tourism is one of the European leaders. However, due to Coviq-19, there was a strong dip in this industry. For example, in 2020, the tourist flow fell to 12mln, and in 2021-to 11 million. It should also be noted that the Germans are digitizing this area, and through this they take a fundamental place in solving future risks and current problems. This article focuses on the main aspects of German tourism-economic impact, sustainable tourism, digital transformation in mainly 2018-2022. Applied studied research this area illustrates trends, problems and opportunities.

Keywords: COVID-19, German, Germany, Sustainable tourism development,travel, over tourism, employment, accommodation, Airbnb, trip, passenger.

Introduction

Germany is the world leader in tourist potential, attracting millions of tourists, every year. This is certainly facilitated by its historically rich heritage, the richness of natural resources (forests, natural landscape, water resources), as well as its infrastructure in attracting the world. In addition, the German education system also forces young people thirsty for science to come here. For example, 469,485 are international students as of 2023/2024 from 2.8 million students according to German international student statistics(https://www.studying-in-germany.org/germany-international-student-statistics/). tourism plays an important role in the German economy and contributes significantly to the level of GDP and employment. As the industry adapts to changing tourist requirements, sustainability, digitization, and public policy are becoming important destinations. This research focuses on the analysis of key aspects of German tourism – economic impact, sustainable tourism practices, digital transformation, and political systems. In addition, the results of empirical research shed light on the trends, problems, and possibilities of this area.

Literature Review

2.1. Economic impact of tourism in Germany

Germany generates US $ 40 mln annually from the tourism industry, while this sector has been employing approximately 3mln workers in the country (Statistisches Bundesamt, 2023). Studies show that urban tourism leads the country, and the cities of Berlin, Munich and Hamburg are the most visited. However, tourism in rural areas has significant differences, with problems such as seasonal changes, limited transport opportunities, and low tourist flow (Peeters et al., 2018).

Event tourism is an important economic factor, as the Oktoberfest (which dates from late September to early October), the Berlinale Film Festival(which has been held for 75 years) and Bundesliga games attract millions of tourists each year. However, the problem of Overtourism is especially evident in historical sites such as Neuschwanstein Castle and Rothenburg ob der Tauber, creating difficulties with the preservation of cultural heritage (Job et al., 2016). Researchers are recommending the development of tourist flow management strategies to help reduce environmental and infrastructural burden (Gössling et al., 2019).

2.2. Principles of sustainable tourism

Germany is one of the leading sustainable tourism nations, with a strong focus on eco-certification, renewable energy sources and environmental tourism projects. The areas of the Black Forest, Bavarian Alps and Saxon Switzerland are regarded as one of the examples of sustainable tourism, with extensive introduction of carbon neutral hotels and environmental travel services in these areas (Becken & Weaver, 2018).

Cities like Hamburg and Freiburg have advanced experience in low carbon transport, waste recycling programs and Responsible Tourism Policy (Hall & Gössling, 2020). Also, the circular economy model is actively promoted in tourism, which means that resource conservation, the use of local products and the reduction of Environmental Impact are taking an important place (Statistisches Bundesamt, 2023).

At the same time, large numbers of visitors are severely damaging some natural and cultural sites, requiring strict rules and territorial planning for long-term sustainable development (Peeters et al., 2018).

2.3. Digital technologies and smart tourism

The German tourism industry is being modernized with the help of digital technologies. Artificial intelligence (AI), Big Data, and predictive analysis methods are used to predict and manage tourist flows. Bakelman and Lessmann (2019) found that Germany is 14.8% better at predicting tourism demand using Google Trends data.

Artificial intelligence-based attendance monitoring systems have been implemented in Berlin and Munich to help track and regulate the movement of people in museums and historical sites (neuhofer et al., 2020).

In addition, the digital reconstruction of existing historical sites offers tourists the opportunity to gain a deeper experience through virtual tours (Gretzel et al., 2017).

2.4. Tourism Policy and regional cooperation

German tourism policy is coordinated by federal and territorial governing bodies, with public and private sector cooperation playing an important role. The Federal Ministry for economy and climate protection is advancing strategies for Sustainable Tourism Development, digitization and post-pandemic economic recovery.

Also, tourism cooperation with Austria and Switzerland is developing, and together green travel initiatives and advertising campaigns are underway. However, the introduction of strict regulations on Airbnb in Berlin is the subject of scientific controversy over its impact on the housing market and the local economy (Statistisches Bundesamt, 2023).

Methodology

This study used mixed techniques that included quantitative and qualitative analysis. Data from official tourism statistics, industry reports and tourism forecasting models are analyzed (Peeters et al., 2018).

In quantitative analysis, data from the Statistisches Bundesamt, The UNWTO Global and regional tourism performance data and field reports were studied. Through the study of articles and books on the field, the qualitative method was implemented.

Analytics and discussion

Inbound Tourism Summary

The indicators shows us the trend in inbound tourism in Germany by region from 2018 to 2022. As we can see, 2019 recorded the highest number of arrivals, reaching 39 million, and Europe provided the biggest share at 29 million. But, COVID-19 caused a sharp decline in tourism in 2020 and 2021, with total arrivals dropping to 12 million and 11 million. The most decline was in European visitors, but other regions also experienced a considerable decline. So the data shows Germany's heavy dependence on European tourists.

There is the number of visitors coming to Germany, separating overnight tourists from same-day visitors(excursionists). The data shows that overnight visitors make up the majority and impacting the total number of visitors. In contrast same-day visitors are lesser. This trend suggests that Germany attracts more travelers who stay longer rather than short visitors.

The provided information about tourist arrivals to Germany based on different modes of transport and accommodation over the years. The first graph shows that international tourists arrive in Germany by air, water, and land transport. As we can see Air travel remains the most common mode of arrival, and it is the largest share to the total tourist number. After that water based arrivals follows, but there is no information at all about land based transport. The second graph focuses on accommodation trends, mainly the number of guests and overnight stays in hotels and small lodging facilities. Overall, the data suggests that Germany's tourism sector heavily relies on air travel and overnight stays.

The detailed information about travel expenditure and spending patterns based on purpose of trips over recent years. We can see the impact of the pandemic on travel spending and also the recovery in 2022. The first graph shows total travel expenditure in the given years. It was high in 2018 and 2019 but it saw sharp decline due to COVID-19 and also a recovery in 2022.Overall people spend more on personal travel than on business trips, it means that leisure tourism drives most travel spending. Business travel had fallen during pandemic and had not yet fully recovered.
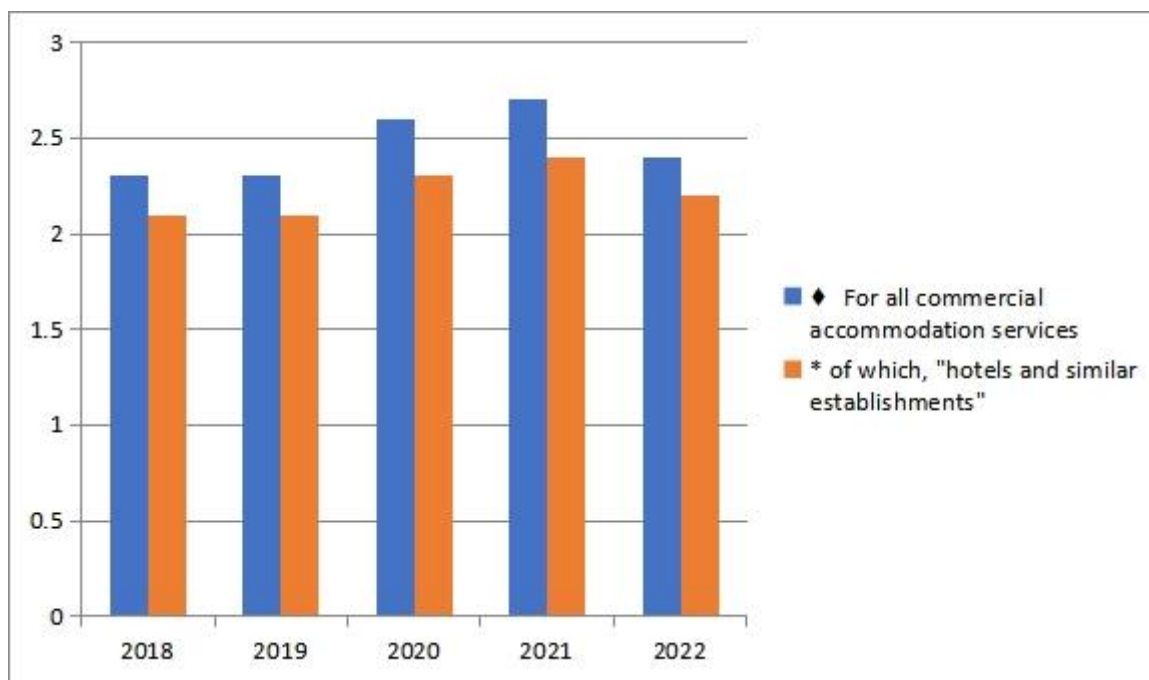
The graph shows a steady increase in accommodation use from 2018 and the peak is in 2019, but it slightly dropped in in 2022.Hotels make the big part of all total. This suggest that tourism recovered after the pandemic but faced a little drawback in 2022.

Outbound Tourism
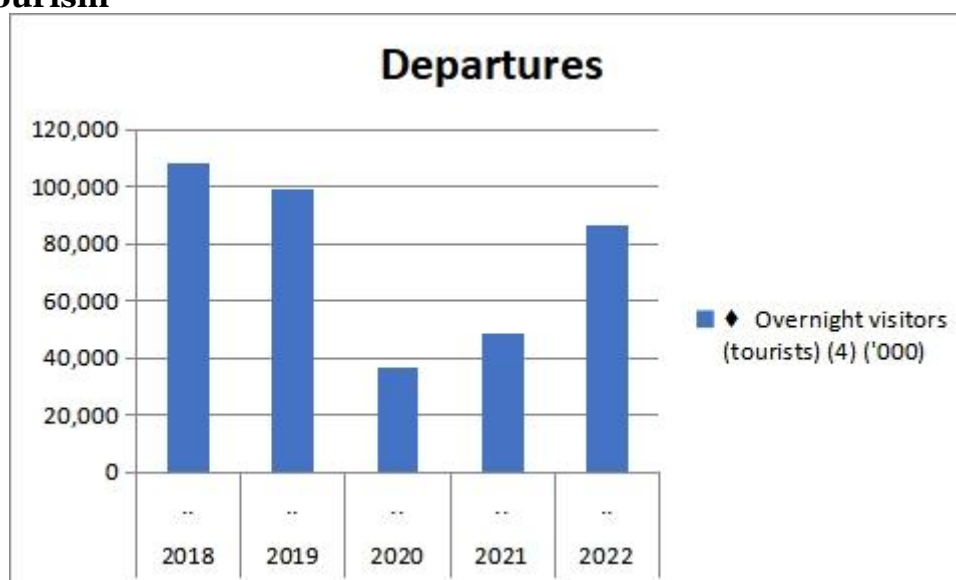
The provided graph illustrates the number of overnight visitors who left a German city from 2018 to 2022. In 2018 and 2019, the figures were relatively high, exceeding 100,000. However, in 2020, there was a sharp decrease to around 30,000–40,000, most likely due to lockdowns and the COVID-

19 pandemic. By 2021, with most people receiving vaccinations, departures rose to around 50,000. This increase continued in 2022, and by 2022, the figure had reached almost 85,000 as international travel resumed. The data clearly shows the impact of the pandemic on travel and the gradual shift to normal life in the following years.
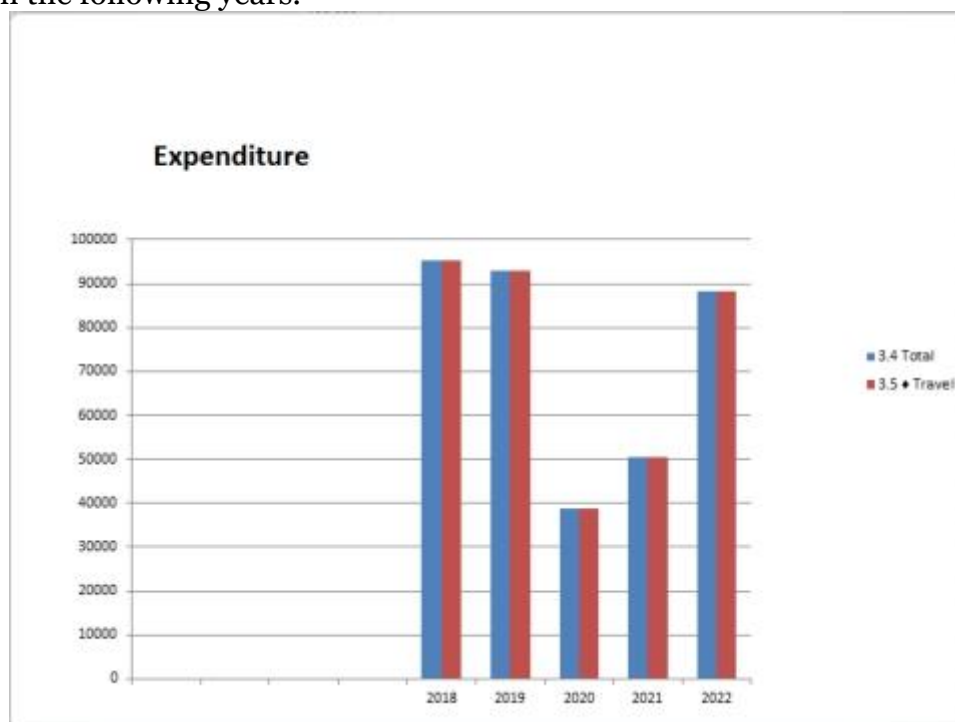
The chart shows travel expenditures in the years from 2018 to 2022, during which time we see a rapid drop in travel expenditure followed by a slow recovery. The most money was spent in 2018 and 2019, nearly 90,000. In 2020, however, it collapsed dramatically, with spending down to a meager 30,000–40,000, probably in reaction to major global disturbances that impacted travel and tourism critically .By 2021, things were looking up and travel spend had recovered to ~50,000 due to the lift in restrictions and people getting comfortable with travel again. The increasing trend continued in 2022, with outlays almost back to pre-decline highs just shy of 90,000

Expenditure by main purpose of the trip
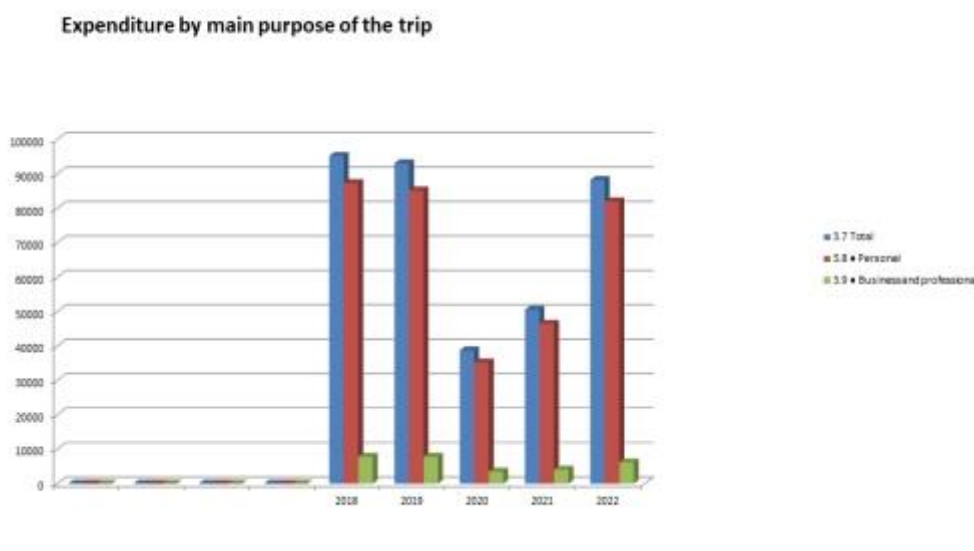
The graph shows Germany's travel spending from 2018 to 2022, broken down into three categories: business, personal, and total travel. Personal travel accounted for the majority of the total expenditure, which peaked in 2018 and 2019. Professional and business travel made up a far smaller portion. However, 2020 saw a sharp decline in travel expenditures, most likely as a result of the COVID-19 pandemic's effects on international travel. A modest recovery was noted by 2021, and although spending remained below pre-pandemic levels, it continued to rise in 2022. Compared to corporate travel, which stayed low but largely consistent, personal travel grew more rapidly. This pattern points to a change in priorities and travel habits following the pandemic.

Domestic Tourism

The data shows that there are notable fluctuations in the number of visitors between 2018 and 2022. And it highlights the impact of COVID-19 on travel trends in the country. In 2018-2019, Germany received a high number of overnight visitors, with figures reaching approximately 150,000 to 160,000. But in 2020, there was a sharp decline to around 100,000 overnight visitors. Following the downturn, the tourism sector in Germany began to recover in 2021 and 2022. The overnight visitors increased to app.130,000-140,000. Overall, the trend illustrates the resilience of Germany's tourism sector which at first suffered a sharp decline but then immediately recovered.

As we can see from the graphs, the number of trips by air and water in Germany experienced fluctuations between 2018 and 2022, the same as graphs largely influenced by pandemics. In 2018 and 2019, air travel was the dominant mode of transport, with 23,626,000 and 23,194,000 trips recorded, respectively. Water travel was lower, with 8,882,000 trips in 2018. But in 2020, both modes of transport saw a sharp decline. Despite all these challenges, the sector began to recover in 2021 and 2022. Air travel reached 6,651,000 while water increased to 4,783,000. Overall, the data shows the impact of a pandemic on Germany's transport sector,especially in air travel, but also recoveries suggested in 2021-2022.
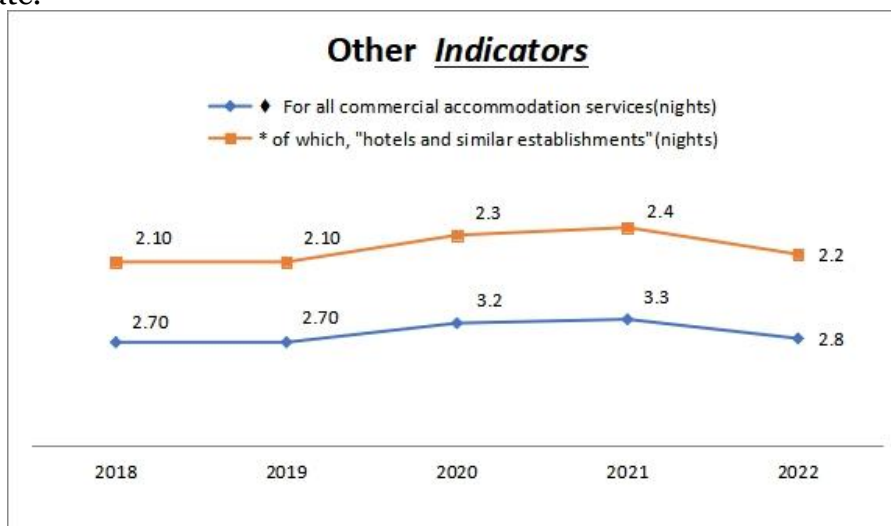
The number of guests and overnight stays in hotels in Germany changed from 2018 to 2022.

In 2018 and 2019, there were many guests: 146 million in 2018 and 151 million in 2019. Overnight stays were also high: 390 million in 2018 and 405 million in 2019. However, in 2020, due to the COVID-19 pandemic, tourism declined. The number of guests fell to 85 million, and overnight stays to 270 million.

In 2021, the situation improved slightly: guests reached 85 million, and overnight stays reached 279 million. In 2022, the recovery was better, and the number of guests reached 134 million, and overnight stays reached 382 million.

In short, the pandemic hit German tourism hard, but in 2022, the situation returned almost to its pre-pandemic state.

The average number of overnight stays in hotels and other accommodation in Germany changed from 2018 to 2022.

In hotels, guests stayed 2.1 nights in 2018 and 2019. This number increased to 2.3 nights in 2020 and 2.4 nights in 2021. However, it decreased slightly in 2022 to 2.2 nights. For all accommodation types, guests stayed 2.7 nights in 2018 and 2019. It increased to 3.2 nights in 2020 and 3.3 nights in 2021. However, it decreased to 2.8 nights in 2022. This shows that during the pandemic (2020–2021), visitors stayed longer, but in 2022 their stay became shorter.

Tourism Industry

Number of establishments

Accommodation for visitors in hotels and similar establishments (monetary data)
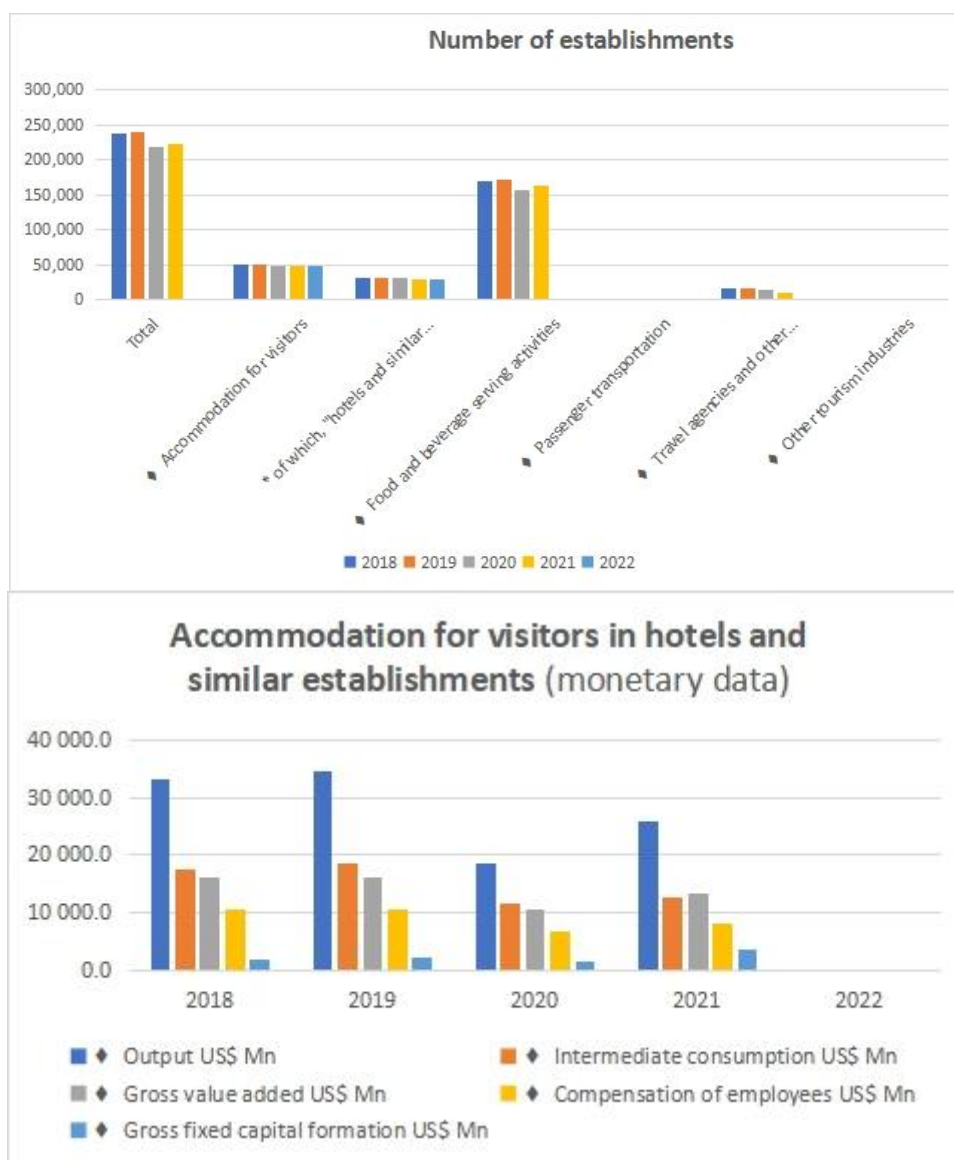
The graphs presented here depict the number of establishments and the financial performance in the accommodation sector in Germany between 2018 and 2022. The first graph depicts the overall number of establishments across the entire tourism sector. After a couple of years of stability, the number decreased slightly in 2020, potentially due to the COVID-19 pandemic. Most of the establishments belonged to the food and beverage sector, while guest accommodation, such as hotels, experienced minimal change over the studied years. The number of establishments in passenger transport, travel agencies, and tour reservations was also lower in aggregate than for other sectors of tourism establishment overall. The second graph outlines the financial data for guest's accommodation including hotels. There is positive yearly financial performance in guest accommodation, with slight peak in 2019 before sharply declining in 2020, perhaps due to the

pandemic. Other measurements including value added, intermediate consumption, fixed investment, and wages all followed similar trends where they declined in 2020 and within a year all financial measurements rebounded in 2021 and 2022. Overall, the data indicate overall losses to German tourism and specifically, guest accommodation in 2020. All financial performance measures recovered in subsequent years but have yet to restore to or exceed 2019 levels.

Accommodation for visitors in hotels and similar establishments (non monetary)

Indicators

These two charts above depict the trends in visitors accommodation in hotels and similar establishments started from 2018 to 2022, and they are mainly focusing on number of establishments, rooms, and bed places also the key occupancy indicators. As we can see the number of establishments remained unchanged over the years, increasing slightly from approximately 5,500

in 2018 to around 6,000 in 2022. And at the same moment the number of rooms grew from about 800,000 in 2018 to nearly 1,000,000 in 2022, and bad places also increased from 1,900,000 to app 22,100,000 in the same period. But we also see a slight deep and it is due to pandemic. And the line graph highlights occupancy trends. The occupancy rate for rooms was around 60% in 2018-2019, but it dropped dramatically around 30%in 2020, however it recovered in 45% in 2022. In all the data explains the impact of pandemic on hospitality sector mainly in 2020 leading sharp decline in occupancy rates. But by 2022 we can see the sign of recovery with increased in accommodation and improving occupancy trends.
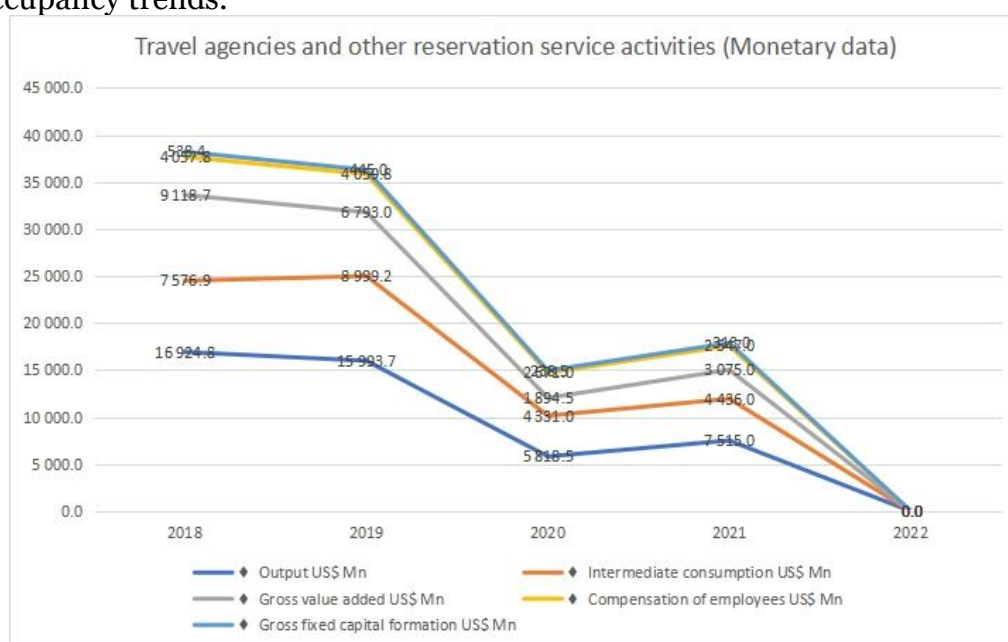

The graph is depicting financial indicators for travel agency and other reservation services from year 2018 to year 2022, which consist of output, intermediate consumption, gross value added, compensation of employees, and gross fixed capital formation. In year 2018, the total output is at 43,594.6, intermediate consumption is at 25,670.0, value added is at 17,924.8, compensation of employees is at 9,116.7, and gross fixed capital formation is at 7,576.9. In year 2019, each of these indicators had a slight drop in values as output is at 40,596.8, intermediate consumption is at 24,603.1, value added is at 15,993.7, compensation of employees is at 6,793.0, and gross fixed capital formation is at 8,990.2. In year 2020, they noticeably fall because of the COVID pandemic, where the values are output is at 9,394.5, intermediate consumption is at 4,894.0, value added is at 4,394.5, compensation of employees is at 5,818.5, and gross fixed capital formation is at 3,276.7. In year 2021, they hold at low indicators, which are output is at 9,036.0, intermediate consumption is at 4,436.0, value added is at 4,600.0, compensation of employees is at 7,515.0, and gross fixed capital formation is at 2,335.0. In year 2022, all values together drops to 0, which may mean that the travel agency and other reservation sectors are completely closed or data is no longer being gathered. The data above illustrates the considerable impact of COVID-19 to the tourism sector seeing that the

tourism sector significantly drop values in year 2020 and did not see any signs of recovery until year 2022.

Complementary index
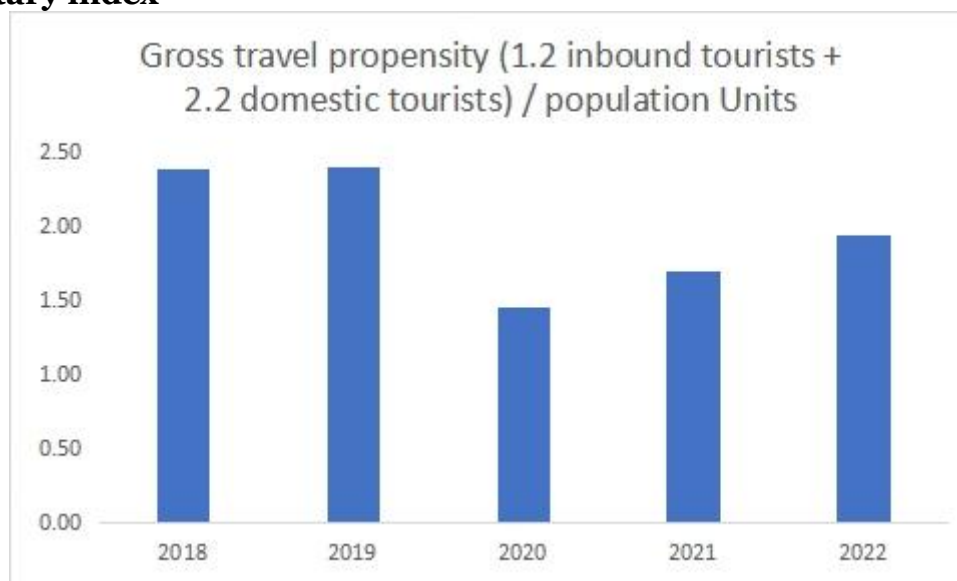
The **given** table **highlights** Gross Travel Propensity, which **gauges** the average trips **(including** domestic and inbound tourism) **made** per **person**. The formula given:

$$\text{Gross Travel Propensity} = \frac{(1.2 \times \text{Inbound Tourists}) + (2.2 \times \text{Domestic Tourists})}{\text{Population}}$$

The **figures** are **stated** in units, **indicating** the **annual** number of trips per person.
The overall travel propensity was consistent in 2018 (2.38) and 2019 (2.40) but experienced a notable drop in 2020 (1.45) because of the COVID-19 pandemic, which heavily limited travel. A partial rebound occurred in 2021 (1.70) and 2022 (1.94), yet the measure has not returned to its levels before the pandemic. The decline in 2020 corresponds with the wider pattern of decreased travel activity observed worldwide because of lockdowns and travel limitations.
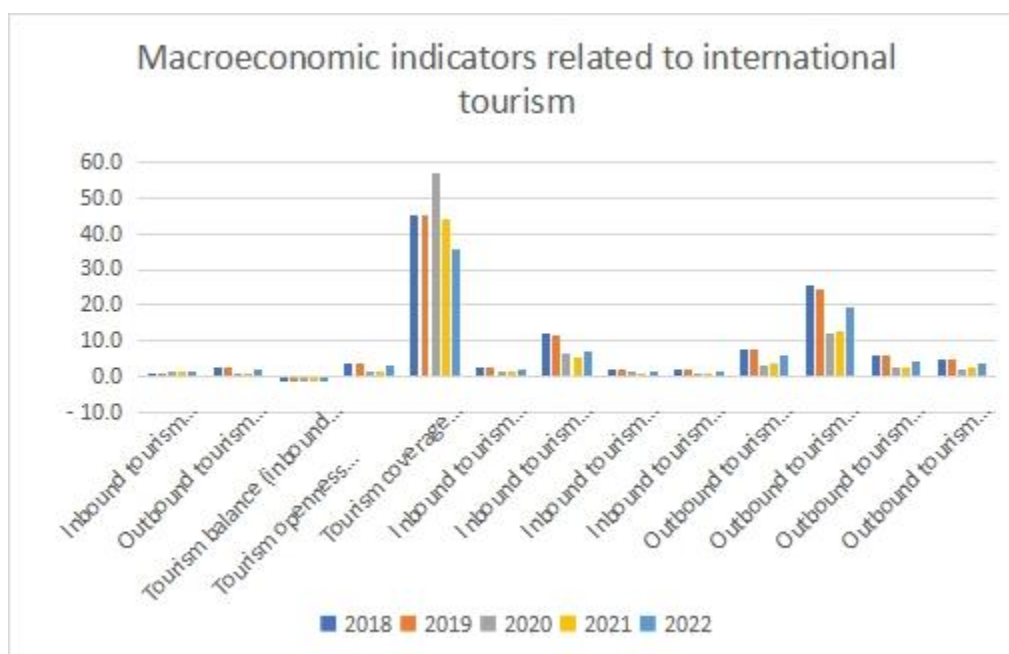
The table displayed outlines macroeconomic metrics associated with international tourism from 2018 to 2022. These indicators are shown as percentages and encompass various facets of inbound and outbound tourism spending in relation to GDP, exports, imports, and other economic factors.

Tourism's Impact on GDP:

The share of inbound tourism spending relative to GDP saw a significant decline in 2020 (0.6%) and 2021 (0.5%), likely due to the effects of the COVID-19 pandemic. There was a partial recovery in 2022 (0.8%), although it remains below the levels observed in 2018-2019 (1.1%).

Outbound tourism expenditure exhibited a similar pattern, experiencing a sharp decline in 2020 (1.0%) and a gradual recovery in 2021 (1.2%) and 2022 (2.2%).

Tourism Balance & Openness:

The tourism balance was consistently negative during this period, indicating that spending on outbound tourism surpassed the income from inbound tourism. The deficit peaked in 2022 at -1.4%. Tourism openness fell during 2020-2021, reflecting restricted international travel, but improved in 2022, reaching 3.0%. The contribution of inbound tourism to the exports of goods and services fell in 2020-2021, reflecting the pandemic's impact on tourism revenue. In 2022, it saw a slight increase to 7.3%. Spending on outbound tourism over imports displayed a similar trend, decreasing in 2020-2021 and experiencing a partial recovery in 2022.

The tourism coverage ratio surged in 2020 (56.9%), indicating a reduction in outbound travel compared to earnings from inbound tourism. It then declined to 43.8% in 2021 and further decreased to 35.4% in 2022, indicating a stronger rebound in outbound travel.

Overall, the information underlines the effects of COVID-19 on the tourism sector, with significant declines observed in 2020-2021 and a gradual recovery noted in 2022. Though inbound tourism

continues to lag behind pre-pandemic figures, outbound tourism is bouncing back more quickly, contributing to an increasing tourism deficit.

Employment
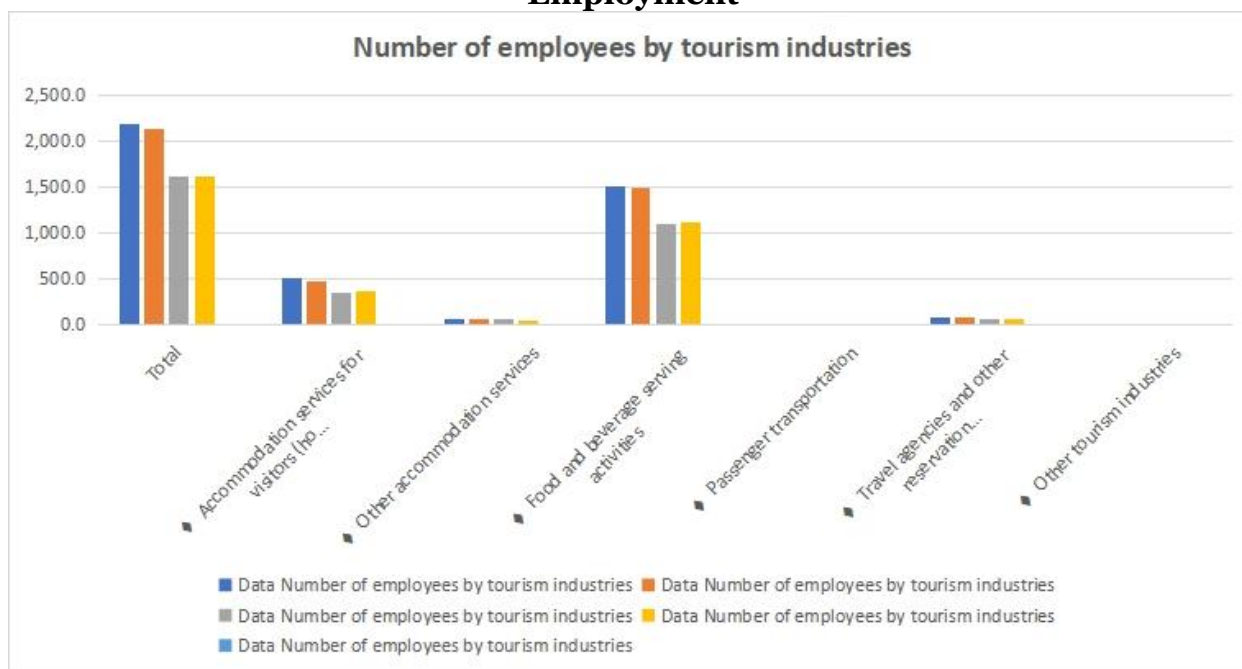
Employment in the tourism industry 2018-2021 has undergone serious changes in the year we can see this in the given statistics. This is due to the impact of Covid-19, which is seen as a cause. For example, in 2018, about 2.2 million people worked in the tourism industry, while in 2020 this figure jumped sharply to 1.6 million. While there was a slight rise in 2021, there was almost no change. According to these trends, it can be seen that the employment system is weak in this area compared to external influences.

Conclusion

Tourism is one of the main sectors of the economy in Germany and has suffered strongly due to COVID-19:in 2020-2021, the number of tourists decreased by 1 million to 11 million. However, 2022 saw a significant increase to almost 28.5 million, but failed to reach pre-pandemic figures. Income from inbound tourism was 41,779 million in 2019-no more than 22mln during the pandemic and beyond, only to exceed 31mln by 2022. This kind of data suggests that tourism is not yet sufficiently tolerant of external influences, and similar global problems can bring the entire industry into crisis. And measures should be taken against it.

It is also necessary to take measures to develop sustainable tourism in the country, reduce the harm of the human factor to nature. To this end, it is necessary to introduce an eco-certification system for business enterprises, to widely establish the use of recyclable goods in the hotel economy.

Recovery from the pandemic is unstable, with foreign tourist expenditure (0.8% of GDP) and jobs (1.6 million in 2020) falling below the level from the before pandemic, despite partial recovery of domestic and foreign tourism in 2022(2022). In political recommendations, the redistribution of the flow of tourists to less familiar areas (the Harz Mountains, Saxony), the introduction of eco-certificates, the widespread use of digital technologies such as VR for objects of cultural heritage can accelerate the revival of tourism in Germany. While the tourism deficit (-1.4% in 2022) remains, but Germany's sustainable, technological and economic strategies are raising the country's potential in restoring tourism.

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