Rostock Cruise Tourism: Local Economic Impact and Customer Satisfaction

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Rostock Cruise Tourism: Local Economic Impact and Customer Satisfaction

Report prepared for

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More information on the Green Cruise Port project can be found at **www.greencruiseport.eu**

Contents

1 Objective and Scope of this Study

This study has two main objectives. The first and most eminent objective is to provide an estimate of the economic impact of the cruise industry in Rostock and Warnemünde. It builds upon the "Common Standards in the measurement of economic effects by cruise tourism" (Kowalczyk *u. a.*, 2017) and suggests a model for conceptualizing and measuring these economic impacts before estimating the actual effects for the cruise season 2018 in Rostock and Warnemünde. Chapter 6 is summarizing the results.

A second objective is to provide reliable and up-to-date information on customer and crew satisfaction with Rostock port (chapter 7).

Both objectives can only be achieved based upon a reliable database. Within this project, we surveyed 1,000 passengers and 300 crew members from cruise ship calling in Rostock and Warnemünde in the season. Chapter 2 describes the survey methodology, including detailed remarks on sampling. Chapter 3 gives some structural information on passengers and crew members.

To assess the economic impact, direct spending from passengers and crew members will not cover the whole picture. Therefore, we also did expert interviews with representative of cruise lines and land agencies. Results are described in chapter 4.

This study profits a lot from the ongoing support from Rostock Port, specifically Mario Lembke, Christian Hardt, and Thomas Biebig. Without the experts from the industry, the results in chapter 4 would not have been possible. Prof. Dr. Martin Benkenstein from Rostock University, who lead-authored three seminal previous studies (Benkenstein, Flöter und Luck, 2012; Benkenstein und Luck, 2013; Benkenstein, Flöter und Hantel, 2015), provided valuable comments. Heiko Wenzel from CPL in Rostock provided valuable comments on port economy. Finally, field work and interviewer coordination as well as data preparing and cleaning was done by Eva Kahrau and her team from HKM in Hamburg. As always, they did a marvellous job. The authoring team would like to thank all those mentioned; without them, this study would not have been possible.

2 Survey methodology

This chapter describes the main methodological aspects of the cruise passenger and crew survey, specifically sampling, data collection, weighting and redressment.

2.1.1 Actual passenger data

In the beginning of October 2018, the following passenger numbers were internally released by Rostock Port (they include the expected passenger numbers in October and December 2018). For later comparison with our sample, only the number of turnaround passengers entering the ship and stop over passengers will be used.

Table 1: Passenger numbers (by October 2018, incl. projection for the whole year)

Passenger segment	Number of passengers	Pax %
Turnaround passengers, entering ship	195,570	42%
Stop over passengers	268,188	58%
Total	**463,758**	**100%**
Turnaround passengers, leaving ship	193,560	

From these roughly 460,000 passengers, Rostock Port claims that 27% came from Germany, 21% from the US, 10% from the UK, 7% from Spain, 5% from Italy, 5% from Canada, 3% from Australia and the remainder, 22%, from other countries around the world.

Furthermore, Rostock port claimed to have 43,000 stopover passengers visiting Berlin individually, and another 52,700 through tour operators. Thus, from all 268,188 stopover passengers, 95,700 (35.7%) have taken a trip to Berlin. Another 52,000 (19.4%) have visited some spot in the state of Mecklenburg-Vorpommern.

2.1.2 Sampling

The sampling scheme shall provide a selection of passengers and crew members, representative for the universe of cruise passengers and crew members in Rostock during the season 2018.

We used a stratified sampling procedure with the ship calls providing the strata. Strata were constructed using quotas derived from the call statistics as published by Rostock Port in the beginning of 2018 (Figure 1).

In 2018, Rostock has 205 cruise ship calls. The number of passengers which can be carried by these 205 ships sums up to 490,394 (we call this figure the “max-pax”). This figure is very close to the 463,758 passengers actually counted in 2018.

Obviously, these ships are not all alike but differ in size (ranging from 296 passengers on P&O’s *Britannia* up to 4,324 passengers on Silver Sea’s *Silver Wind*), type of call (turn around or stop over), prices (low budget to premium), nationality of cruise lines (with the German AIDA alone providing more than 20% of the ship calls). Additionally, in our sampling scheme we observed the days and months of calling (with a peak in August) and the berth in port (with P7 directly at Warnemünde Cruise Center handling the majority of calls and passengers). Some base figures are shown in Table 2 through Table 6.

Table 2: Calls and passengers by ship size, Rostock, planning 2018

Ship size	Calls	Calls%	Max-pax	Max-pax%
Small, up to 1,300 pax	54	26%	50,035	10%
Medium-sized, 1,300 - 2,500 pax	76	37%	169,070	34%
Large, over 2,500 pax	75	37%	271,289	55%

Table 3: Calls and passengers by type of call, Rostock, planning 2018

Type of call	Calls	Calls%	Max-pax	Max-pax%
Full Turn Around	51	25%	119,352	24%
Part Turn Around, part stop over	59	29%	222,583	45%
Full Stop over	95	46%	148,459	30%

Table 4: Calls and passengers by nationality of cruise line, Rostock, planning 2018

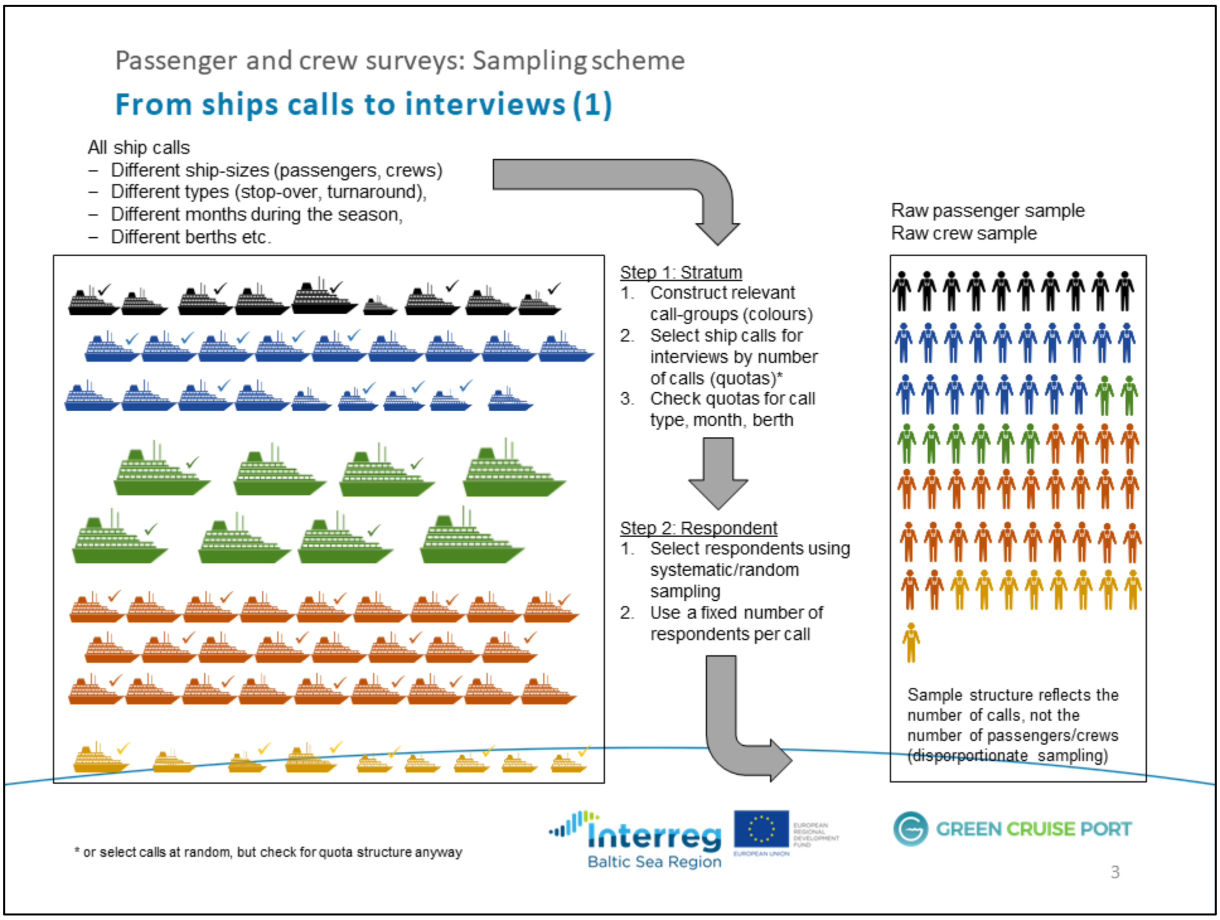
Nationality (headquarter) of cruise line	Calls	Calls%	Max-pax
USA	69	34%	187,339
Germany	48	23%	109,374
Switzerland	39	19%	76,731
UK	21	10%	35,316
Italy	17	8%	64,580
Spain	9	4%	16,452
Others	2	1%	602

Table 5: Calls and passengers by month of call, Rostock, planning 2018

Month of call	Calls	Calls%	Max-pax	Max-pax%
April	6	3%	8,450	2%
May	32	16%	79,960	16%
June	44	21%	110,177	22%
July	37	18%	102,520	21%
August	53	26%	125,967	26%
September	26	13%	51,570	11%
October	4	2%	8,750	2%
December	3	1%	3,000	1%

Table 6: Calls and passengers by berth, Rostock, planning 2018

Berth	Calls	Calls%	Max-pax
LP31 (Überseehafen/Sea port)	23	11%	53,326
LP41 (Überseehafen/Sea port)	1	0%	752
P1-4 (Warnemünde)	5	2%	4,530
P7 (Warnemünde Cruise Center)	113	55%	251,834
P8 (Temporary terminal, tent)	63	31%	179,952



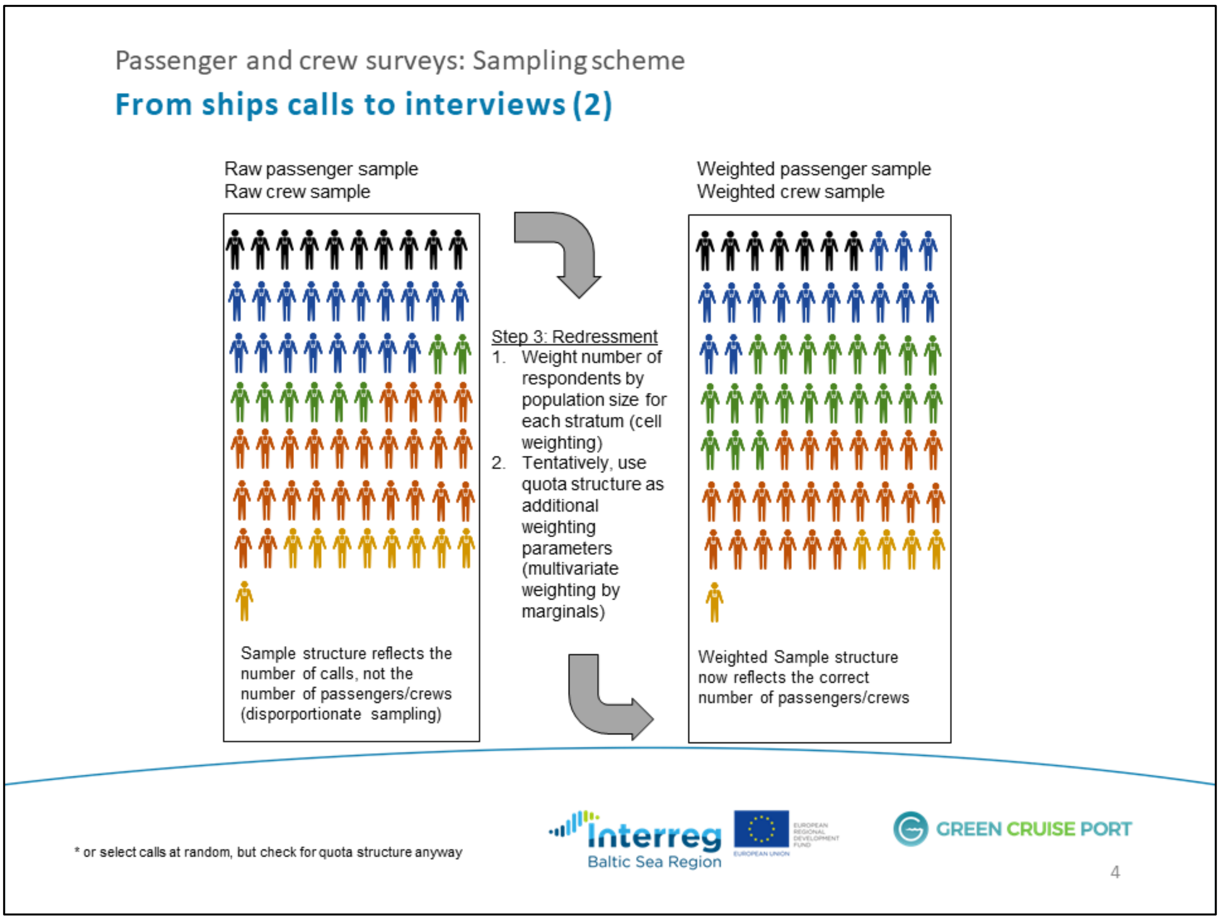


Figure 1:Sampling scheme

From these basic data and the combination of call elements, we constructed seven main groups of ship calls. Within these groups, we selected 50 days to do the interviews, with 2 interviewers per day. Interviewer shifts were planned to be four hours long, with an average of 2.5 interviews per hour. Thus, 50 days x 2 interviewers x 4 hours x 2.5 interviews per hour gave us the planning basis for the target of 1,000 interviews with cruise passengers.

In order to distribute the 50 interviewer days over the available ship calls, we simply used the Calls%-figure and chose the call dates in such a way, that the distribution of berths and months will be met (except that for the months October and December no interviews were planned).

Table 7: Groups of ship calls as a basis for the stratified sample (planning 2018)

Group	Type of call	Berths	Calls	Calls%	Max-pax	Max-pax%
AIDA	Turn around	P7	42	20%	102,900	21%
US lines 1	Stop over	All	41	20%	79,631	16%
Rest	Stop over	All	33	16%	33,512	7%
MSC/COSTA	Partly TA/SO	P7/P8	31	16%	114,875	23%
US lines 2	Partly TA/SO	All	28	14%	107,708	22%
UK lines	Stop over	All	21	10%	35,316	7%
PULLMANTUR	Turn around	LP31	9	4%	16,452	3%

2.1.3 Data collection

Data were collected in face-to-face interviews. Interviewers were briefed intensively and were well acquainted with the study objectives, sampling scheme and questionnaire. Data were directly input into a handheld computer.

- Boarding passengers starting their cruise were interviewed in the terminal up to four hours before check-in closed.
- Stop over passengers were interviewed when returning from their land excursion.
- Crew members were interviewed when returning from their shore leave

Questionnaires were provided in three languages, English, German and Spanish. The English version of the cruise passenger and crew member questionnaires is documented in the annex to this report.

2.1.4 Passenger survey: Design weighting and redressment

As stated above, the sample was drawn based upon the ship calls. Because of the differing number of passengers carried by each ship and the differing number of passengers taking part in a shore excursion (instead of remaining on the ship) and the differing readiness to participate in the interviews, a scheme has to be developed to rectify the sample in terms of planned distortions (design weighting, caused by the disproportional number of interviews per stratum) and random distortions (redressment, caused by differing readiness to participate). Additionally, due to illnesses in the interviewer team, the months of August and September were overrepresented in the sample, while June and July were underrepresented.

For the weighting procedures we used the month of interview (Table 5), the ship segment (Table 7) and the type of passenger (Table 1). Weighting was done through the SPSS raking procedure. When weighting for all three variables, relatively small and big weighting factors result (Min =.11, Max=7.11). When weighting only for ship segment and passenger type, even more extreme factors result (Min=.13, Max=7.77). When weighting only for month and passenger type, weighting factors are more closely around 1 (Min= .44, Max=2.87), but distribution of ship segments gets a bit out of hand. In the end, we decided to use all three variables and rather accept some relatively high or low weighting factors.

Table 8: Weighting overview, passenger survey

Group	Population %	N unweighted	N weighted	N weighted %
April	2%	25	19	2%
May	17%	165	173	17%
June	23%	127	238	23%
July	21%	84	221	21%
August	26%	387	272	26%
September	11%	245	112	11%
AIDA	21%	222	217	21%
US lines 1	16%	202	167	16%
Other	7%	161	70	7%
MSC/COSTA	23%	157	242	23%
US lines 2	22%	143	227	22%
UK lines	7%	107	74	7%
PULLMANTUR	3%	41	35	3%
Turn around, entering ship	42%	445	436	42%
Stop over	58%	588	597	58%

From the sample total of n=1,033 and the population total of 463,758, a projection factor of 448.942 for the weighted sample can be calculated.

2.1.5 Crew survey: Design weighting and redressment

The crew survey was done parallel to the passenger's survey.

We used again the number of crew members and the month for weighting. Type of passenger (turnaround vs. stopover) could not be used here, because we did not ask passengers, but crew members, and some ships combine turn-around and stopover calls.

Resulting weights range between 0.27 and 5.15. An overview is provided in Table 9

Table 9: Weighting overview, crew survey

Group	Population %	N unweighted	N weighted	N weighted %
April	2%	13	5	2%
May	16%	52	51	16%
June	23%	45	71	23%
July	21%	19	65	21%
August	27%	111	82	27%
September	11%	68	35	11%
AIDA	16%	61	50	16%
US lines 1	19%	61	59	19%
Other	9%	51	27	9%
MSC/COSTA	19%	49	60	19%
US lines 2	25%	43	78	25%
UK lines	8%	31	24	8%
PULLMANTUR	3%	12	10	3%
TOTAL	100%	308	308	100%

3 Passenger survey results

The questionnaire covered a number of different aspects. Passenger expenditures (spending) on shore are one of the core elements and are being discussed in chapter 6.2.1. Customer satisfaction with different aspects was the second core element and is being discussed in chapter 0.

In this chapter, we therefore discuss the remaining relevant points.

3.1 Passenger structure

3.1.1 Demographics

The mean age of the passengers in Rostock is 59.0 years, with turn around passengers being considerably younger (55.5 years), and stop over passengers being older (61.6 years). MSC/COSTA ships have the youngest audience (55.4 years), followed by AIDA (56.2 years), while the UK ships have the oldest passengers with a mean age of 64.9 years. During the last ten years, the average passenger age went up by about 3 years.

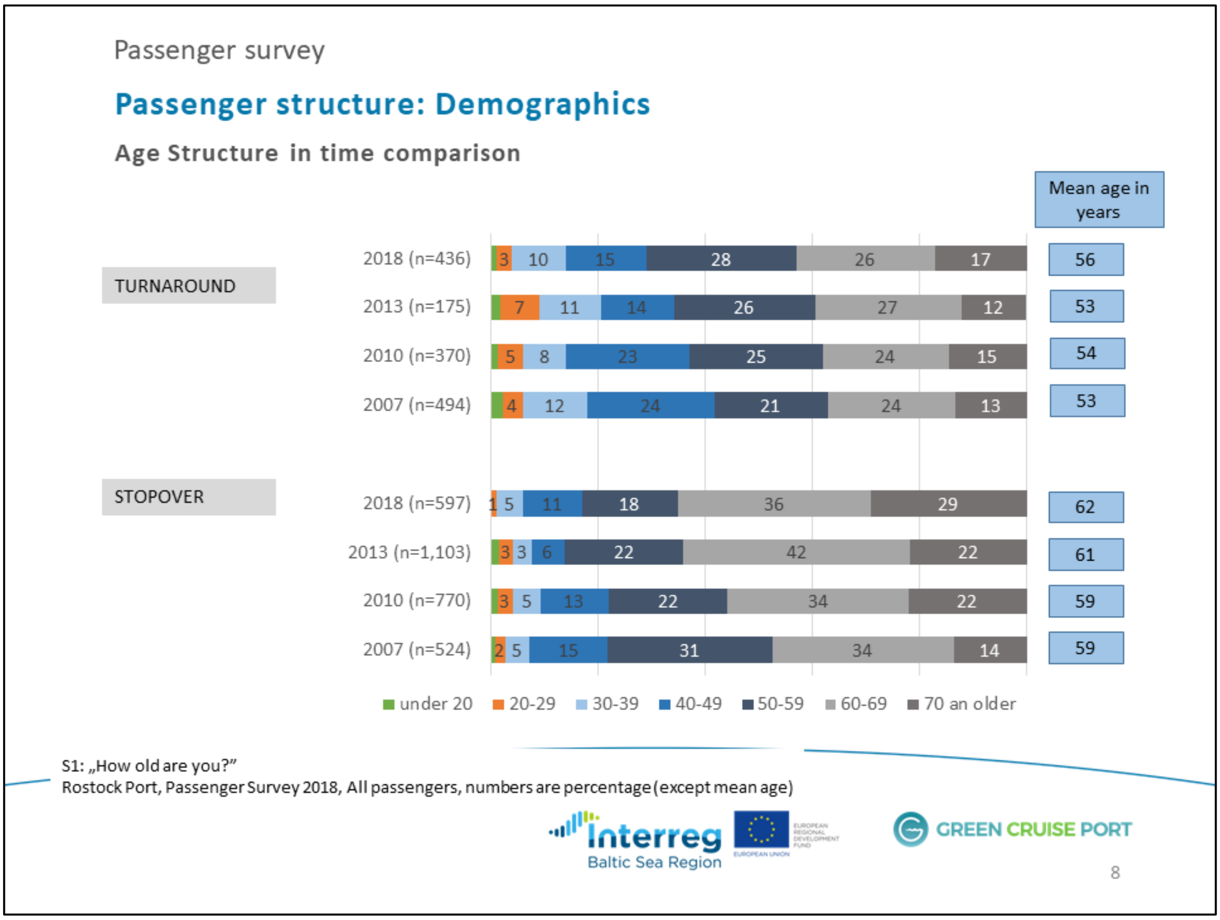


Figure 2: Mean passenger age, 2007-2018

By passenger nationality we see that passengers from Spain are relatively young (47.5 years), while passengers from the US and Canada are on average above 60 (63.3 years). Altogether, female passengers are on average more than four years younger than male passengers (56.7 years vs. 61.0 years). In our sample, 46% of passengers were female, and 54% male. However, in the group of turnaround passengers, 53% were female, while in the group of stopover passengers, only 41% were female.

The place of residence obviously differs significantly between ship segments and types of passengers. While 83% of turnaround passengers live in Germany and only 5% come from the rest of the world (with the remainder living in Europe), among the stop over passengers only 2% live in Germany, while 38% come from the US and Canada and another 21% come from the UK and Ireland. In the aggregated view on all passengers, we can find 36% living in Germany, 30% in the rest of Europe and 35% outside of Europe.

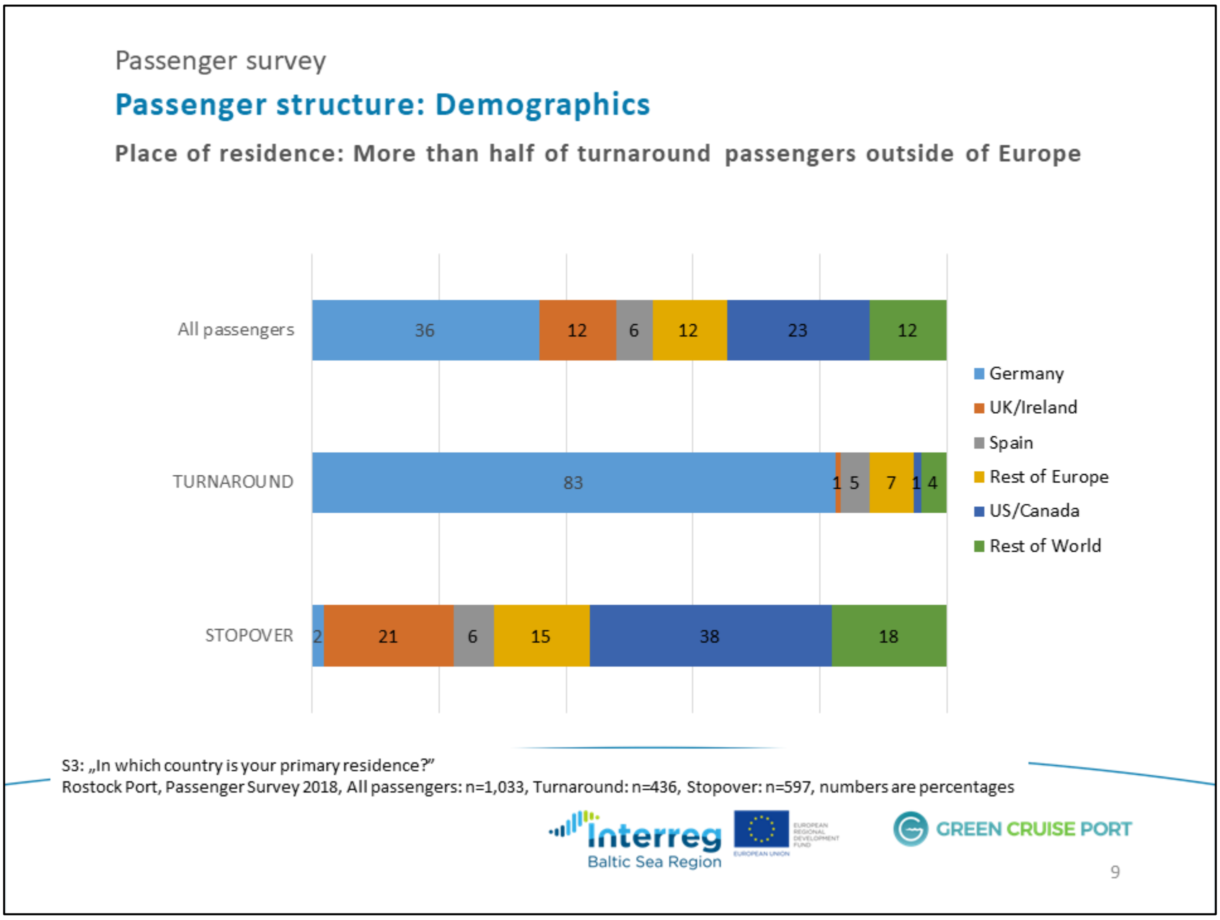
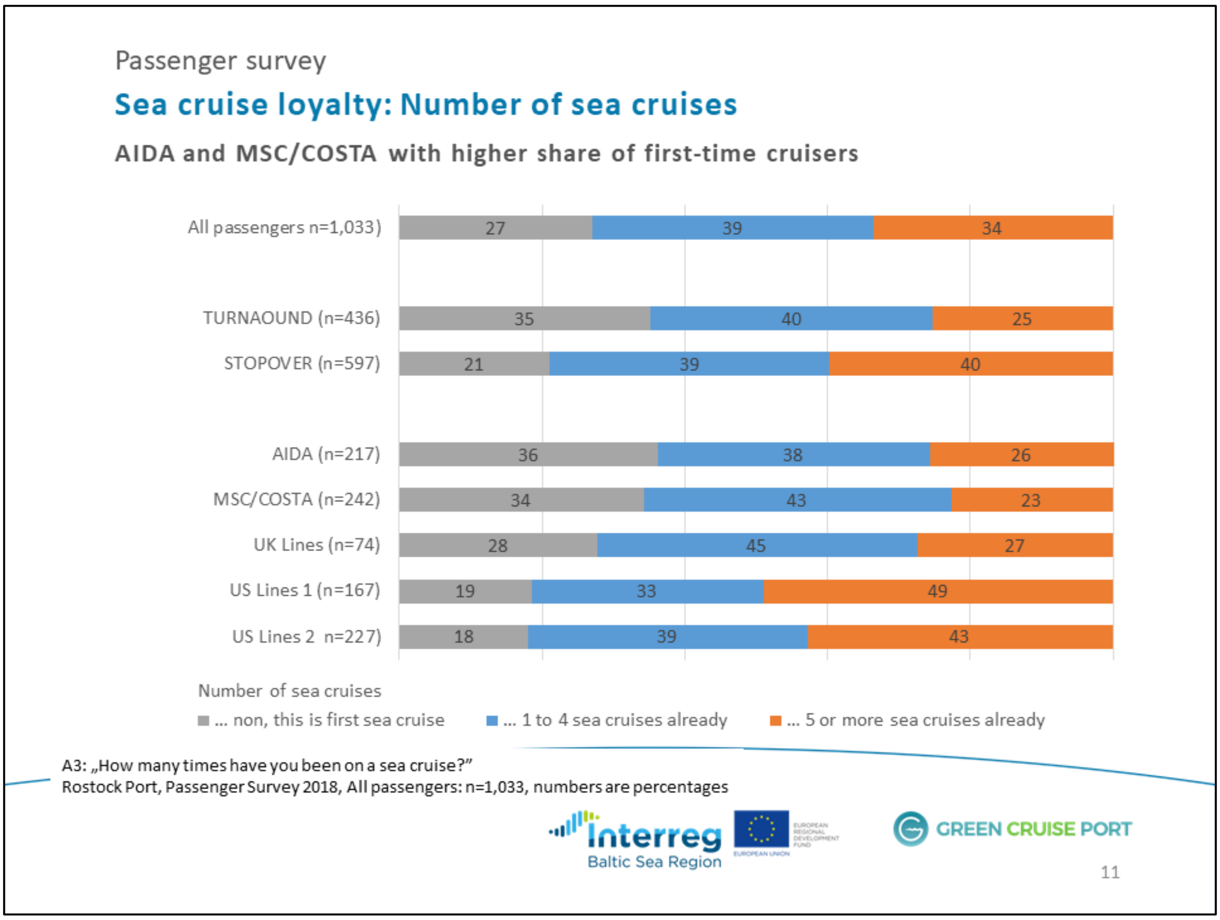


Figure 3: Place of residence structure

3.1.2 Cruise loyalty

The share of passengers doing a first-time cruise is 27%, with 35% among turn around passengers. AIDA passengers even have a higher share of first-time cruisers (36%), and also among the MSC and COSTA passengers, more than a third (34%) is doing a first-time cruise.

Over time, the share of first time cruisers grew somewhat in importance, but not in a way we would have expected for a fast growing market like the cruise industry.



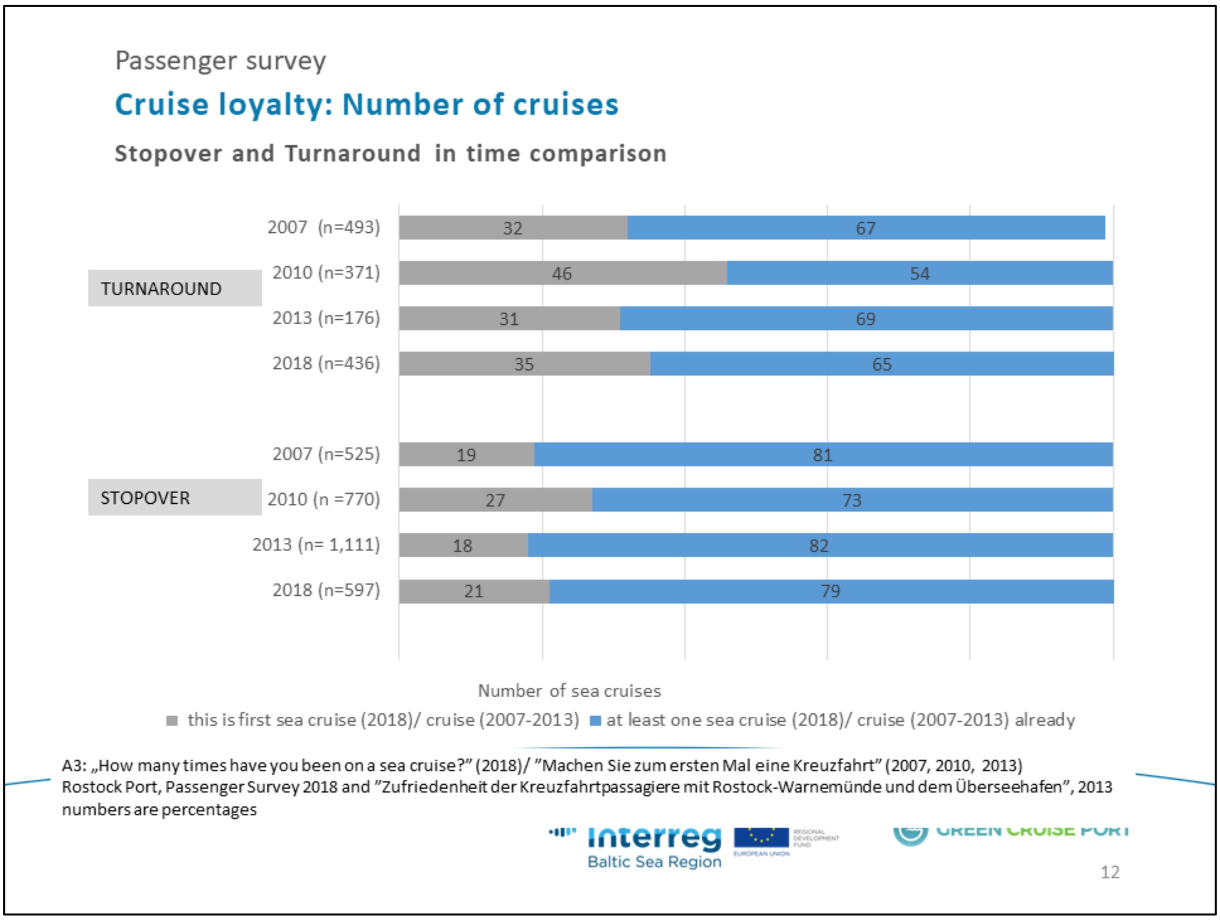


Figure 4: Cruise loyalty

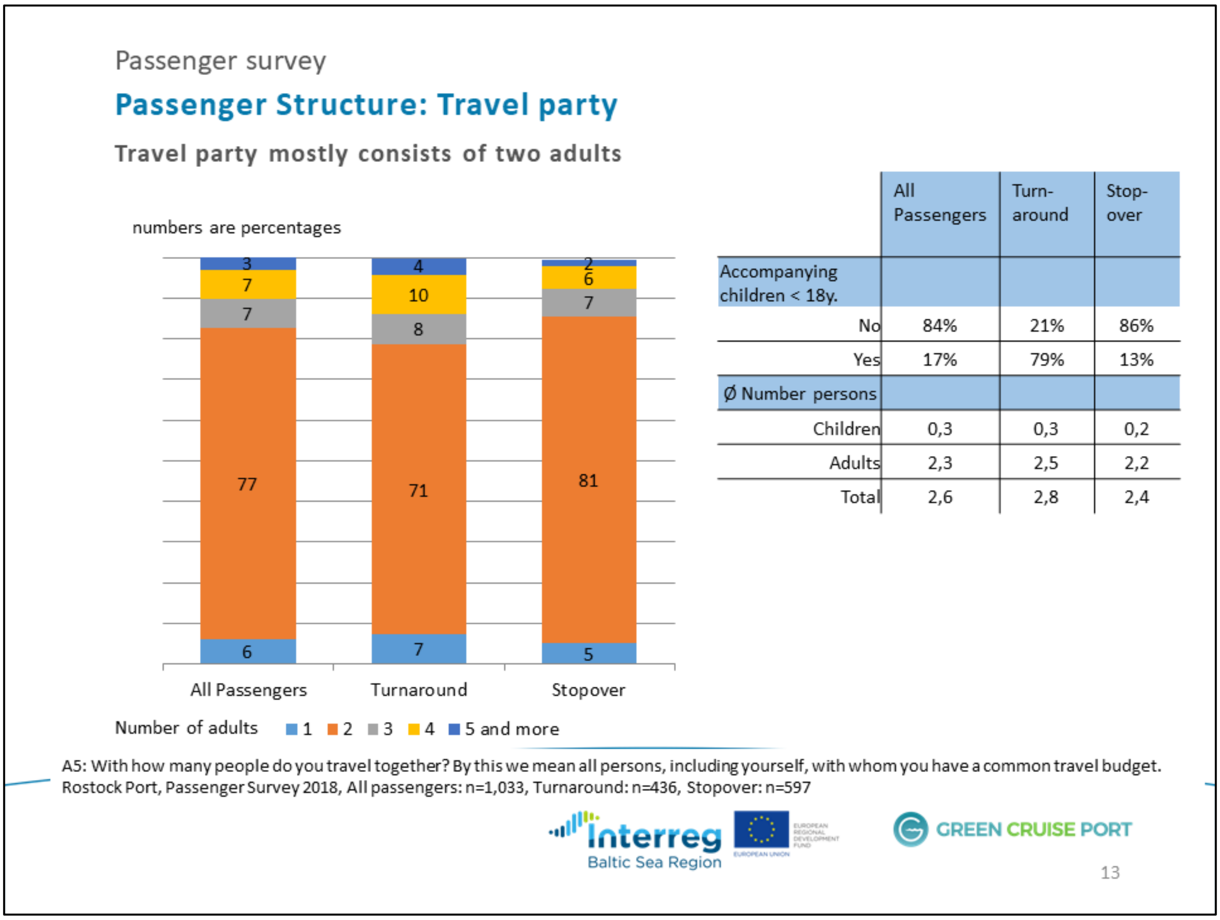
3.1.3 Length of cruise

The average cruise length is 8.5 nights for turn-around passengers leaving Rostock and 12.7 nights for stop over passengers. Passengers living in the US or Canada are even cruising for 13.8 nights on average, while German passengers typically only have 8.2 nights for their cruise.

3.1.4 Travel party

For almost two thirds of the cruises from Rostock (65%), the travel party consists of two adults and no accompanying children. In 17% of all cruises, children below 18 years are part of the travel party.

For turnaround passengers starting in Rostock, the share of travel parties including children is higher (21%) than in the group of stopover passengers (13%).



	All Passengers	Turn-around	Stop-over
Accompanying children < 18y.			
No	84%	21%	86%
Yes	17%	79%	13%
Ø Number persons			
Children	0,3	0,3	0,2
Adults	2,3	2,5	2,2
Total	2,6	2,8	2,4

Figure 5: Travel party

3.2 Cruise destinations

Cruise destinations played a somewhat important role in the questionnaire. We asked for reasons to choose the Baltic as a cruise destination, and within the Baltic for the importance of 17 selected cities. Turnaround passengers were also asked for their preference toward Rostock as a starting point.

3.2.1 Reasons for the Baltic as a cruise destination

Overall, the main reason to choose the Baltic as a cruise destination is "many interesting cities". More than half of all passengers (55%), and even 58% of stopover passengers agree with this statement in a list of nine possible answers.

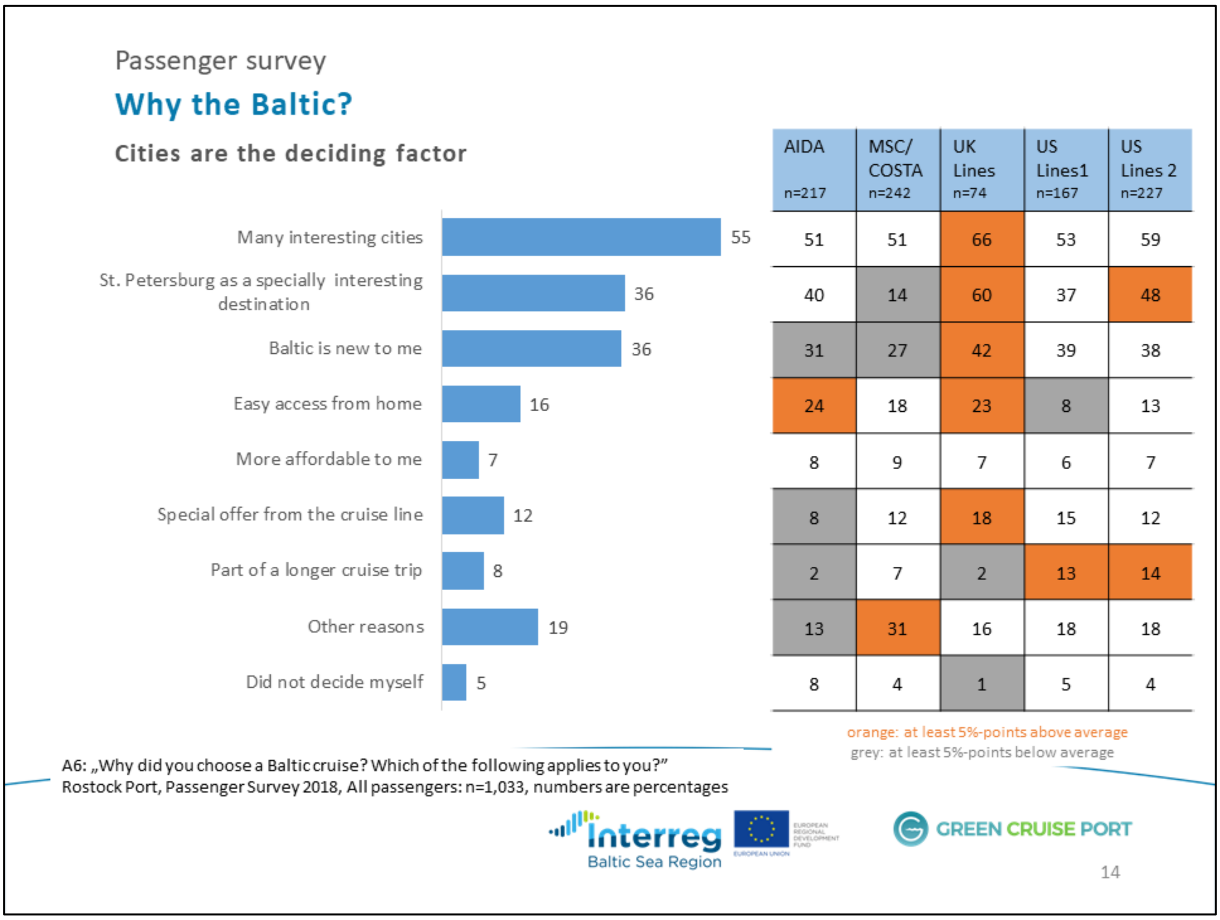


Figure 6: Cities are the deciding factor

It seems that St. Petersburg plays a very important role in this context: 36% of all passengers agree, that St. Petersburg as a "very interesting destination" played a role in their decision. Among stopover passengers, even 43% agreed. Among the guests of UK lines, this share goes up to 60%.

Third in the ranking of reasons to visit the Baltic for a cruise is, that the Baltic "is still new to me": 29% of turnaround passengers and 40% stopover passengers agree to this statement.

More than in five turnaround passengers agree, that the Baltic being "easily accessible from home" is a decision factor for them. Among AIDA passengers, this share goes up to 24%, while among stopover passengers, only 10% agree.

9% of turnaround passengers agreed, that the Baltic is more affordable to them compared to other destinations (stopover: 6%). 10% of turnaround passengers and 14% of stopover passengers said that a special offer by the cruise line played a role for their decision. Among UK line passengers, this share is at 18%.

Altogether, turn around passenger agree to 1.8 answers from the list of nine, stop over passengers to 2.1 answers. 5% say that they did not take the decision themselves (turnaround 7%, stopover 3%), and 19% say, that also other, non-specified reasons played a role for their decision for the Baltic.

3.2.2 Importance of specific cities

We asked, how important specific cities were for the passenger's decision to take the cruise trip. For each city in a list of 17, passengers were asked to state those which were of importance and which not. Additionally, passengers could indicate whether they did not touch this city at all during their current trip.

In this section, we firstly account for the statement "was of importance", regardless whether the city was part of the itinerary or not. This can lead to understating the relative importance of some cities (e.g. Riga was important to those whose cruise trip actually touched the city, but not so many cruises do). Therefore, we secondly also account for the statement "was of importance" only for those passengers who did actually have that city in their itinerary. Likewise, we can identify the cities which are frequently visited vs. those which are less frequently visited on cruises touching Rostock/Warnemünde.

The most visited city is Copenhagen (68% of turnaround passengers and 93% of stopover passengers), followed by St Petersburg (65% and 90%) and Stockholm (67% and 85%). Also, Helsinki (55% and 83%) and Tallinn (52% and 79%) are of high importance. Rostock-Warnemünde ranks sixth (46% and 82%). Specifically, stopover passengers tend to have high visiting rates for the "Big 5" cities (Copenhagen, St. Petersburg, Stockholm, Helsinki and Tallinn), while turnaround passengers have a more dispersed spectrum of destinations in the Baltic.

As a deciding factor, it is still the Big 5 in the lead, but with a different ranking: Here, St. Petersburg comes first (with 85% in the stopover segment), followed by Stockholm and Copenhagen, Helsinki and Tallinn.

When we narrow the question further down into the stated importance as a share of only those passengers who actually visited the city, figures become even higher (Figure 7). Now, St. Petersburg reaches 91% in the turn-around and 94% in the stopover segment, followed by Stockholm (75% and 65%), Helsinki and Copenhagen (61% and 64). Berlin moves into the fifth rank before Tallinn because of the very high rating in the stopover segment: 74% of those stopover passengers actually visiting Berlin rate the German capital to be of high importance for their cruise decision.

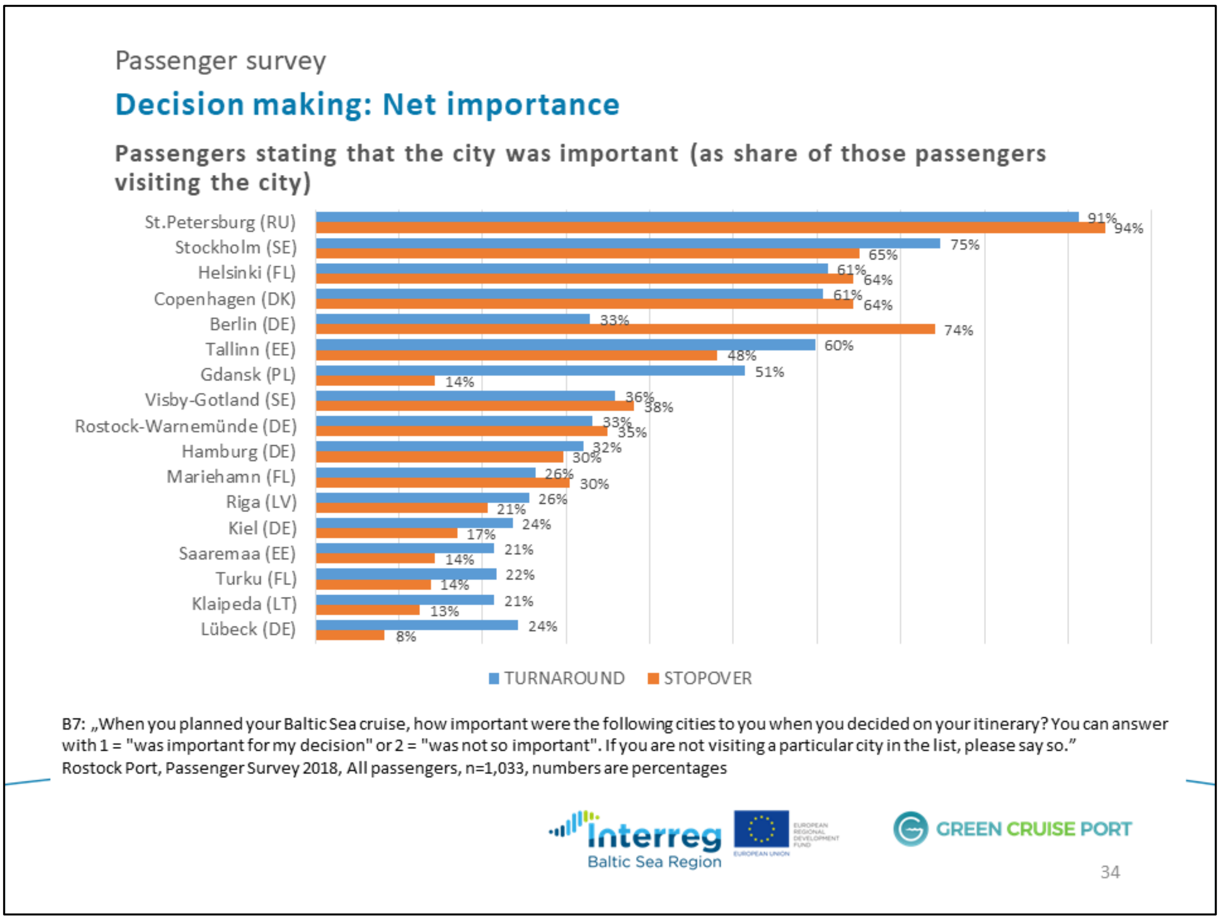


Figure 7: Importance of cities in the Baltic

3.2.3 Rostock as starting point for the cruise (turnaround passengers only)

Turnaround passengers were asked, how important it was for them to start their cruise specifically in Rostock or Warnemünde.

Of course, we only asked passengers actually starting their cruise in Rostock. Therefore, the answer option “not acceptable” was not available. Rather, we checked for the desirability to start the cruise in Rostock by asking, whether this port was “desired”, “acceptable” or whether the choice of the port was not so important (“all the same”).

Among all turnaround passengers, 42% rated Rostock as the desirable port, while for 19% it was only acceptable. 39% answered, that the port was not so important. This means, that about 6 in 10 turnaround passengers do not have a downright preference for Rostock as starting point for their cruise trip. Among AIDA passengers, 45% ranked Rostock as a desirable port, while among Pullmantur guests (mostly coming from Spain), this rate drops to 23%, and the “all the same” portion goes up to 46%.

3.3 Travelling to and from Rostock (turn around passengers only)

We asked passengers which means of transport they used for the longest distance (one answer) and additionally (multiple answers possible). More than half (59%) of the turn-around passengers came by car, 51% drove and parked their car during the cruise, and another 8% were brought by car. 16% came by train, and 14% came by bus. Among these 14%, 11% came by coach and another 3% by long-distance bus. About 7% of turn-around passengers came by plane.

Modal split differs by place of residence. Among the passengers living in Mecklenburg-Vorpommern, almost 80% came by car (46% drove and parked, 33% were brought), while among those living in Baden-Württemberg in the south-western corner of Germany, more than one in three (35%) came by train.

Among those travelling the longest distance by plane, about two in ten also used the train (19%) or a transfer bus (19%), and about one in ten additionally used a long-distance bus (11%), coach (11%), taxi (12%) or were brought by car (10%).

The share of passengers who did not use their favourite means of transport is rather small: About 6% of turn-around passengers had wished to use the train (among those who drove by car, 9%). From these 9%, about a third mentioned price as a barrier, but more than 50% a bad connection or too long travel time. 9% of those who used the train would have preferred to travel by plane, but the main barrier (>90%) to actually choose the plane is price.

About three in four passengers (75%) organised the travel on their own, another 20% used a package from the cruise line, and 5% partly organised themselves and partly used offers from the cruise line (e.g. rail&fly, rail&cruise).

3.4 Stopover programmes (stopover passengers only)

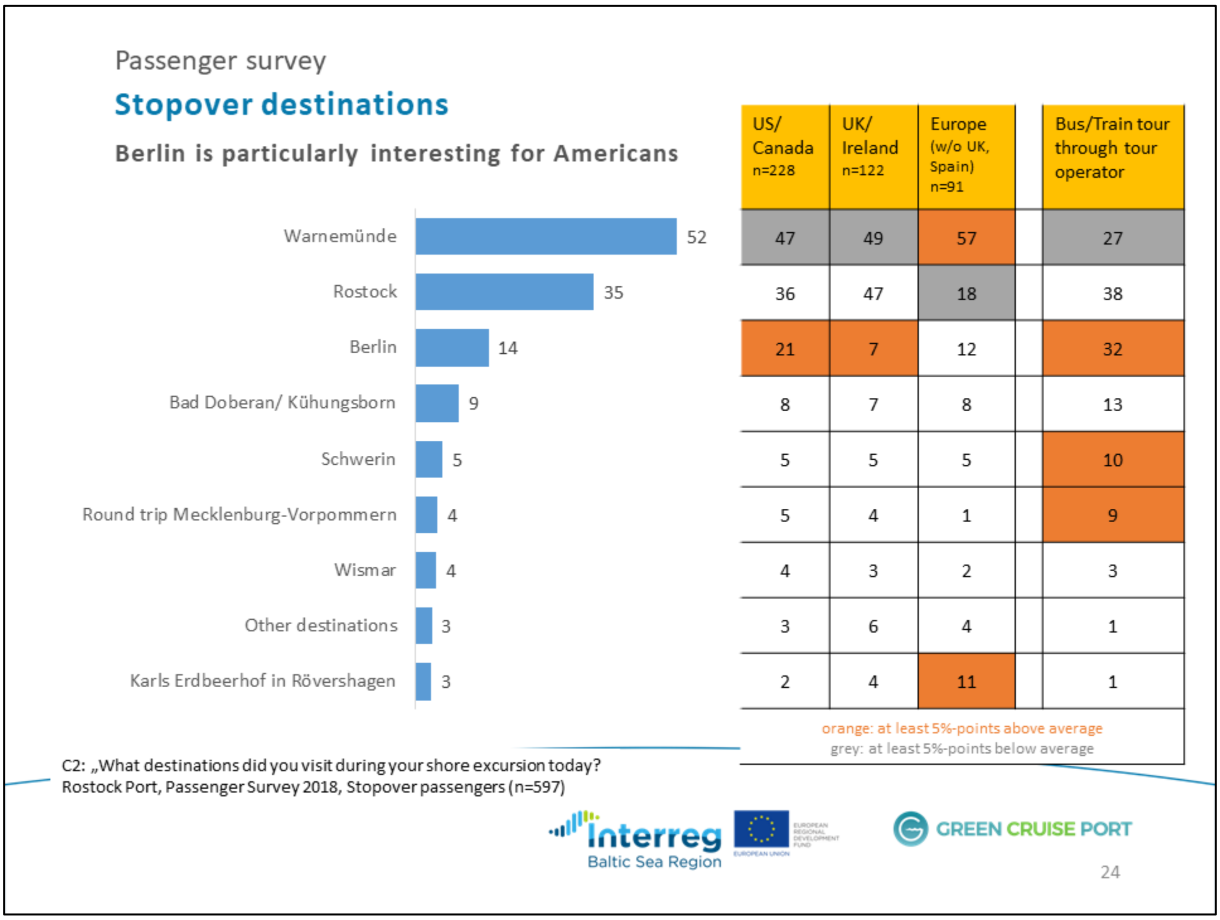
3.4.1 Type of stopover programme

About 45% of stop over passengers have booked a bus or rail tour through their cruise line, another 3% have booked a tour on foot or by bike through the cruise line. So, roughly half of the stop over passengers (48%) going ashore booked a package through the cruise line, while the other 52% did not. Among these, 40% went ashore without having booked anything, while 7% booked a bus tour through local agencies and another 3% booked a tour on foot or by bike through some agency.

Among the passengers from the US and Canada, even 55% booked a bus or rail tour through their cruise line, and only 31% made their shore excursion completely on their own.

3.4.2 Stopover destinations

About 14% of stop over passengers in Rostock went to Berlin, making Germany's capital the most popular destination after Warnemünde (52%) and Rostock (35%). Among those having booked a bus or rail tour through their cruise line, Berlin even has a share of 32%. Residents of the US and Canada have a relatively large interest for Berlin (21%), while residents of the UK and Ireland have a lower interest (7%).



	Total	US/ Canada n=228	UK/ Ireland n=122	Europe (w/o UK, Spain) n=91	Bus/Train tour through tour operator
Warnemünde	52	47	49	57	27
Rostock	35	36	47	18	38
Berlin	14	21	7	12	32
Bad Doberan/ Kühungsborn	9	8	7	8	13
Schwerin	5	5	5	5	10
Round trip Mecklenburg-Vorpommern	4	5	4	1	9
Wismar	4	4	3	2	3
Other destinations	3	3	6	4	1
Karls Erdbeerhof in Rövershagen	3	2	4	11	1

Figure 8: Stopover destinations from Warnemünde

As stated above (chapter 2.1.1), Rostock Port claims different numbers for passengers visiting Berlin (35.7%) and to destinations in Mecklenburg-Vorpommern (19.4%). Rostock Port data come from interviews with land agencies. We cannot identify the actual cause of this difference. Either an overestimate of Berlin visitors in the Rostock Port data or an underestimate in our sample or both are possible.

Table 10: Selected destinations of stopover passengers, weighted sample and Rostock Port data

	Sample	Rostock Port data
To Berlin	14.4%	35.7%
To Mecklenburg-Vorpommern	24.3%	19.4%

4 Crew member survey results

The following results are based upon more than 300 personal interviews in Rostock during the summer 2018.

4.1 Crew member structure

Only 13% of crew members are female, while 87% are male. The mean age is 33 years, the median age (splitting the whole sample into two groups with equal number of interviewees) is at 30 years. Female crew members are somewhat younger (29.4 years) than male crew members (33.6 years).

While 27% of male crew members are 40 years and above, among the female crew members only 7% are in this age group.

The 308 crew members in the survey come from 48 different nations. Most important nations in the crew member structure are the Philippines (31%), Indonesia (15%), and India (13%). Germany is on rank 4 with 8%, followed by Ukraine (7%), Brazil (3%), USA, Serbia, Israel and UK (2%, respectively). All other 38 nations have a share of 1% or below.

4.2 Crew members with shore leave

We asked the crew members for an estimate of how many crew members there are on their ship and how many of them have a shore leave in Rostock/Warnemünde.

Altogether, crew members reported that 50% of all crew members have a shore leave in Rostock/Warnemünde (both mean and median are at 50%). However, some crew members report that (almost) all crew members have a shore leave, while others report, that 10% or less have a shore leave. This proportion differs from ship to ship and also from call date to call date.

4.3 Shore leave destinations

The vast majority of crew members with shore leave went to Warnemünde (78%), another 26% went to Rostock. Altogether, 92% of crew members went to either Warnemünde or Rostock.

The share of crew members going to other destinations is rather limited: Only 2% went to Berlin, less than one percent to Wismar, Hamburg or any other destination on the list. However, 8% reported to have visited other destinations not on the list.

The share of crew members visiting one of the destinations within the state of Mecklenburg-Vorpommern is only 1.4% (n=4).

4.4 Length of stay and activities in Rostock/Warnemünde

The average length of stay in Warnemünde (relevant for 78% of the crew members) is 3.1 hours. However, the median stay is only 2 hours. The reason for this disproportion is that some few crew members spent relatively long time on shore, which moves the mean above the median. For calculating an average spending per hour, the mean (3.1 hours) is the right measurement. To assess the typical length of stay, the median (2 hours) would be the better indicator.

For Rostock (based upon 26% of the crew members), the average length of stay is 3.4 hours, with the median at 3 hours.

Main activity in Rostock and Warnemünde is shopping (68%), followed by sightseeing (25%), and spending time eating and drinking in gastronomy (24%). More than one in ten (11%) spent time on te beach, but only 1% went to a museum, art gallery or exposition, and another 1% took a harbour tour by boat.

5 Industry Surveys

The port industry is of high relevance for the cruise tourism system, both in terms of functionality and economic impact.

In terms of functionality, ports are the points for boarding and unboarding of passengers and crews, but also for bunkering and other ship related services.

A port for turn-around calls of cruise ships primarily needs to have good traffic connection, passenger terminals and broad range of ship related services like bunkering, stevedoring, victualing, pilots etc., while a stopover port would need berths, fresh water supply and bus parking (Werner, 2015, S. 42).

While the services for the ship (bunkering, navigation support etc.), the crews (medical and cultural assistance) and protective services (environmental services, safety and security) are mostly identical between cargo and cruise shipping, services for goods and passengers are of course differing(Werner, 2015, S. 48). The main services, taken from the same source, are:

- Boarding and unboarding/embarkation and disembarkation/check-in and check-out
- Transports within port and to/from tourism destinations
- Services for passengers (parking, luggage, accommodation, food, communication, transport, bank, medical support, tour operators etc.).

In terms of economic impact, obviously all these services (ship services, crew services, protective services, passenger services) can have an economic impact, although neither passengers nor crews pay for them directly. That is why we tried to assess the economic impact through directly addressing relevant players in this area. Previous studies from Rostock University (Benkenstein, Flöter und Luck, 2012; Benkenstein, Flöter und Hantel, 2015) used a similar approach, although with a different focus.

5.1 Methodology

Firstly, we approached the agencies handling ship calls in Rostock and Warnemünde. We managed to have more or less comprehensive interviews with four of the agencies. All four provided valuable insights into the processes of handling a cruise ship at port. However, as to the economic dimension, the agencies can only see a portion of the actual cost involved with a ship call at port. Therefore, we additionally contacted three major cruise lines, and their representatives provided valuable economic figures. In the end, we had average data for a number of ships representing 109 of the 205 calls in the season 2018, plus some additional figures covering agency and handling costs.

Unfortunately, we are not able to relay the names of the persons or companies publicly, because the economic figures involved are of course of a somewhat internal nature. We would therefore like to anonymously thank all interview partners for their assistance in the course of the analysis.

In addition to interviews with agencies and cruise lines, Rostock Port provided their own internal revenue numbers, which are complete figures for all ship calls and of course were included into the estimates below.

5.2 Results

From the industry surveys, we can estimate the average cost per ship call. It must be said, however, that the range of cost incurred for a cruise ship call is rather large. A good example for this is the bunker category. If a ship takes food or fuel in the port, the sums involved will usually be considerable, owed to the pure mass of consumption of a sea-going ship. However, by far not all ships do order at each and every port. Rather, shipping lines tend to order where prices are cheap. As for MGO (marine gasoil), to give an example, it became very clear that cruise lines do not buy primarily in German, because other ports, like St Petersburg, can usually provide MGO at much cheaper prices. Same can be true for other bunker cost. This, however, is true this year, but can change in the next. One agent told us that usually, victualing (specifically food items) is bought somewhere in Europe by the cruise line and delivered to the port by truck. The agent is not involved and only sees that the delivery can take place in time. One other agent told us, that an average Berlin excursion costs about EUR 50 per passenger, but that many passengers do not take these longer excursions due to the relatively high prices in Germany (except for American stopover passengers going to Berlin). Agents told us that the average revenue for the local agent was estimated to be between 3,000 and 10,000 Euros per call, not including the excursion costs and that passenger handling would, on average, incur costs of about EUR 5 per passenger.

Furthermore, some of our interview partners structured their costs differently from others, so that restructuring was necessary. Therefore, the indications in Table 11 must be used with some caution. They are, however, the best estimate we can get. The results represent only the local portion of the total costs.

Table 11: Average cost for a ship call, excluding costs directly paid to the port authority (Rostock Port)

Category	EUR per full turn-around call (estimate)	EUR per full or part stopover call (estimate)
Port fees (pilots)	8,000	8,000
Bunker (victualing, fuel, electricity, fresh water)	10,000	10,000
Cruise services (primarily passenger handling and land excursions)	10,000	45,000
Public dues and other costs	1,000	1,000
Total	29,000	64,000

A large portion of the ship-related cost goes directly to Rostock Port. These charges are publicly available[1]. Table 12 shows the average cost per ship call, summing up to EUR 28,724 in 2018. A split into turn-around and stopover calls is neither necessary nor possible because we simply divided the gross revenue from all cruise ships by the number of all cruise ship calls.

Table 12: Revenue structure from cruise shipping at Rostock Port (2018)

Category	EUR per call (average)
Port fees, including berthing (Hafengeld, Kaigeld, Liegegeld), mooring (Los- und Festmachen) and other related services	21,536
Bunker, only waste disposal	1,744
Cruise services, including security fee and land use	5,444
Public dues	0
Total	28,724

[1] Regulations and Charges for the use of ROSTOCK PORT's harbour accessible to public traffic and of the passenger quay in Warnemünde / Neuer Strom

6 Local Economic Impact

In this section we firstly discuss the literature review and specifically the "Common Standards" paper published in 2017, before we go on to build our own model and report on empirical results and impact estimates for Rostock/Warnemünde.

6.1 Literature Review and Evaluation

Within the framework of the GREEN CRUISE PORT project, a study on "Common Standards in the measurement of economic effects by cruise tourism" has been prepared by the Maritime Institute in Gdansk (Kowalczyk *u. a.*, 2017). We refer mostly to this study, because

a) it is the most recent study on the topic available, except industry reports which appear on a yearly basis,
b) it has specifically been designed to serve as a blueprint for the methodology to be applied in this study and therefore
c) it is part of this study to evaluate the "Common Standards" in terms of practicability and implementation.

However, there are many other studies on the topic, some of them cited in the "common standards" paper, some not, with the following list showing only a selection of the more relevant publications from the last 20 years (Dwyer und Forsyth, 1998; Braun, Xander und White, 2002; Chase und Alon, 2002; Gabe *u. a.*, 2003; McKee und Chase, 2003; Dwyer, Douglas und Livaic, 2004; Gibson und Bentley, 2007; Martin Associates, 2007; Seidl, Guiliano und Pratt, 2007; Policy Research Corporation, 2009; Pratt und Blake, 2009; Andriotis und Agiomirgianakis, 2010; Brida und Zapata, 2010a, 2010b; Dragin, Jovičći und Bošković, 2010; Bayar Cağlak, Aydin und Alkan, 2011; Lekakou, Vaggelas und Stefanidaki, 2011; Hoogkamer, 2013; Larsen *u. a.*, 2013; Papadopoulou und Sambracos, 2014; Wild, 2014; Moody, 2015; Thomas, 2015; Werner, 2015; GP Wild International und BREA Business Research Economic Advisors, 2016; Vayá *u. a.*, 2016; Whyte, 2016; BREA Business Research Economic Advisors, 2016, 2017; Chang, Park, *u. a.*, 2016; Holst und Wolf, 2017).

The main results from the "Common standards" study are:

- The local economic impact of the cruise industry comes from spending of passengers, crews and ship expenditures (p. 4)
- The direct spending serves as input data for multiplier estimates and derived downstream effects like jobs and tax spending
- The on-shore spending categories to be looked at are defined as: F&B and entertainment, tours and ground transportation, retail goods, accommodation, other spending (referring to a study commissioned by the City of Tallinn, 2014, see p. 70, which goes back to studies by G.P. Wild for CLIA, see p. 42).

Although the Common Standards-study is a very useful collection of good and best practices on the topic, it also has some back draws:

– The authors take only the spending-based methodology into account without even discussing alternative methods. Among these, the tourism satellite account (TSA) would be the most important (UNWTO World Tourism Organisation, 1999; Frechtling, 2010; United Nations *u. a.*, 2010).

- The spending categories referred to above are somewhat incomplete (because e.g. accommodation is missing in the original list) and the combination seems to be somewhat eclectic, because in terms of spending behaviour and economic impact, F&B and entertainment or tours and ground transportation are very different kinds of economic sectors.
- A coherent model of how to assess the economic impact in cruise ports is only inherently included in the study. The authors do not provide their own model based upon material gathered, but rather refer to existing models, e.g., the one proposed by Breitzmann et al. (2000).
- Although the study refers to *Common Standards*, the examples referred to have not at all been adopted as common. They rather remain a collection of examples. An adoption process, which would make the examples a standard, has not yet taken place.

Owing to the described properties of the study, we suggest our own model and fill it with actual data on the port of Rostock in the two subsequent chapters.

6.2 The Model

From the previous work discussed in the literature review, we have developed our own model of the local economic impact of the cruise industry. It is split into two parts, a spending side and an effect side.

6.2.1 Spending side

On the spending side (Figure 9), we take passenger spending as the basis for all economic impacts which can arise. It is important to note, that for the assessment of the local economic impact, obviously only the local fraction of any spending is relevant.

Thus, it is important to differentiate between the local and the external fraction of the passenger's spending. For onshore spending of passengers or crews, this is relatively straightforward: Money spent locally is considered. Same goes for part of the ship operation costs: Passenger handling in the local terminal is obviously a local expenditure and shall be considered.

When it comes, however, to bunker costs, the situation is much less clear. If e.g. victualing is provided by some external firm and delivered to the ship with a refrigerated lorry, it can probably not be considered. Same reasoning goes for travel to and from the destination: If an air transport ticket is bought and paid outside the regional scope of the analysis, it can neither be considered nor can it be ignored, because obviously the local airport can profit from the aircraft landing and starting there.

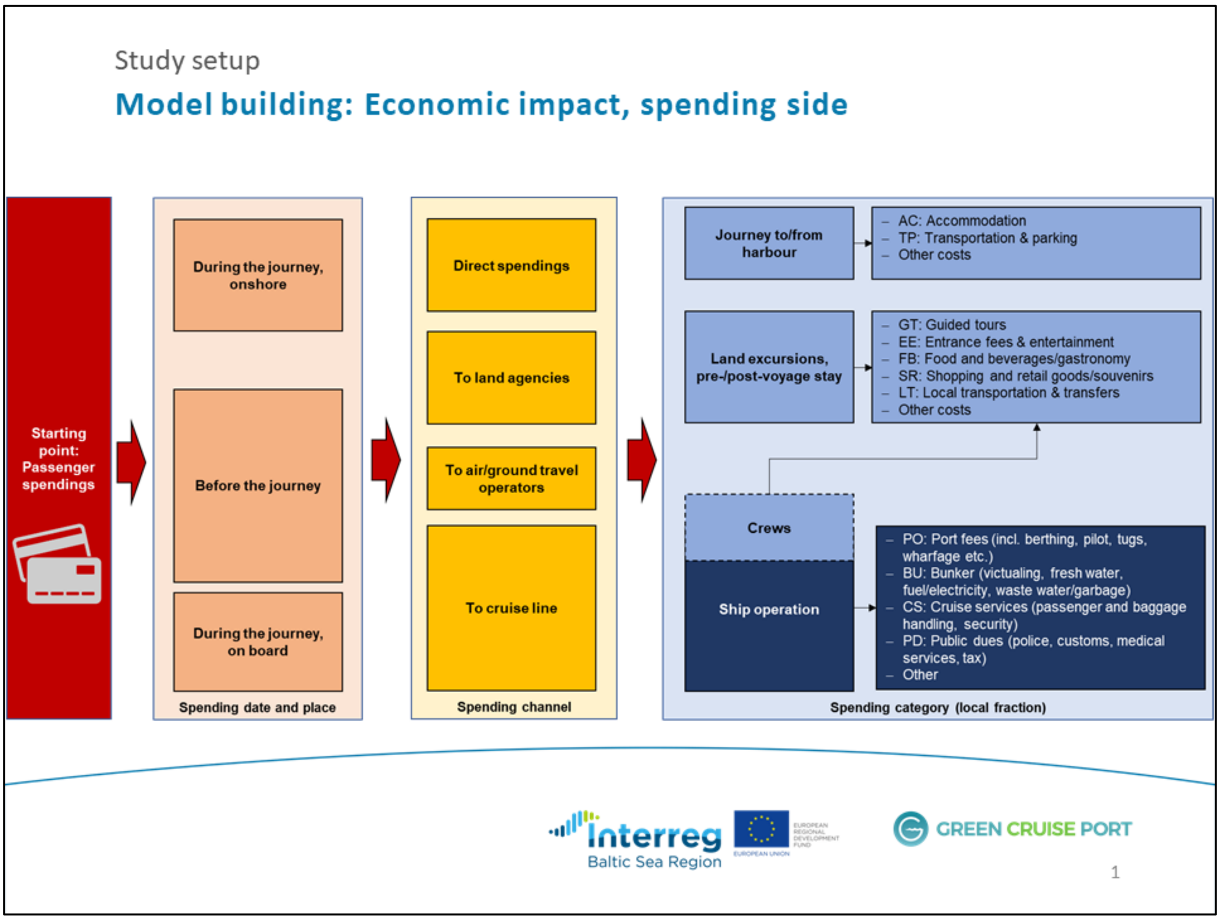


Figure 9: Local economic impact of the cruise industry: Spending side

Firstly, we can differentiate between the place and time of spending:

- **Before the journey**, passengers usually pay the travel price to the cruise line and possibly tickets for air or ground travel to and from the port, if not included in the travel price
- **During the journey, on board** spending can be made for additional food and beverages, shopping on board, entertainment on board, land excursions etc. All spending on board will typically be collected or at least controlled by the cruise line.
- **During the journey, onshore** spending typically occurs while on land excursions and possibly for some costs related to the travel to and from the port, e.g. parking fees and cost for accommodation.

Passenger spending can basically use four channels:

- **Direct spending** is typically occurring for onshore spending, i.e. the money spent by passengers directly while ashore during land excursions,
- **Land agencies** usually act on behalf of the cruise line (and thus receive their payments from there), but can also be payed directly by the passenger (e.g. for self-booked land excursions)
- **Air/ground travel operators** receive their payments either through the cruise line (in the case of travel packages or special arrangements like rail&fly or rail&cruise) or from the passenger directly (for self-organised travel). For travel by car, typically no travel operator is involved.
- **Cruise lines** typically collect the lion’s share of the passenger spending, basically for the travel price, but also for travel packages and spending on board.

As opposed to other authors (e.g. Vayá *u. a.*, 2016, S. 9), we have added the air and ground travel operators to the three more traditional channels (passengers directly, crews, cruise lines), because travel to and from the port can contribute to the economic impact of the cruise industry. In the case of the airport Rostock-Laage, a press article in September 2017[2] reported 92,000 cruise passengers at the airport with a passenger total of 291,000[3] – thus, cruise passengers account for almost a third of all passengers at this airport.

The money going through one of the channels described above will be spent on one the following locally relevant categories:

- **Journey to and from the harbour** (for turnaround passengers only): Part of the transportation costs and, in case of car travel, parking costs become locally relevant. In case of a pre- or post-voyage stay, also cost for accommodation can become relevant.
- **Land excursions**: Spending categories are guided tours, costs for entrance fees and entertainment, food and beverages, shopping and local transportation. In the case of land excursion packages, spending categories will be partly undiscernible for the passenger.
- **Ship operation**: These costs include several subcategories
    - port fees e.g. harbour dues, waste residues - fees (excl. food waste), food waste disposal (non-compulsory), wharfage, mooring/unmooring (incl. surcharges), pilotage, towage (incl. surcharges), agency fees, German Seamen's Mission, various petties, waste disposal fee for add period and fees for HIS (harbour information system)
    - bunker, e.g. victualing, fresh water, fuel/electricity
    - cruise services, e.g. passenger and baggage handling, security
    - public dues, e.g. police, customs, medical services, tax
- A special role might be seen in the cost for **crews**, because a fraction of the salaries and wages can become locally relevant in the case that crew members spend money during their shore leave.

For the spending of turnaround passengers, transit passengers and crews on land visiting selected Baltic ports, Moody (2015, S. 5) gives an estimate of average expenditures per visit with

- EUR 167 for turnaround passengers (including EUR 69 for accommodation)
- EUR 79 for transit passengers
- EUR 24 for crew members.

Unfortunately, his report does not state exactly which spending are covered by the figures cited above. It can be assumed, however, that only direct spending during the journey onshore are included. It should be additionally noted, that spending indicated are per visit, not per day.

As to the distribution of spending channels, it can be assumed that the lion's share of passenger's expenditures goes to the cruise line. When it comes to the local impact, however, studies show that

[2] „Airport legt im Kreuzfahrt-Geschäft zu", Ostsee-Zeitung online, 17.9.2017, http://www.ostsee-zeitung.de/Mecklenburg/Rostock/Airport-legt-im-Kreuzfahrt-Geschaeft-zu, retrieved March 2018

[3] Verkehrszahlen Flughafen Rostock-Laage, http://www.rostock-airport.de/files/flughafen/downloads/verkehrsdaten-flughafen-rostock-laage.pdf, retrieved March 2018

the majority of local spending comes from the passengers directly, as in this example for Barcelona 2014 (Vayá *u. a.*, 2016, S. 17):

- Cruise passengers: 71%
- Crew: 1%
- Shipping companies: 27%.

Assessing (measuring) the spending requires a differentiated approach:

- Direct spending during the journey onshore by passengers can be assessed through passenger surveys
- Direct spending during the journey onshore by crew members can be assessed through crew surveys
- All indirect spending can be assessed through industry surveys addressing all those agents receiving payments from the passengers directly or, more typically, through the cruise lines.

This approach is reflected in the empirical setup of this study.

6.2.2 Effect side

On the effect side, we can start with the three main spending categories from the spending side (Figure 10). The local fraction of the sum of these spending makes the gross turnover, which has to be reduced by the included VAT. The reason is that Germany, as practically all other European countries and beyond, has a system of value added tax on input ("Vorsteuer"), so that VAT paid by the consumer will not lead to any immediate local income effects.

A part of the net turnover (i.e. the gross turnover minus VAT) will become local income. That is the part which is not being used for importing goods and services or put aside for savings. A part of this local income on the first level will be used for consumption, another part, however, will be used to buy (local) goods and services needed to produce the original good or service. This will start a second round of local income generation from goods and services, which again will use local goods and services to tart a third round, and so on.

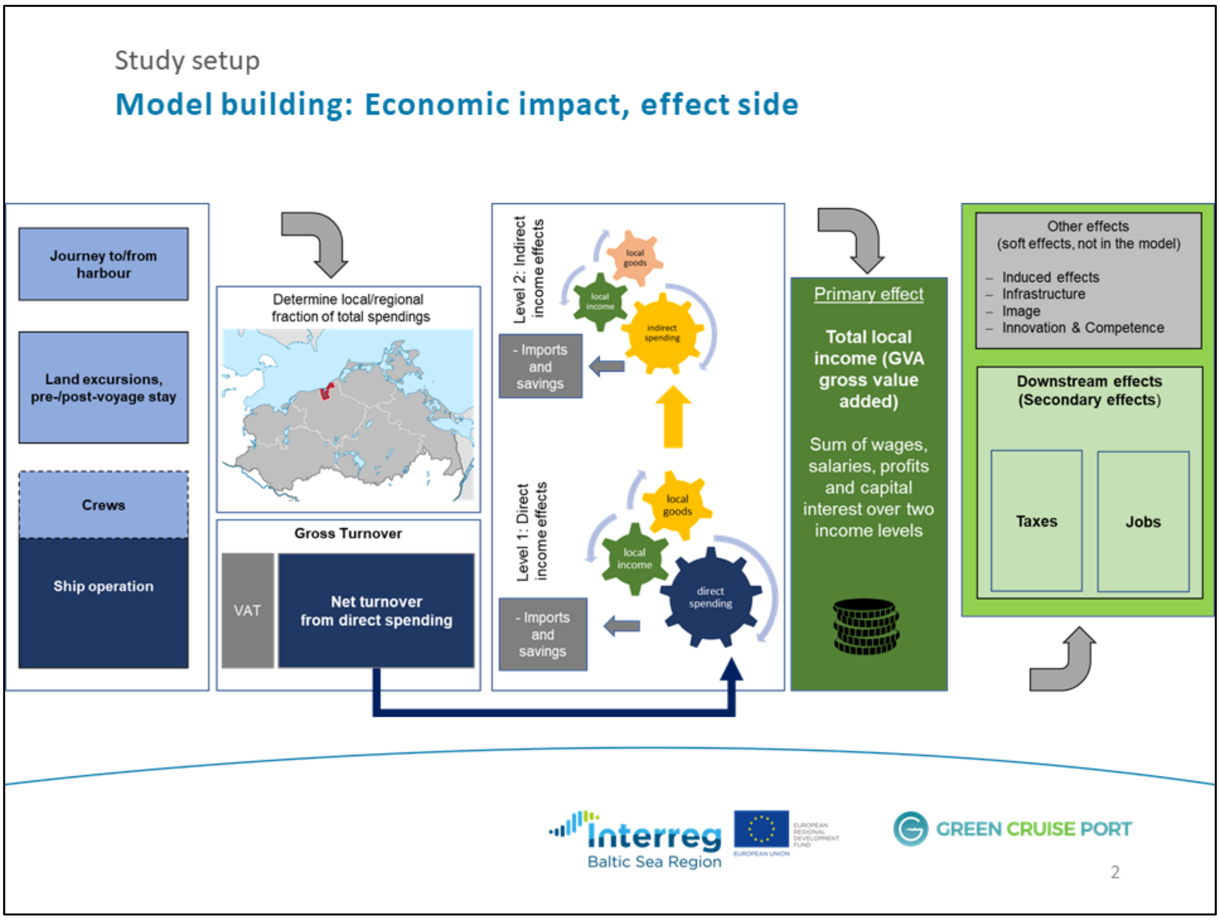


Figure 10: Local economic impact of the cruise industry: Effect side

Thomas (2015, S. 14) describes this multiplier effect in a quite demonstrative way: “The regional economic impact of tourism expenditure is generally greater than the direct spend of tourists. The process by which this happens can best be explained by use of an example (see the figure below). If a visitor spends money that has been earned outside the region at a local grocery store (say $100 – often termed the *direct expenditure*), the store-owner (and hence the region) earns an extra $100 in income. The owner of the store may put aside some money for savings/profit (say $10) and for taxation (say $20). He/she may also spend money importing stock from overseas (say $30), and may spend the rest on fresh produce from the local gardener (say $40 – often termed *indirect* or knock-on *expenditure*). So the gardener (and hence the region) earns an extra $40 in income. The economic impact of the tourist expenditure is thus greater than just the $100 spent: it is equal to the $100 earned by the grocer, plus the $40 earned by the gardener – and if the gardener spends more locally, then the impact will be larger still. To generate estimates of the (regional) economic impact of particular types of tourism, one thus needs information about tourist expenditure and about the spending patterns of regional business operators and residents – formally, one needs to determine the proportion of tourist expenditure re-spent locally (to calculate regional *multipliers*).”

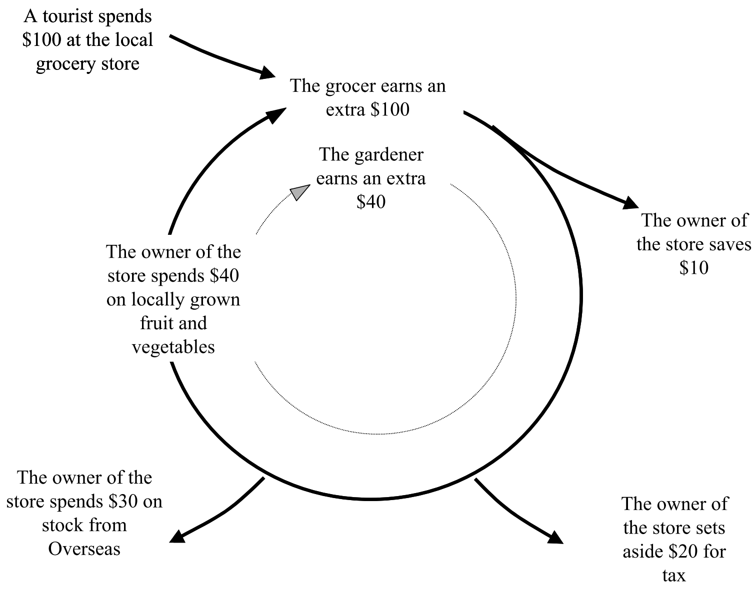


Figure 11: The 'multiplier' effect: how tourist spending generates extra regional benefit (Thomas, 2015, S. 16)

The sum of all local incomes over the various multiplier rounds adds up to the total local income (or GVA, gross value added). For reasons of data availability, we do only take the first two rounds into account, because the distribution of local income and import/savings fractions has to be assessed by a multiplier factor for each round separately, and for tourism in Germany we have only factors for the first two rounds available (Harrer und Scherr, 2010, 2013).

The total local income does not only include wages and salaries, but also profits and capital interests. While these local incomes serve primarily to sustain the local economic circle (they “keep the economy running”), there are also downstream effects relevant for the destination as a whole. One of them is a tax effect, showing that the community will profit from tourism expenditures by their share of VAT, but also income tax and consumption taxes. Furthermore, a job effect can be shown. The job effect is expressed in full time equivalent units and is calculated by dividing the total local income by the average income for a fulltime employee.

In addition to the direct and indirect economic effects, there are more effects to be expected from the economic activity of the cruise industry. The most notable are (Grimm *u. a.*, 2018, S. 5):

- **Induced effects**, describing the local effects of income generated in one of the many rounds described inducing further economic activity. Example: Part of the salary of an employee in a restaurant will be spent for the local housing market, thus inducing further activity by the landlord.
- **Infrastructure effects** : Additional infrastructure as well as its dimensioning and maintenance, which also benefits the destination itself
- **Image effects**, such as the visibility of the destination as a harbour town and attractive destination
- **Innovation & competence effects**: The cruise industry adds innovative competence aspects to the local industry e.g. through ship building facilities or port handling competencies.

In addition to the positive effects described so far, there is obviously also a risk of negative effects for the destination. One of them are immissions from port operations (like noise, exhaust fumes, traffic to and from the port etc .), another could be crowding from visitors, as described in a separate report within the Green Cruise Port project (Grimm *u. a.*, 2018).

6.3 Local Economic Impact in Rostock

6.3.1 Previous results

In 2012, Rostock University estimated the economic effects of ferry and cruise tourism in Rostock (Benkenstein, Flöter und Luck, 2012). They interviewed 395 businesses from different sectors in Rostock. They found, that 68% of businesses do make sales from ferry and cruise passengers, and estimated that on average 4.8% of all sales have been induced by ferry and cruise passengers (ranging from 1.9% in the leisure sector to 17.2% in the transport sector). They found, that in gastronomy and accommodation 4.0 percent and in retail 4.4 percent of sales came from ferry and cruise passengers. From the overall turnover in Rostock in these sectors (198.5 million Euro in gastronomy/accommodation and 1,055.7 million Euro in retail) and an estimate for other services (transport, couture, leisure), they estimated the total turnover from ferry and cruise passengers to be 65.9 million Euro in 2012. Additionally, they estimated a turnover of 4.9 million Euro outside Rostock. For Warnemünde alone, the turnover estimate was at 14.5 million Euro, primarily from cruise passengers.

6.3.2 Direct spending of passengers

Up to date data for the spending of passengers on shore in Rostock/Warnemünde and Mecklenburg-Vorpommern can be obtained from the passenger survey.

Because the survey sample has been weighted to reflect the true proportions of passenger type, ship segment and season, it is sufficient to differentiate for turn-around and stopover passengers (in fact, arithmetically it would even be sufficient to show only the grand mean per category). The volume estimate is based upon the assumption that all stopover passengers are taking some form of shore excursion. This is not necessarily true, it might occur that passengers stay on board for some reason (e.g. not feeling well that day, not finding the destination interesting enough, needing some rest etc.). However, it seems that this portion should be quite small. After all, the main reason to go on a cruise in the Baltic is to see the cities.

Obviously, asking passengers if they have spent money in Rostock/Warnemünde or Mecklenburg-Vorpommern only makes sense for those passengers who actually spent time there. This is true for more than half of all passengers (54%), with the share being higher for stopover passengers (67% spent at least some time in Rostock or Warnemünde). Time spent in Mecklenburg-Vorpommern was only asked to stopover passengers, 24% of them spent time in Wismar, Bad Doberan/Kühlungsborn, Schwerin, Rövershagen or during a round trip in the state (Table 13).

Average local spending in Rostock/Warnemünde sums up to an average of 47.50 Euro per passenger, with higher values for turn-around passengers (58.22 Euro) compared to stopover passengers (43.27 Euro, Table 14). The average local spending per stopover passenger in Mecklenburg-Vorpommern is even a bit higher, standing at 52.06 Euro (Table 15).

Table 13: Volume estimate for local spending in Rostock/Warnemünde

	Turn-around passengers		Stopover passengers		Total	
Passengers total	195,570	100,0%	268,188	100,0%	463,758	100,0%
Passengers spending time in Rostock/Warnemünde	70,423	36,0%	179,241	66,8%	249,612	53,8%
Mecklenburg-Vorpommern	-	-	65,138	24,3%	-	-

Table 14: Local spending of passengers in Rostock/Warnemünde

Passengers spending time in Rostock / Warnemünde	Passengers spending money (%)			Mean spending in Euro (passengers without spending = 0 Euro)		
	Turn-around passengers	Stopover passengers	Total	Turn-around passengers	Stopover passengers	Total
Base	70,423	179,241	249,612	70,423	179,241	249,612
Food and drink, gastronomy	77%	75%	76%	31.59	14.30	19.20
Entrance tickets, tours, beach chair rentals etc.	18%	35%	30%	2.31	5.83	4.83
Purchases of food and daily necessities	30%	44%	40%	6.16	4.52	4.99
Purchases of souvenirs	18%	37%	32%	1.68	3.33	2.86
Other purchases	32%	37%	35%	14.28	13.34	13.60
Bus and train tickets	21%	26%	25%	2.20	1.95	2.02
Sum	81%	91%	88%	58.22	43.27	47.50

Table 15: Local spending of passengers in Mecklenburg-Vorpommern

Passengers spending time in MV	Passengers spending money (%)			Mean spending in Euro (passengers without spending = 0 Euro)		
	Turn-around passengers	Stopover passengers	Total	Turn-around passengers	Stopover passengers	Total
Base		65,138			65,138	
Food and drink, gastronomy		78%			15.95	
Entrance tickets, tours, beach chair rentals etc.		32%			3.70	
Purchases of food and daily necessities		63%			6.45	
Purchases of souvenirs		59%			5.39	
Other purchases		66%			18.46	
Bus and train tickets		19%			2.11	
Sum		81%			52.06	

Those turn-around passengers arriving by car and leaving their car in Warnemünde during the cruise trip (51.3% of all turnaround passengers) were asked for the amount of parking fees they would spend. Only about 4% of these passengers do not pay at all for the parking. The average amount per person for the parking sums up to 34.64 Euro.

About 23.2% of all turn-around passengers have spent have spent a night in Rostock or Warnemünde before their cruise trip, another 3.8% somewhere else in Mecklenburg-Vorpommern. Of those having spent one or more nights in Rostock or Warnemünde, only 5.3% did not pay for the accommodation. The average spending per person sum up to 82.60 Euros. The percentage for turn-around passengers planning to spend some time in Rostock or Warnemünde after they returned from the cruise trip is relatively small: 5.8% are "pretty sure", another 3.5% will "probably" extend their stay after returning. We will therefore take the 5.8% "pretty sure" and treat them as overnight passengers *after* the cruise along the same line as those passengers having spent a night *before* the cruise.

For Mecklenburg-Vorpommern, the corresponding figures are: 6.7% did not pay for the accommodation. The average spending per person sum up to 99.97 Euro.

The total direct passenger spending is calculated by multiplying the relevant number of passengers with the average spending per passenger. As a result, we have for turn-around passengers a local spending of 4.1 million Euro plus 3.5 million Euro for parking fees and 4.7 million Euro for accommodation cost. We need to add 8.5 million Euro for stopover passengers. Altogether, direct spending from passengers in Rostock and Warnemünde sums up to 20.0 million Euro. Passengers' spending in Mecklenburg-Vorpommern can be summed up to reach 4.3 million Euro. Thus, from the total spending of 24.3 million Euro, 82% are in Rostock/Warnemünde (Table 20).

The average spending of stopover passengers (44.40 Euro, among these 31.75 Euro in Rostock/Warnemünde and 12.64 in Mecklenburg-Vorpommern) is quite close to the 48 Euros CLIA Germany claims in its recent press release (CLIA Deutschland, 2018). However, the average spending of turn-around passengers of 67.48 Euros (among these 62.69 Euro in Rostock and Warnemünde and 4.79 I Mecklenburg-Vorpommern) is considerably below the 156 Euro CLIA claims for passengers starting their cruise trip in a German harbour. The difference, however, can be attributed to the fact that in this study we only look at *local* expenditures, while CLIA looks at the total expenditure.

Table 16: Total local turnover from passengers direct spending (Rostock/Warnemünde)

Local passenger expenditure in Rostock/Warnemünde	Turn-around passenger		Stopover passengers		All passengers	
Passengers total	195,570	100%	268,188	100%	463,758	100%
Spending time in Rostock/Warnemünde	70,423	36%	179,241	67%	249,612	54%
Average local spending (Euro)	58.22		43.27		47.50	
Total local turnover (Euro)	**4,100,027**		**7,755,758**		**11,855,785**	

Table 17: Total local turnover from passengers direct spending (Mecklenburg-Vorpommern)

Local passenger expenditure in Mecklenburg-Vorpommern	Turn-around passenger		Stopover passengers		All passengers	
Passengers total			268,188	100%		
Spending time in Rostock/Warnemünde			65,138	24%		
Average local spending (Euro)			52.06			
Total local turnover (Euro)			**3,391,084**		**3,391,084**	

Table 18: Additional local turnover from turn-around passengers direct spending

Additional local passenger expenditure in Rostock/Warnemünde	Turn-around passengers		Stopover passengers	All passengers
Passengers total	195,570	100%		
Arriving by car and leaving their car in Rostock/Warnemünde	100.327	51%		
Average parking spending (Euro)	34.64			
Total parking turnover (Euro)	**3,475,327**			**3,475,327**
Spending one or more nights in Rostock/Warnemünde before the cruise trip	45,372	23%		
Plan to spend one or more nights in Rostock/Warnemünde after the cruise trip	11,343	6%		
Spending one or more nights in Rostock/Warnemünde before or after the cruise trip	56,715	29%		
Average accommodation spending (Euro)	82.60			
Total accommodation turnover (Euro)	**4,684,659**			**4,684,659**

Table 19: Accommodation expenditure in Mecklenburg-Vorpommern

Accommodation expenditure in Mecklenburg-Vorpommern	Turn-around passengers		Stopover passengers	All passengers
Passengers total	195,570	100%		
Spending one or more nights in MV before the cruise trip	7,432	4%		
Plan to spend one or more nights in MV after the cruise trip	1,939	1%		
Spending one or more nights in MV before or after the cruise trip	9,371	5%		
Average accommodation spending (Euro)	100.00			
Total accommodation turnover (Euro)	**937,000**			**937,000**

Note: "Plan to spend on ore more nights in MV" was not asked in the survey. We therefore used the ratio from Table 18, 23:6

Table 20: Direct spending by passengers, summary Rostock/Warnemünde and Mecklenburg-Vorpommern

Direct spending by passengers	Rostock and Warnemünde	Mecklenburg-Vorpommern
Local expenditure (food and drink, gastronomy; entrance tickets, tours, beach chair rentals etc.; purchases of food and daily necessities; purchases of souvenirs; other purchases; bus and train tickets)	11,855,785	3,391,084
Parking fees (turn-around passengers only)	3,475,327	n/a
Accommodation (turn-around passengers only, before the cruise trip and plans after the cruise trip)	4,684,659	937,000
Total direct spending by passengers	**20,015,771**	**4,328,084**

6.3.3 Direct spending of crew members

The crew members reported their local spending after returning to the terminal.

Table 21: Local spending of crew members in Rostock/Warnemünde

Crew members spending time in Rostock / Warnemünde	Crew members spending money (%)	Mean spending in Euro (crew members without spending = 0 Euro)
Base	77,235	77,235
Food and drink, gastronomy	60,8%	16,80
Entrance tickets, tours, beach chair rentals etc.	6,0%	0,64
Purchases of food and daily necessities	65,0%	24,89
Purchases of souvenirs	20,0%	3,21
Other purchases	24,3%	8,57
Bus and train tickets	15,0%	1,17
Sum	90,0%	55,28

We also asked for the spending within the state of Mecklenburg-Vorpommern. However, because only 4 crew members visiting the state were interviewed, and those four spent moneys only on Food and drinks (22.57 Euros on average) and Shopping (15.38 Euro on average), we do not further detail the spending structure.

It became clear from the interviews, that on average 50% of all crew members were on shore leave (see section 4.2). From the cruise calendar we see that the total number of crew members over all ship calls is 168 thousand. From these, 92% visited Warnemünde and/or Rostock. This gives us the volume of crew members visits per year, which can be multiplied with the average spending per crew member.

The total local turnover from crew spending can be aggregated to about 4.3 million Euros per year, with 99% of the spending being in Rostock or Warnemünde and only 1% in the state of Mecklenburg-Vorpommern.

Table 22: Total local turnover from crew members direct spending (Rostock/Warnemünde)

	Absolute	Percentage
Crew members total	167,903	100%
On shore leave	83,952	50%
On shore leave	83,952	100%
Visited Rostock and/or Warnemünde	77,235	92%
Average local spending (Euro)	55.28	
Total local turnover (Euro)	**4,269,551**	

Table 23: Total local turnover from crew members (Mecklenburg-Vorpommern)

	Absolute	Percentage
Crew members total	167,903	100%
On shore leave	83,952	50%
On shore leave	83,952	100%
Visited Mecklenburg-Vorpommern	1,175	1%
Average local spending (Euro)	37.95	
Total local turnover (Euro)	**44,591**	

6.3.4 Local costs for ship operation

The local costs for ship operations can be split into costs handled by Rostock Port and costs handled without Rostock Port (see chapter 5.2 for results).

As a result, we find that about 17 million Euros are incurred from ship operations and other costs not directly paid by passengers or crews (and therefore not covered by the passenger and crew surveys).

	Full Turn-around calls	Full or part stop over calls	Total
Calls	51	154	205
Costs per call without those costs paid directly to Rostock Port, Euro	29,000	64,000	
Costs paid directly to Rostock Port, Euro	28,724	28,724	
Total costs per call, Euro	57,724	92,724	
Total costs, all calls 2018, Euro	**2,943,924**	**14,279,496**	**17,223,420**
Turn-around passengers	111,302	84,268	195,570
Stopover passengers	0	268,188	268,188
Average per turn-around passenger, Euro	26,45	26,45	
Average per stopover passenger		44.93	

To check for plausibility, we break down these costs per passenger. We see that an average turn-around passenger incurs indirect costs of about 15 Euros.

For stopover passengers, the calculation is a bit more complicated, because we need to estimate the share of turn-around passengers in the second group (part or full stopover). Based upon the real proportions (Table 3), we estimate this number to be 84,268. From here on we can calculate the costs per stopover passenger and arrive at EUR 49. We had learned from the industry interviews that the most expensive land excursion cost about 50 Euro, and by far not every stopover passenger takes part in such excursions. Therefore, the result seems to be plausible.

6.3.5 Spending side summary

To summarize the spending side of the economic impact, we add up all positions covered so far.

Table 24: Spending side (summary)

	Rostock/Warnemünde	Rest of Mecklenburg-Vorpommern
Direct local spending of passengers	11,855,785	3,391,084
Parking (turn-around passengers only)	3,475,327	0
Accommodation (turn-around passengers only)	4,684,659	937,000
Direct local spending of crew members	4,269,551	44,591
Indirect spending for ship operations	17,223,420	0
Total	**41,508,742**	**4,372,675**

6.3.6 Effect side

6.3.6.1 Local/Regional fraction

We have taken care during data collection to only ask for spending in Rostock/Warnemünde. This is true for direct spending from passengers and crews and also for ship operation cost. Therefore, no further steps need to be taken to estimate to local or regional fraction from spending data.

6.3.6.2 Net turnover

We need to reduce the gross turnover by the amount of Value Added Tax (VAT). Standard VAT rate in Germany is 19%, however, for some goods and services, different rates apply. Specifically, food purchases, public traffic and accommodation profit from a reduced VAT rate of 7%. Furthermore, in the case of indirect spending for ship operations we did not subtract any VAT, because all spending is already given as net figure. Also, fees and charges paid to Rostock port are given as net figures (cf. §5 of the Regulations and Charges document).

Subtracting VAT from the gross turnover give the net turnover as shown in Figure 12.

Economic Impact: Effect side

From gross turnover to net turnover

Spending Category	Total gross turnover (Euro)	VAT rates	Total net turnover (Euro)
Food and drink, gastronomy	6,085,357 €	19%	5,113,745 €
Entrance tickets, tours, beach chair rentals etc.	1,257,083 €	19%	1,056,372 €
Purchases of food and daily necessities	3,166,354 €	7%	2,959,209 €
Purchases of souvenirs	963,108 €	19%	809,334 €
Other purchases	4,058,619 €	19%	3,410,604 €
Bus and train tickets	594,816 €	7%	555,902 €
Parking	3,475,327 €	19%	2,920,443 €
Accommodation	4,684,659 €	9%	4,297,852 €
Total direct spending	**24,285,322 €**		**21,123,463 €**
Indirect spending for ship operations	**17,223,420 €**	**0%**	**17,223,420 €**
TOTAL	**41,508,742 €**		**38,346,883 €**

Interreg Baltic Sea Region GREEN CRUISE PORT 37

Figure 12: From gross turnover to net turnover

6.3.6.3 Imports and savings

Not all of the net turnover can be transferred into local or regional income, because imports have to be subtracted. Import rates differ between goods and services, therefore different import rates have to be taken into account on the two income levels looked at in this analysis. Income rates are taken from the tourism literature, they are used as the industry standard in German tourism income analysis (Maschke, 2005; Harrer und Scherr, 2010, 2013; Harrer und Sporer, 2018).

For ship operation costs, import rates have to be estimated differently. We use, again, the results from a previous study on the port related industry in Rostock (Benkenstein, Flöter und Hantel, 2015, S. 72). In this study, the authors estimated 9.595 people directly employed, and 4.342 (45%) employed through imports (input factors). This leaves about 55% for regional income without imports, which is completely in line with the estimates from direct spending (54%).

Subtracting imports from the net turnover gives the regional economic impact induced by tourism spending from passengers, crews and ship operational costs. The result is shown in Figure 13. This is the total local income or gross value added (GVA), which corresponds to the sum of wages, profits and capital interest over two income levels.

Economic Impact: Effect side

From net turnover to income

Spending Category	Total net turnover (Euro)	Local income rate, first level	Local income rate, second level	Total local income – GVA (gross value added) Euro
Food and drink, gastronomy	5,113,745 €	45%	30%	3,144,953 €
Entrance tickets, tours, beach chair rentals etc,	1,056,372 €	50%	30%	686,642 €
Purchases of food and daily necessities	2,959,209 €	12%	30%	1,136,336 €
Purchases of souvenirs	809,334 €	20%	30%	356,107 €
Other purchases	3,410,604 €	20%	30%	1,500,666 €
Bus and train tickets	555,902 €	58%	30%	392,467 €
Parking	2,920,443 €	55%	30%	2,000,504 €
Accommodation	4,297,852 €	40%	21%	2,260,670 €
Total direct spending	**21,123,463 €**			**11,478,345 €**
Indirect spending for ship operations	**17,223,420 €**	**55%**		**9,472,881 €**
TOTAL	**38,346,883 €**			**20,951,226 €**

Interreg Baltic Sea Region GREEN CRUISE PORT 38

Figure 13: From net turnover to income

The total primary income in Rostock was 3.9 billion Euro in 2016 (Statistical Office, series P233 2016 00, p. 10). We can therefore estimate that the contribution from cruise tourism to the city's total income is at about 0.55%. This share will probably be considerably higher in Warnemünde, although a concrete figure cannot be numeralised due to a lack of base data.

6.3.6.4 Job effects

Although it is not possible to numeralise the actual number of jobs in cruise tourism, we can estimate the number of full-time job equivalents generated through income from tourism.

Although we do know that the number of employees in the port segment in Rostock in 2015 was 9.595 (Benkenstein, Flöter und Hantel, 2015, S. 26), of course not all of these are working in or for the cruise industry. On the other hand, jobs outside the port segment are at least partly dependent on spending from cruise passengers and crews, e.g. in gastronomy or retail.

We have therefore used a different approach: We took the average gross wages for different segments in Rostock (published by the Statistical Office, series N133 2018 41, p. 9) and calculated the number of fulltime jobs which could be paid by the regional income sum. The result is, therefore, not the actual number of people employed, but the number of full-time job equivalents. The results are shown in Figure 14.

Economic Impact: Effect side

From income to job equivalents

Spending Category	Total local income – GVA (gross value added), Euro	Average gross income, full-time employees, Rostock, 2018 Euro	Full-time equivalents
Food and drink, gastronomy	3,144,953 €	24,768 €	127.0
Entrance tickets, tours, beach chair rentals etc,	686,642 €	25,188	27.3
Purchases of food and daily necessities	1,136,336 €	35,196	32.3
Purchases of souvenirs	356,107 €	35,196	10.1
Other purchases	1,500,666 €	35,196	42.6
Bus and train tickets	392,467 €	33,432	11.7
Parking	2,000,504 €	25,188	79.4
Accommodation	2,260,670 €	24,768	91.3
Total direct spending	**11,478,345 €**		**421.7**
Indirect spending for ship operations	**9,472,881 €**	**33,432**	**283.3**
TOTAL	**20,951,226 €**		705.1

Interreg Baltic Sea Region GREEN CRUISE PORT 39

Figure 14: From income to job equivalents

We can estimate from Rostock Port's financial statement 2017 that cruise ships are responsible for about a quarter of Rostock Port's revenues in fees and charges. How come, that obviously not a quarter of the above mentioned 9,595 jobs is induced by cruise shipping? For an answer, we need to take into account that from the 9,595 jobs, 2,177 are in industries remotely related to the port[4], but certainly not related to cruise shipping. Same goes for employees of ferry and cruise lines, which do not fall into the scope of this study, and which account for another 1,237 employees.

[4] „seehafenverbundene Wirtschaft“

7 Cruise Customer's Satisfaction

This section firstly discusses the results of a short literature review and then reports the results of the passenger and crew surveys.

7.1 Literature Review

Customer satisfaction is usually discussed based upon the disconfirmation paradigm, comparing customers' expectations and the customers' perception of performance. Application of this concept in general tourism has a long tradition (Botterill, 1987; Parasuraman, Zeithaml und Berry, 1988; Fick und Ritchie, 1991; Weber, 1997; Alegre und Garau, 2010) with a number of applications in cruise tourism (Andriotis und Agiomirgianakis, 2010; Mc. A Baker, 2015; Moody, 2015; Satta *u. a.*, 2015; Chang, Liu, *u. a.*, 2016; Ozturk und Gogtas, 2016).

In measuring customer satisfaction, the disconfirmation paradigm is usually implied in the scale. Instead of asking for expectations and performance perception separately, a single scale is constructed, leaving the process of weighing expectations against performance inherently to the customer. Usually, a scale ranging from "extremely" or "very" satisfied to "not at all" satisfied is employed. Sometimes, scales are pseudo-metric (i.e. only extreme points are being verbalized and points in between are numbered), others are of clearly ordinal nature (which does not prevent authors to falsely calculate mean scores).

As an example, we use aggregated data for the Baltic Sea (Moody, 2015, S. 11) from a 5-point ordinal scale with 5 being the highest score (mean scores are shown):

- Initial shoreside welcome: 4.02
- Guided Tour: 4.06
- Historic Sites/Museums: 4.18
- Variety of things to see and do: 4.07
- Friendliness of Residents: 4.13
- Overall Shopping Experience: 3.87
- Courtesy of Employees: 4.20
- Overall prices: 3.47
- Local Transportation: 4.16
- Overall Visit: 4.15
- Visit Met Expectations: 3.90.

It must be noted, however, that this study not only suffers from an ordinal scale being treated as metric, but also that the last item, "visit met expectations", is kind of unclear in a conceptual way: Either, satisfaction is treated as a trade-off between expectation and perception (then it would not be possible to ask for one of the elements of the trade-off separately), or it is not satisfaction, which was measured here, but rather a simple rating, which would imply that only the perception side is assessed. Although this differentiation might sound subtle or even nitpicking, it should be clear from the beginning, on which concept the measurement is based upon, satisfaction or rating.

7.2 Cruise Customer's Satisfaction in Rostock

Data for the assessment of cruise passenger's satisfaction were generated in the passenger survey in the summer of 2018.

All satisfaction ratings were obtained using a 5-point scale with the instruction to rate 1 for "very satisfied" through 5 "not all satisfied". Although, strictly speaking, this is an ordinal scale, we use it as pseudo metric because only the endpoints have been verbalised (Döring und Bortz, 2016, S. 181ff.)

The share of passengers who did not respond to an aspect because they did not feel competent to rate their satisfaction is in a range between 5% (satisfaction with the port in general) and 44% (restrooms in the passenger terminal). All percentages and means given below are for those passengers who actually gave a rating.

7.2.1 Satisfaction with the port in general

The overall satisfaction with the port in general is quite good, with 49% "1-very satisfied" and another 38% with the second rating. Only 3% rated "4" and less than one percent "5-very unsatisfied".

The mean rating is 1.67 (on a five-point scale), with a very slightly better rating for stopover passengers (1.65).

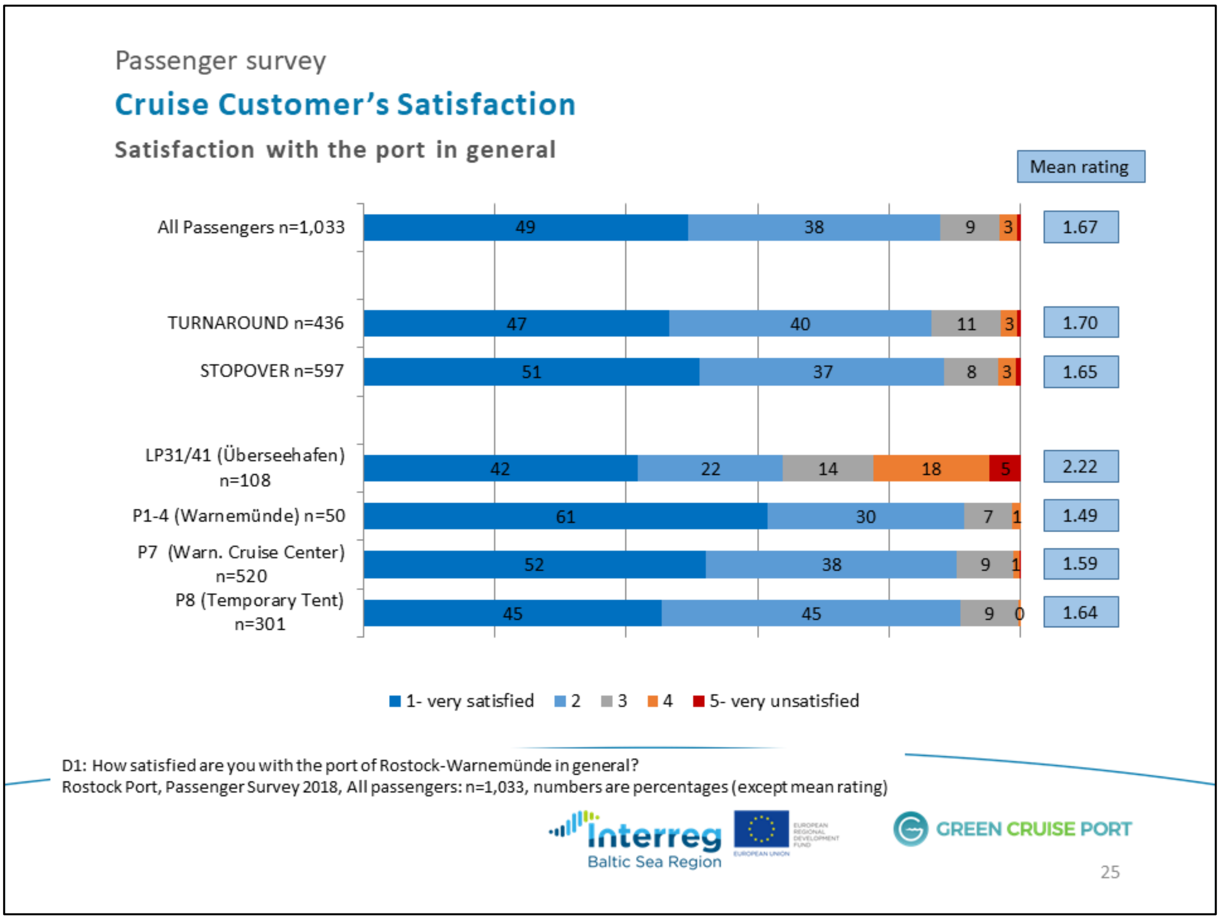


Figure 15: Satisfaction with the port in general, 2018

The mean general satisfaction for stopover passenger is therefore showing a clear downwards trend, from 1.1 (2007) over 1.2 (2010), 1.5 (2013) to 1.7 (2018). The main reason is, that the share of "1-

very satisfied" is decreasing, while the share of "2" is increasing. This is enough to change the mean. Please note, that in previous years the questionnaire asked for the "ship call", while in 2018 we asked for the "port of Rostock/Warnemünde in general". For turn-around passengers, however, the rating in 2018 (1.7) was clearly better than in 2013 (2.1) and the previous years.

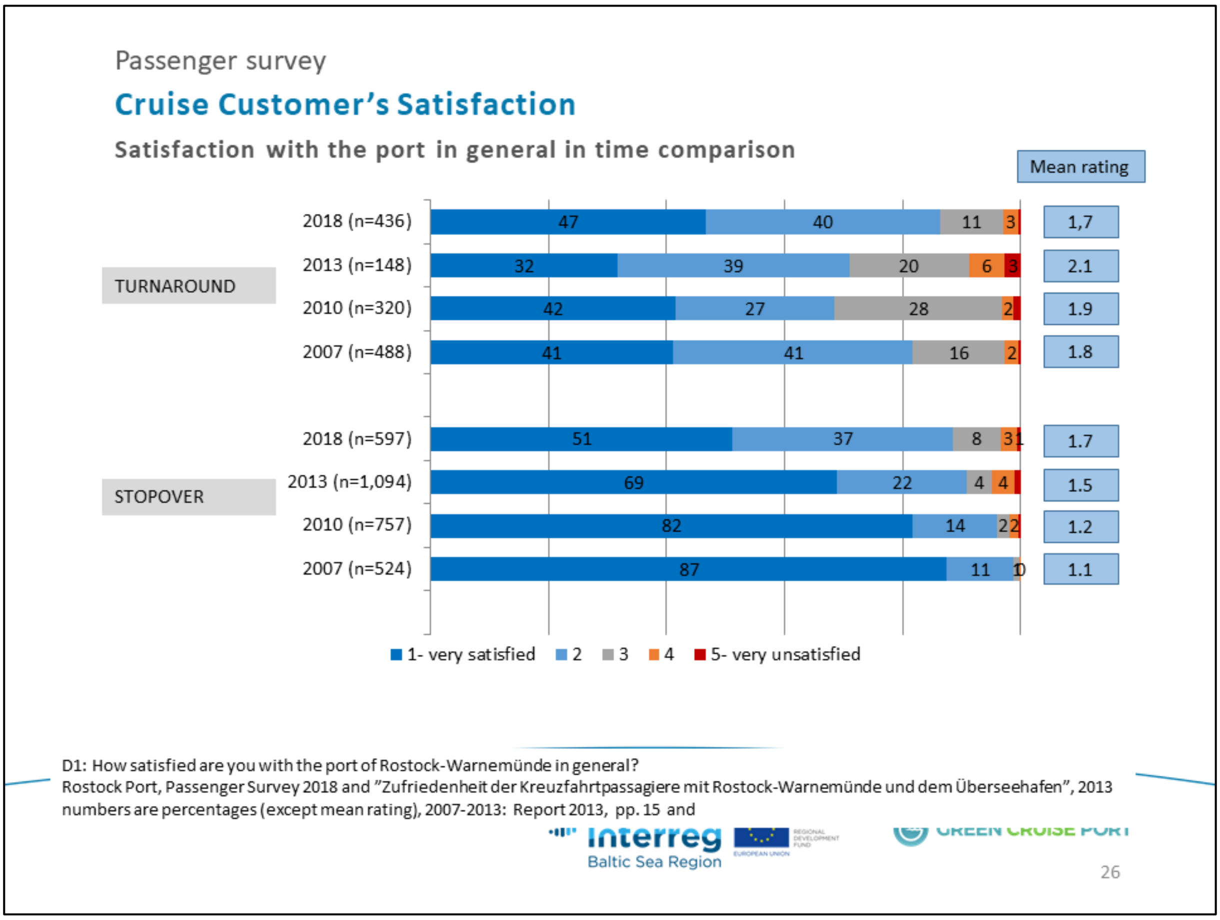


Figure 16. General satisfaction in time comparison, 2007-2018

7.2.2 Passenger terminal

The passenger terminal had a mean satisfaction score of 1.93, with turnaround passengers rating it slightly better (1.75) than stopover passengers (2.06).

Interestingly, the rating for passengers interviewed at Rostock-Überseehafen (berth 31/41) is more positive (2.06) than in the temporary tent at pier 8 (2.36). Pier 8 is rated the most negatively of all piers. This is true for turn-around passengers (2.24) and also for stopover passengers (2.39).

Most aspects are rated more positive than the terminal average. Friendliness of the staff was rated 1.33, and helpfulness 1.37. Speed of handling and waiting times were rated with 1.44, cleanliness in the terminal 1.52.

Passenger survey

Cruise Customer's Satisfaction

Ratings for passenger terminale by type of ship and type of passenger

	All Passen-gers n=1,033	AIDA n=217	MSC/ COSTA n=242	UK Lines n=74	US Lines1 n=167	US Lines 2 n=227	Turn-around n=436	Stop-over n=597
Friendliness of the staff	1,33	1,41	1,41	1,22	1,20	1,33	1,41	1,28
Helpfulness in the handling	1,37	1,45	1,35	1,26	1,32	1,33	1,43	1,33
Speed of handling/ waiting times	1,44	1,72	1,49	1,27	1,36	1,21	1,60	1,33
Cleanliness in the terminal	1,52	1,50	1,61	1,27	1,38	1,61	1,56	1,49
Restrooms	1,86	1,78	1,56	1,72	1,92	2,08	1,71	1,94
Passenger terminal in total	1,93	1,71	1,82	1,53	1,92	2,44	1,75	2,06
Seating	2,20	2,35	1,94	2,07	2,32	2,26	2,20	2,20

D2: „And how satisfied are you with the following aspects of the passenger terminal?" 5-point scale rate (1 for "very satisfied" to 5 "not all satisfied")
Rostock Port, Passenger Survey 2018

Interreg Baltic Sea Region GREEN CRUISE PORT

27

Figure 17: Passenger terminal rating

Restrooms, however, were rated only with 1.86, and seating opportunities only received a mean rating of 2.20. Passengers interviewed at piers 1-4 had the most negative rating of seating possibilities (3.29) and restrooms (3.28).

In general, stopover passengers are more critical than turn around passengers. Passengers form the US and Canada rate the terminal in general somewhat more negative (2.14), and specifically the seating (2.21) and restrooms (2.00). This group, however, was quite satisfied with staff friendliness (1.28) and helpfulness (1.28).

7.2.3 Port and port surroundings

The port and port surroundings are rated slightly better than the terminal, with a mean rating of 1.88. Again, turn-around passengers' rate is somewhat more positively (1.72) than stopover passengers' rate (1.96). The port rating is most negative for passengers interviewed at Überseehafen (piers 31/41) with a rating of only 2.53 (and specifically for the stop-over passengers with a rating of 2.62).

Safety is rated a bit better than the port in general (1.42), but with turn around passengers being somewhat more critical (1.55) than stopover passengers (1.34).

Also, internet connections (1.53), transport connections by public transport (1.61), the connection to the centre of Warnemünde (1.43) and the connection to the centre of Rostock (1.60) are rated better than the port in general, while signposting is less positively rated (1.93).

The most negative evaluation can be seen for the tourist information centre (1.99) and the port surroundings (2.03). This last point is being rated quite negatively by Spanish passengers (2.28).

Passenger survey

Cruise Customer's Satisfaction

Ratings for port and port environment by type of ship and type of passenger

	All Passengers n=1,033	AiDA n=217	MSC/ COSTA n=242	UK Lines n=74	US Lines1 n=167	US Lines 2 n=227	Turn-around n=436	Stop-over n=597
Safety	1.42	1.62	1.48	1.23	1.35	1.27	1.55	1.34
Connection to the center of Warnem.	1.43	1.35	1.42	1.47	1.37	1.43	1.42	1.43
Internet	1.53	1.57	1.44	1.63	1.50	1.49	1.54	1.52
Connection to the center of Rostock	1.60	1.40	1.70	1.34	1.58	1.72	1.45	1.68
Connections by public transport	1.61	1.48	1.65	1.33	1.63	1.63	1.51	1.68
Port and port environment in total	1.88	1.83	1.54	1.79	2.02	2.10	1.72	1.96
Signposts in general	1.93	1.94	1.88	1.83	1.89	1.94	1.90	1.95
Info Center/ Tourist Office	1.99	1.80	1.75	1.89	2.04	2.30	1.75	2.09
Design of the port environment	2.03	2.04	1.90	1.88	1.90	2.25	1.98	2.06

D2 „And what about the port and port environment?" 5-point scale rate (1 for "very satisfied" to 5 "not all satisfied")
Rostock Port, Passenger Survey 2018

Interreg Baltic Sea Region GREEN CRUISE PORT 29

Figure 18: Ratings for port and port environment

7.2.4 Rostock and Warnemünde

Altogether, Warnemünde (1.31) is rated more positively than Rostock (1.46). This time, however, stopover passengers rate Warnemünde (1.28) and also Rostock (1.42) a bit more positive than turn-around passengers (1.39and 1.56).

The most positive rating in Rostock and Warnemünde is for cleanliness (1.42). Guests from the US and Canada (1.32) and UK and Ireland (1.29) are particularly in favour of this aspect.

After that, sightseeing objects (1.51), the weather (1.56) and the beach and leisure attractions (1.57) have been rated positively, followed by guided tours (1.62), restaurants/bars (1.64) and shopping facilities (1.76). Also, language skills are rated somewhat positively (1.82).

Value for money is rated less positively (2.00), and public restrooms are at the end of the scale (2.33). Also, the number of tourists is rated less positively (2.23), and turn-around passengers rate this aspect more negatively (2.47) than stopover passengers (2.14). Specifically, German passengers are rather critical towards this aspect (2.57).

Passenger survey

Cruise Customer's Satisfaction

Ratings for Rostock/ Warnemünde by place of residence and typ of passenger

Passengers who have visited Rostock/Warnemünde	All n=556	Germany n=139	UK/ Ireland n=91	Europe (w/o UK, Spain) n=73	US/ Canada n=143	Turn-around n=157	Stop-over n=399
Warnemünde in total	1.31	1.34	1.25	1.42	1.27	1.39	1.28
Cleanliness	1.42	1.61	1.29	1.38	1.32	1.61	1.34
Rostock in total	1.46	1.56	1.34	1.31	1.48	1.56	1.42
Sights, architecture, buildings	1.51	1.54	1.46	1.61	1.48	1.55	1.50
Weather	1.56	1.49	1.87	1.51	1.52	1.48	1.60
Beach/ leisure activities	1.57	1.59	1.22	1.57	1.40	1.60	1.55
City tours/guided sightseeing	1.62	1.76	1.67	1.61	1.55	1.84	1.55
Restaurants/ bars	1.64	1.74	1.70	1.52	1.56	1.70	1.61
Shopping	1.76	1.79	1.80	1.75	1.71	1.76	1.76
Language skills of the people	1.82	-	1.74	1.95	1.84	2.13	1.81
Price-performance in general	2.00	2.13	2.08	1.87	1.98	2.09	1.97
Tourist numbers	2.23	2.57	2.06	2.04	2.27	2.47	2.14
Public restrooms	2.33	2.45	2.31	2.17	2.43	2.39	2.31

D4: „And how satisfied are you with Rostock or Warnemünde in general?" 5-point scale rate (1 for "very satisfied" to 5 "not all satisfied")
Rostock Port, Passenger Survey 2018, Only passengers that have visited Rostock/Warnemünde

Interreg Baltic Sea Region GREEN CRUISE PORT

31

Figure 19: Ratings for Rostock/Warnemünde

7.3 Crew members' satisfaction

Crew members' satisfaction was surveyed using the same methodology used for cruise passengers.

7.3.1 Satisfaction with the port in general

The overall satisfaction with the port in general has a mean rating of 1.45 and thus considerably better than the average passengers' rating (1.67). Interestingly, staff from AIDA-ships and the US cruise liners has a more positive rating than crew members from other ships. Furthermore, female crew members are less positive in their overall rating (1.51) than male crew members (1.44).

7.3.2 Passenger terminal

The passenger terminal is rated a bit less positive than the port in general (1.75). However, friendliness of staff (1.31), helpfulness of staff (1.40), cleanliness (.145) and speed of handling (1.53) are rated above average, while restrooms (1.85) and seating (2.06) is rated considerably below average.

7.3.3 Port and port surroundings

Port and port surroundings are rated o the same level as the passenger terminal (1.3), with security (1.27) and public transport (1.53) rated better than average. Specifically, the connection to Warnemünde (1.34) is rated better than the connection to Rostock (1.64). The internet connection is rated at 1.69 and thus a bit better than the overall rating.

The design of the port surroundings is rated somewhat less positive than the overall rating (1.85), same goes for the tourist information office (1.91), gut only half of the crew members could give a rating for this point. Same goes for the Seaman's Mission, which was only rated by about 6 in 10 crew members with an average rating of 1.81.

7.3.4 Rostock and Warnemünde

Again, Warnemünde is rated more positively (1.33) than Rostock (1.51). Beach and leisure attractions are rated relatively positive (1.49), same goes for cleanliness (1.48) and for sightseeing, architecture and buildings (1.51). Also, shopping (1.64) and restaurants/bars (1.63) were rated positively, while the number of tourists was only rated at 2.01, the value for money at 2.03 and the public restrooms ranked lowest with 2.40.

8 Annex

8.1 Questionnaires

8.1.1 Passenger questionnaire

A) STRUCUTRAL QUESTIONS

A1 TO ALL
Does your cruise start today or are you going ashore here?

1. Cruise begins in Rostock or Warnemünde (STARTERS)
2. Shore leave during a cruise that does not begin or end in Rostock or Warnemünde (STOPOVER)
3. Other -> END

A2 TO ALL
With which ship do you take your cruise trip?

Selection list

A3 TO ALL
How many times have you been on a sea cruise?

1. None, this is my first sea cruise
2. I have been on 1-4 sea cruises already
3. I have been on 5 or more sea cruises

A4 TO ALL
How long is your current cruise holiday?

Number of nights

A5 TO ALL
With how many people do you travel together? By this we mean all persons, including yourself, with whom you have a common travel budget.

A6A Number of adults (18 years and older)

A6B Number of children (up to the age of 17)

A6 TO ALL
Why did you choose a <u>Baltic</u> cruise? Which of the following applies to you?

1. Many interesting cities
2. St. Petersburg is a particularly interesting destination
3. The Baltic sea is new for me, don't know it, yet
4. Easy to reach from where I live
5. Better value (price) than other destinations
6. Special offer of the shipping company (eg short-term offer, special price offer)
7. Is part of a longer cruise with other destinations outside the Baltic Sea
8. Other reasons
9. It wasn't my decision (eg present, someone else decided) [PROG: EXCLUSIVE]

B) TURN AROUND PASSENGERS

B1 TURNAOROUND PASSENGERS ONLY
How many days/ hours before check-in did you arrive in Rostock or Warnemünde?

Number of hours, round up or down to whole hours

B2 TURNAOROUND PASSENGERS ONLY
Did you have an overnight stay between leaving home and starting your cruise?

1. Yes, in Rostock or Warnemünde
2. Yes, in Mecklenburg-Vorpommern, outside of Rostock or Warnemünde
3. Yes, outside of Mecklenburg-Vorpommern
4. No

B3A TURNAOROUND PASSENGERS ONLY
Where did you spend the time between your arrival in Rostock or Warnemünde and the check-in? Please tell me first where you spent most of your time. [Bitte nur eine Nennung]
B3B And where else have you been. [Mehrere Antworten sind möglich]

1. At the terminal
2. In the port area outside the terminal
3. In the city of Warnemünde
4. In the city center of Rostock
5. At the airport
6. Somewhere else

B4A TURNAOROUND PASSENGERS ONLY
How did you travel to Rostock or Warnemünde? Please tell me first which means of transport you traveled the furthest distance with. [Bitte nur eine Nennung]
B4B And which other means of transport did you use? [Mehrere Antworten sind möglich]

1. Car (remains here for the duration of the cruise)
2. Car (I was taken here)
3. Touring coach
4. Scheduled coach (eg Flixbus)
5. Train
6. Airplane
7. Public transport (bus, tram)
8. Cruise operator transfer bus to/ from train station or airport
9. Taxi
10. On foot
11. Other

B5A TURNAOROUND PASSENGERS ONLY
Would you rather have traveled with another means of transport?

1. Yes
2. No

B5B NUR WENN B5A = Ja
Which other means of transport would you rather have traveled with?

[Liste aus B4]

B5C NUR WENN B5A = Ja
Why did you not use your favorite means of transport?

1. Price
2. Bad connection
3. Travel time too long
4. Expected parking problems
5. Other reasons

B6 TURNAOROUND PASSENGERS ONLY
Was the arrival organized by the cruise operator or did you organize the journey yourself?

1. Completely organized it myself
2. Completely organized by cruise operator
3. Both (eg Rail & Fly ticket, Rail & Cruise ticket)

B7 TURNAOROUND PASSENGERS ONLY
How important was it for you to start your cruise specifically in Rostock or Warnemünde?

The departure from Rostock/ Warnemünde was for me...

1. ... desired
2. ... acceptable
3. ... all the same

B8 TURNAOROUND PASSENGERS ONLY
Did you know that you could take cruises from Rostock or Warnemünde?

1. Yes
2. No

B9 TURNAOROUND PASSENGERS ONLY MIT REISEENDE ROSTOCK (B8=1)
Are you planning to stay in Rostock or Warnemünde at the end of the sea cruise?

1. Yes, definitely
2. Yes, very likely
3. No, unlikely
4. No, definitely not
5. I don‘t know, yet

B10 NUR WENN AUFENTHALT NACH REISEENDE GEPLANT (B9=1 oder 2)
How much time are you likely to spend time in Rostock or Warnemünde after the trip ends?

B10A hours (if no overnight stay is planned)

B10B days (if overnight stay is planned)

C) STOPOVER PASSENGERS

C1 STOPOVER PASSENGERS ONLY
How did you organize your shore leave today (if in doubt please answer regarding the most important part of the trip)?

1. Bus or train tour, organized by the cruise operator
2. Bus tour, self-booked (eg local agencies on land, internet offers like meine-landausfluege.de or similar)
3. Accompanied excursion on foot or by bicycle organized by the cruise operator
4. Accompanied excursion on foot or by bicycle, self-booked (eg local agencies ashore, Internet offers like meine-landausfluege.de or similar)
5. Independent shore excursion, alone or with other people
6. Something else

C2 STOPOVER PASSENGERS ONLY
What destinations did you visit during your shore excursion today?
[Mehrfachnennungen sind möglich]

[PROG: randomise list]

1. Warnemünde
2. Rostock
3. Wismar
4. Bad Doberan/Kühlungsborn
5. Schwerin
6. Karls Erdbeerhof in Rövershagen
7. Round trip Mecklenburg-Vorpommern
8. Berlin
9. Lübeck
10. Hamburg
11. Other destinations

C3 STOPOVER PASSENGERS ONLY, WENN in C2 = Warnemünde (1) oder Rostock (2)
How long were you in Rostock or Warnemünde?

C3A: In Warnemünde (hours, round up or down to whole hours)

C3B: In Rostock (hours, round up or down to whole hours)

C4 STOPOVER PASSENGERS ONLY, WENN in C2 = Warnemünde (1) oder Rostock (2)
What did you do in Rostock or in Warnemünde? (Mehrfachnennungen sind möglich)

1. Sightseeing
2. Shopping
3. Gastronomy (food, drink, ice cream)
4. Bathing/ beach visit
5. Museum, gallery, art exhibition etc.
6. Harbor cruise
7. Other

C4A: If other: Specify?

C5 TO ALL
When you planned your Baltic Sea cruise, how important were the following cities to you when you decided on your itinerary? You can answer with 1 = "was important for my decision" or 2 = "was not so important". If you are not visiting a particular city in the list, please say so.

Skala 1-2, 0 = besuche ich nicht/bin nicht sicher

1. Copenhagen (DK)
2. Stockholm (SE)
3. Visby-Gotland (SE)
4. Helsinki (FI)
5. Mariehamn (FI)
6. Turku (FI)
7. Klaipeda (LT)
8. Rostock-Warnemünde (DE)
9. Lübeck (DE)
10. Berlin (DE)
11. Hamburg (DE)
12. Danzig (PL)
13. Saaremaa (EE)
14. Tallinn (EE)
15. Kiel (DE)
16. St. Petersburg (RU)
17. Riga (LV)

D) SATISFACTION

How satisfied are you with the following aspects of your cruise here in Rostock/ Warnemünde? You can answer with 1 = very satisfied to 5 = not at all satisfied. With the values in between, you can rate your opinion. If you cannot or do not want to rate something, for example, if you were not aware of an aspect, please indicate this.

[INT: Skala 1-5, wenn nicht genutzt oder keine Bewertung möglich: Bitte 0 erfassen]

D1 TO ALL
How satisfied are you with the port of Rostock-Warnemünde in general?

D2 TO ALL
And how satisfied are you with the following aspects of the passenger terminal?

[PROG: Items je Frage randomisieren]

1. **Passenger terminal in total [PROG: always at Pos 1]**
2. Friendliness of the staff
3. Speed of handling/ waiting times
4. Helpfulness in the handling
5. Cleanliness in the terminal
6. Seating
7. Restrooms

D3 TO ALL
And what about the port and port environment?

1. **Port and port environment in total [PROG: always at Pos 1]**
2. Design of the port environment
3. Info Center/ Tourist Office
4. Safety
5. Transport connections by public transport (bus/ train)
6. Connection to the center of Warnemünde
7. Connection to the center of Rostock
8. Signposts in general
9. Internet

D4 ONLY VISITORS TO Rostock/Warnemünde (B3A/B = 3 or 4 or C2 = 1 or 2)
And how satisfied are you with Rostock or Warnemünde in general?

1. **Rostock in total [PROG: always at Pos 1]**
2. **Warnemünde in total [PROG: always at Pos 2]**
3. Restaurants/ bars
4. Shopping
5. Sights, architecture, buildings
6. Beach/ leisure activities
7. Price-performance in general
8. Tourist numbers
9. Cleanliness
10. City tours/guided sightseeing
11. Weather
12. Public restrooms
13. Language skills of the people [PROG: Only English language version]

E) SPENDING

ONLY WHEN Rostock/Warnemünde visited (B3A/B = 3 or 4 or C2 = 1 or 2)
OR WHEN Destinaton in MV (C2=3-7)
OR TURNAROUND PASSENGER travelling by car (B4A=1)
OR TURNAROUND PASSENGER with overnight stay in Rostock/Warnemünde (B2=1)
OR TURNAROUND PASSENGER with overnight stay Mecklenburg-Vorpommern (B2=2)

Now I would like to ask about your expenses as part of your trip. Please indicate the costs for yourself and your fellow travelers with whom you have a common travel budget, ie for [PROG: Show number of people from question A5 here] people.

E1 ONLY WHEN Rostock/Warnemünde visited (B3A/B = 3 or 4 or C2 = 1 or 2)
How much money did you personally spend on the following things in Rostock and Warnemünde? Please tell me separately for the following categories.

1. Food and drink, gastronomy
2. Entrance tickets, tours, beach chair rentals etc.
3. Purchases of food and daily necessities
4. Purchases of souvenirs
5. Other purchases
6. Bus and train tickets

E2 ONLY WHEN Destinaton in MV (C2=3-7)
How much money did you personally spend on the following things in Mecklenburg-Vorpommern? Please tell me separately for the following categories.

1. food and drink, gastronomy
2. Entrance tickets, tours, beach chair rentals etc.
3. Purchases of food and daily necessities
4. Purchases of souvenirs
5. Other purchases
6. Bus and train tickets

E3 ONLY TURNAROUND PASSENGERS travelling by car (B4A=1)
How much money do you pay for parking your car?

Parking (Euro)

E4A: I don‘t know that, yet

E4 ONLY TURNAROUND PASSENGERS with overnight stay in Rostock/Warnemünde (B2=1)
How much money did you spend for the overnight stay(s) in Rostock or Warnemünde before embarking on the cruise?

Overnight stay (Euro)

E5 ONLY TURNAROUND PASSENGERS with overnight stay Mecklenburg-Vorpommern (B2=2)

How much money did you spend for the overnight stay(s) in Mecklenburg-Vorpommern before embarking on the cruise?

Overnight stay (Euro)

S) DEMOGRAPHICS

S1 TO ALL
How old are you?

Age in years

S2 TO ALL
Gender

1. Female
2. Male
3. Other/ undetermined

S3 TO ALL
In which country is your primary residence?
Selection list of world countries

S4 ONLY WHEN FROM GERMANY
In which federal state is your main residence?
Selection list of German states

8.1.2 Crew questionnaire

A) STRUCTURAL QUESTIONS

A1 TO ALL
Which ship are you currently on?

Select from list

A2 TO ALL
How many crew members does the ship have in your estimation?

number

A3 TO ALL
About how many of the crew have shore leave today?

number

A4 TO ALL
What places have you visited or will you visit during today's shore leave? [multiple responses possible]

1. Warnemünde
2. Rostock
3. Wismar
4. Bad Doberan/Kühlungsborn
5. Schwerin
6. Karls Erdbeerhof in Rövershagen
7. Round trip Mecklenburg-Vorpommern
8. Berlin
9. Lübeck
10. Hamburg
11. Other destinations

A5 ONLY IF in A4 = Warnemünde (1) or Rostock (2)
How much time did you or will you spend in Rostock or Warnemünde?

A5A: In Warnemünde (hours)

A5B: In Rostock (hours)

A6 ONLY IF in A4 = Warnemünde (1) or Rostock (2)
What did you do in Rostock or Warnemünde? [multiple responses possible]

1. City tour
2. Shopping
3. Gastronomy (food, drink, ice cream)
4. Bathing/ beach visit
5. Museum, gallery, art exhibition etc.
6. Port tour
7. Other

A6: If other - what?

A7 Would you have liked additional information before your visit to Rostock or Warnemünde? [multiple responses possible]

1. No [PROG: EXCLUSIVE]

Yes, namely

2. city map and information about sights
3. historical background information
4. practical information about transport links
5. restaurants recommendations
6. shopping recommendations
7. other information

A8 Have you been to Rostock or Warnemünde before this trip?

1. Yes, as part of a previous cruise
2. 2. Yes, in the context of another trip
3. No

B) SATISFACTION

How satisfied are you with the following aspects of your cruise here in Rostock/ Warnemünde? You can answer with 1 = very satisfied to 5 = not at all satisfied. With the values in between, you can rate your opinion. If you cannot or do not want to rate something, for example, if you were not aware of an aspect, please indicate this.

B1 TO ALL
How satisfied are you with the port of Rostock-Warnemünde in general?

B2 TO ALL
And how satisfied are you with the following aspects of the passenger terminal?

[PROG: Randomise items]

1. **Passenger terminal in total [PROG: always at Pos 1]**
2. Friendliness of the staff
3. Speed of handling/ waiting times
4. Helpfulness in the handling
5. Cleanliness in the terminal
6. Seating
7. Restrooms

B3 TO ALL
And what about the port and port environment?

1. **Port and port environment in total [PROG: always at Pos 1]**
2. Design of the port environment
3. Info Center/ Tourist Office
4. Safety
5. Transport connections by public transport (bus/ train)
6. Connection to the center of Warnemünde
7. Connection to the center of Rostock
8. Signposts in general
9. Internet
10. Care by the Seamen’s Mission

B4 ONLY IF Rostock/Warnemünde visited (A4 = 1 or 2)
And how satisfied are you with Rostock or Warnemünde in general?

1. **Rostock in total [PROG: always in Pos 1]**
2. **Warnemünde in total [PROG: always in Pos 2]**
3. Restaurants/ bars

4. Shopping
5. Sights, architecture, buildings
6. Beach/ leisure activities
7. Price-performance in general
8. Tourist numbers
9. Cleanliness
10. City tours/guided sightseeing
11. Weather
12. Public restrooms
13. Language skills of the people [PROG: Only English language version]

C) SPENDINGS

C1 ONLY IF Rostock/Warnemünde visited (A4 = 1 or 2)
How much money did you personally spend on the following things in Rostock and Warnemünde? Please tell me separately for the following categories.

1. food and drink, gastronomy
2. Entrance tickets, tours, beach chair rentals etc.
3. Purchases of food and daily necessities
4. Purchases of souvenirs
5. Other purchases
6. Bus and train tickets

C2 ONLY IF MV visited (A4 = 3-7)
How much money did you personally spend on the following things in Mecklenburg-Vorpommern? Please tell me separately for the following categories.

7. food and drink, gastronomy
8. Entrance tickets, tours, beach chair rentals etc.
9. Purchases of food and daily necessities
10. Purchases of souvenirs
11. Other purchases
12. Bus and train tickets

S) STATISTICS

S1 TO ALL
How old are you?

Age in years

S2 TO ALL
Gender

1. Female
2. Male
3. Other/ undetermined

S3 TO ALL
In which country is your primary residence?

Seleect from list

S4 ONLY FOR RESPONDENTS FROM GERMANY
In which federal state is your main residence?

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