

To what extent does Swanage beach management create more winners than losers?



Image of Swanage Bay. Source: The Upcoming

Independent Geographical Investigation

Louis Difazio

Candidate number: 1057

Centre number: 66601

Contents:

Executive summary:

Study framework:

Introduction:

Risk assessment/ethics:

Field methodology:

Data presentation/Analysis:

Conclusions:

Evaluation:

Bibliography:

Executive summary:

My main research question is “To what extent does Swanage beach management create more winners than losers?” I have split this up into three sub-questions that are tailored to understand the effectiveness of the coastal management, and the impact it has on some of the stakeholders involved. The physical theories covered in this investigation include coastal processes such as longshore drift, coastal erosion via hydraulic action, and coastal management itself. There are also several theories for the human side of the investigation that involve the stakeholders. These include stakeholder dynamics, perception of place, and various balancing of costs and benefits of the coastal management. To judge the effectiveness of the coastal management physically, I used a sediment size survey and a sand height comparison survey to gauge the extent of its effectiveness at reducing erosion (as per the first sub-question). I used two questionnaires tailored to tourists and local residents to gain understanding of each stakeholder’s opinions on the matter, then gathered data of the footfall in particular areas along with the car park activity; this helps answer sub-questions 2 and 3. Several local business owner interviews were also necessary to gain another stakeholder’s opinions on the town/coastal management so I could answer sub-question 3. My main findings were that the coastal management at Swanage does overall create more winners than losers to a considerable extent. All three of the sub-questions came through with positive feedback and the clear creation of winners for all of the stakeholders that I investigated. This research is helpful in analysing whether the coastal management in Swanage is beneficial to the stakeholders that I investigated and therefore whether or not it was worth the cost and effort. The overall answer to that question is yes, it is very beneficial to them.

Study Framework:

At the beginning of my investigation there will be an introduction. This is included to give background knowledge on the location I chose, the topic I am covering, and what the investigation will actually involve doing.



The second stage is the methodology which includes my methods I chose, how and why the methods are useful, how I carried out the methods, an evaluation of each, and a detailed risk/ethics assessment of my fieldwork.



Next comes the presentation and analysis of the primary and secondary data I collected. Each piece of data is individually presented, then has an analysis/mini conclusion attached to it. This stage is key in understanding the data I collected and using it to answer my three sub-questions.



The conclusions I made come after the data presentation/analysis. During the three conclusions (one for each sub-question, then a short summary) I explain what I expected to see, then compare it to what the data showed. This allowed me to draw a conclusion to each of the sub-questions.



An evaluation is also included after the conclusions to critique the investigation as a whole. This is done, having already evaluated the individual methods during the 'methodology' section of my investigation.

Introduction to investigation

My investigation title is 'To what extent does Swanage beach management create more winners than losers?' Swanage is a town located on the southeast Dorset coastline and is the most easterly town on the Jurassic coast. It has a Blue Flag award winning sandy beach and is the only *natural* UNESCO

World Heritage site in Britain. The Swanage area consists of bands of soft and hard rock and as a result of this a bay is formed

directly in front of the town where the less resistant clay has eroded quicker than the more resistant limestone, a sedimentary rock comprising primarily calcium carbonate. The town would be at severe risk of erosion if the coastal management was not there because the soft rock would erode quickly.

The term 'coastal management' refers to the various methods used to protect the coastline. These include hard engineering methods such as groynes, rock armour, sea walls and then soft engineering such as beach replenishment. In the case of Swanage, it is mainly timber groynes and a stone sea wall. 'Winners and losers' refers to the stakeholders who either do or don't benefit from the coastal management at Swanage. My investigation aims to gain a detailed

understanding of the effectiveness and worth of the beach management by looking into the impact on stakeholders involved; it is important to understand whether the coastal management is meeting their needs and at what cost. Figure 1.1 shows how the Dorset Council defines the Swanage town and area, but I will be focusing on the smaller area shown in Figure 1.2 because it is where most of the coastal management is, plus is where tourists prefer to visit because of the sand bay. The coastal management at Swanage sits in front of a great deal of local businesses and residential homes to protect them. Plus it protects the sand beach which is a key attraction for tourists and essential in reducing coastal erosion/flooding.

The timber groynes were originally built in 1925 (Royal Geographical Society) and were then re-constructed in 2005/6 due to gradual damage and consequential ineffectiveness. The sea wall was initially built in the late 19th century and then reinforced/extended in the 1920s and 30s to cover

more of the bay and coastline. The short Outfall Jetty was constructed in 1993 to reduce longshore drift (sideways transportation of sediment along a coastline) and loss of beach sediment, however this also resulted in a severe lack of sediment which the 2005/6 groynes and beach replenishment addressed (Royal Geographical Society). The management strategies currently in place (2023) protect up to £20 million of assets (Swanage Beach Management Plan).

Sub questions:

1. To what extent is the coastal management at Swanage working at reducing erosion? This will prove whether the management is actually having an effect and therefore whether it affects stakeholders.
2. To what extent do tourists benefit from the coastal management? This allows me to understand whether tourists still enjoy the town and therefore whether the tourist sector benefits the town.
3. To what extent do the residents and local businesses benefit from the coastal management? These are the two stakeholders who are likely to be impacted the most by the coastal management, so it is

important to understand their situation relating to it.

Figure 1.1: Swanage map (Dorset Council)



Figure 1.2: My investigation area (Google Earth)



The 'Swanage Beach Management Plan', first introduced in 2005 and then updated in 2020, is a detailed plan formulated by the Dorset Council to protect the Swanage coastline. It covers the central part of the Swanage Bay coast (shown in Figures 1.2 and 1.3) and the objective is to '*inform, guide and assist the responsible authorities and organisations in managing the beach.*' It aims to

Figure 1.3: Swanage BMP area



consistently manage the risk of coastal erosion and flooding by maintaining satisfactory beach levels through the use of existing structures (the groynes, sea walls and jetty) and necessary replenishment of sand.

Risk assessment for Swanage fieldwork:

<u>Hazard</u>	<u>Risk</u>	<u>Controlling risk</u>
Tide	Caught off guard by tide coming in, possible tsunami	Check tide times and stay within them. Be familiar with signs of a tsunami and plan possible escape routes/high ground.
Weather	Excessive sun exposure could cause sunburn/ heat stroke. Rain may cause slippery surfaces.	Check weather to see temperature. Wear suitable hat (wide brim) and wear factor 50 sun -cream. Wear suitable walking shoes/boots. Bring appropriate clothing to stay cool/keep warm.
Travel	Becoming tired whilst in the car. Car crash/ break down. Getting lost	Whilst driving, make sure to take regular breaks and stay alert whilst on the move. Follow laws/advice of the highway code. Drive at an appropriate speed for the conditions. Slow down if road is slippery. If road is icy, do not travel. Check tire pressures. Check tire tread levels. Check oil level. Check coolant level. Make sure vehicle is taxed, insured for the driver, and has a valid MOT. Plan route beforehand, input into reliable sat nav before starting journey. Undertake a practice journey before fieldwork.
Traversing beach and town	Falling over and injuring yourself. Getting lost. Assaulted by pedestrian. Becoming separated from group	Wear suitable shoes for terrain (walking boots for ankle bracing) and bring first aid kit. Have emergency contacts saved in mobile phone. Study area on map before going. Keep map saved onto your phone in case you lose signal. Bring physical OS map in case of digital failure. Stay in area planned beforehand. Stay in designated (pre planned) and well populated areas that tourists visit. Do not walk around on your own, stick with at least one other person. Always stick together. Avoid large crowds. Agree meeting place if separation occurs. Save each other's phone numbers in phones.
Medical emergency	Possible allergic reaction Underlying health conditions Injury	Become familiar with any allergic reactions of group. Avoid the triggers and bring necessary counter methods just in case (EpiPens. etc). Check that group does not have any underlying health conditions, bring counter methods if they do. First aid kits.

Field methodologies and data collection/evaluation:

<u>Type of data collection</u>	<u>Why data is needed</u>	<u>Method for collection</u>	<u>Frequency and timing</u>	<u>Comments: accuracy and errors</u>
Sediment height survey	This allows me to understand whether or not the groynes are working at reducing longshore drift. This is related directly to sub question 1 because the groynes are one of the main parts of the coastal management in Swanage.	I used a meter ruler/tape measure to measure the distance between the top of the groyne and the sand level below; both the North and South sides were measured so as to get a comparison between the two sides.	I chose the bottom 10 groynes of the beach because those are the most important (they have the most assets behind them and they protect the beach), plus it would have been unrealistic to do every single groyne on the beach. Shown in Figure 1.4. I conducted this data collection method at low tide so as to get the most accurate result. I measured the sediment distances on the third pillar away from the sea wall for every groyne. This position was the best because it was the pillar least affected by the back of the beach, and also the one with the largest visible contrast on either side of every groyne.	N/A
Sediment size survey	This also allows me to understand whether or not the groynes are reducing attrition of sediment through longshore drift. This is related directly to sub question 1 because the groynes are one of the main parts of the coastal management in Swanage.	I used callipers to measure the widest points of large sediment on either side of the chosen groynes (See Figure 1.4)	I measured the sediment size on the same ten groynes as state above (See Figure 1.4). I did this at low tide so as to reveal the most sediment. I picked the closest piece of sediment to each pillar to avoid bias. Starting at the third pillar and moving outwards, I measured a piece of sediment every other pillar up to the water (3 pillars so three pieces of sediment). I chose to	The callipers I was using were plastic and very big, possibly not accurate enough for measuring some of the smaller sediment. I could have used more precise, smaller metal callipers to get a better chance of being accurate.

			do this to get a wider variety of sediment sizes; the ones closer to the water were smaller. This was done both sides of the groyne so I could compare. It was unrealistic for me to do this process for every groyne, so I did it for every other one (1,3,5,7,9).	
Questionnaires	This allows me to understand viewpoints of different stakeholders. I needed to get opinions of local residents, local businesses, and tourists. I created two separate questionnaires with questions chosen for the audience I wanted to gather evidence for. These questions relate to sub questions 2 and 3 by gathering evidence as to their opinions on the town/coastal management.	I completed 40 questionnaires over two visits: 20 for each questionnaire. This is a significant number and is suitable to gather accurate evidence. Figures 2.1 & 2.2 for the questions	I used opportunistic sampling to interview people. The first one completed was on a Sunday afternoon and the other on a Monday morning which gives two separate sets of people to ask. E.g.: Sunday afternoon would have presented more tourists and people at leisure enjoying the surroundings	I probably did not avoid bias even though I chose opportunistic sampling. I might have chosen a person because of what they were doing (having fun on the beach or walking with a briefcase, etc). I could have avoided bias by choosing every 4th person I saw, or something similar. The weather was extremely hot and sunny, meaning tourists would have been out.
Activity mapping	This allows me to make a judgement on what the overall activity around me is (families on beach, headed to work, getting something to eat, etc). It relates to both sub questions 2 and 3.	I made observations on whether the coastal defences seemed like an issue to anyone, and whether they avoided/embraced it. I went to two pre-chosen areas at 3 separate times for each and recorded the activity I observed. The sites I used are the main beach south of the jetty, and the main high	3 separate times give a wide range of data and is likely to include different people. The times were 10:00, 13:00, 16:00. These times are likely to have different people doing different things because they are each a separate time of day. For example, at 13:00 there is likely to be lots of people	It is likely that most of the activity was recreational due to the fact it was recorded on a Sunday. The weather was extremely hot and sunny, meaning tourists would have

		street. Locations shown in Figure 3.1. The beach was chosen because it is likely to have many tourists/people enjoying recreation, and possibly some residents commuting. The high street is another place where there will be a focus of people, both tourists and residents.	getting lunch, whether tourists or residents.	been out. I could have avoided this and gained a wider range of results by doing this on more days of the week. It is based on my opinion on the events around me and other people may perceive the activity differently.
Footfall survey	A footfall survey allows me to observe the popularity of areas at certain times by counting how many people are around me/ walk past me. It relates mostly to sub question 2 but can be linked to 3.	I sat down at 3 times at two specifically chosen places. The sites I used are the main beach south of the jetty, and the main high street. Locations shown in Figure 4.1. The beach was chosen because it is likely to have many tourists/people enjoying recreation, and possibly some residents commuting. The high street is another place where there will be a focus of people, both tourists and residents.	3 separate times gave a wide range of data and was likely to include many different people. The times were 10:00, 13:00, 16:00. The levels of people in the chosen areas are highly likely to be varied at these times because each is a separate time of day.	There is always the chance that I counted someone twice, so might have slightly inaccurate results. These were completed on a Sunday, so are unlikely to include many people travelling to and from work.
Car park survey	A car park survey allows me to see the popularity of an area for tourists, because local residents are unlikely to park in the tourist aimed car parks to walk around the town. This means that it links to sub question 2.	I counted all the cars in 2 separate car parks at 3 separate times. The car parks I chose were 'Main Beach' car park (Figure 5.1) because it is advertised as the main car park for the beach and is likely to be heavily used, plus it is the biggest car park. The next site was the parking area along the sea wall on the beach front (Figure 5.2) because it is right next to the beach and is likely to also get a lot of attention.	I chose the times of 11:30, 14:30 and 17:30 because three times is adequate to get a wide range of results, plus the times are likely to mean different levels of cars.	I was driven around/past the parking areas and used a clicker app to count the cars I saw. There is a chance that I miscounted them through human error. To try and avoid error, I counted the number of cars twice and used the mean average for the final result for that time.

Interview with local business owner	An interview with a local business owner is a way for me to get realistic and direct qualitative data of the business owners' opinion on the coastal management and whether or not they think it has benefited them. It relates directly to sub question 3.	I approached 6 local businesses, 3 of which were happy to talk to me. I asked them some pre-chosen questions (see Figure 6.1) and then transcribed their answers. All three preferred to remain anonymous in terms of their name and their business.	I think that 3 businesses is an appropriate amount for accurate results.	
House price research (secondary)	House prices may indicate if the coastal management has or has not had an effect on the value of the land. It would be useful to know this because it relates to sub question 3, specifically local residents.	I will research and record the difference in house prices in Swanage before and after coastal management/management repairs. I will choose houses close to the coastline, because they are the most likely to be affected.	N/A	Will need to calculate inflation to get an accurate price comparison.
Erosion rates research (secondary)	This will allow me to understand if the erosion rates were higher before the coastal management was introduced and then improved. Information like this will directly relate to sub question 1 because it helps me understand if the coastal management is working.	I will research what the erosion rates would have been without any kind of intervention, then calculate how much land would have been lost and whether or not this land was valuable or not.	N/A	

Ethics

When I approached people for the questionnaire, I made sure to be concise and respectful to the person I talked to. The questions were non-offensive and I made sure to be clear that it was anonymous. The questions were not intrusive and only asked about the person's opinion on the coastal management. Any fieldwork I collected was done so without disrupting the area and always keeping to local rules. I will reference/have referenced any secondary data sources to avoid the possibility of plagiarism.

Figure 1.4
map showing
chosen
groynes.



Figure 2.1
Questions for
resident
questionnaire.

Coastal management questionnaire – residents

1. On a scale of 1 – 10, how visually unattractive do you find the sea wall and groynes?
2. Do you feel that the defences detract from the beauty of the area? Yes/no
3. Do you feel the coastal defences provide a sense of safety? Yes/no
4. Would the appearance of the groynes and sea wall put you off visiting the beach? Yes/no
5. Are you aware of any community dislike towards the defences? Yes/no
6. Are there any key words you might use to describe the coastal management?

Figure 2.2
Questions for
tourist
questionnaire.

Coastal management questionnaire – tourists

1. On a scale of 1 – 10, how visually unattractive do you find the sea wall and groynes?
2. Would the appearance of the groynes and sea wall put you off visiting the beach and town? Yes/no/somewhat
3. Have you benefited from the shops available in the town? Yes/no/somewhat
4. Have you benefited from the cafés/restaurants available in the town? Yes/no/somewhat
5. Would you/will you visit the Swanage town and bay again? Yes/no/maybe
6. How would you describe the town and its coastal management in three words?

Figure 3.1
Map
showing
chosen
activity
mapping
areas.



Figure 4.1
Map
showing
chosen
footfall
survey
locations.

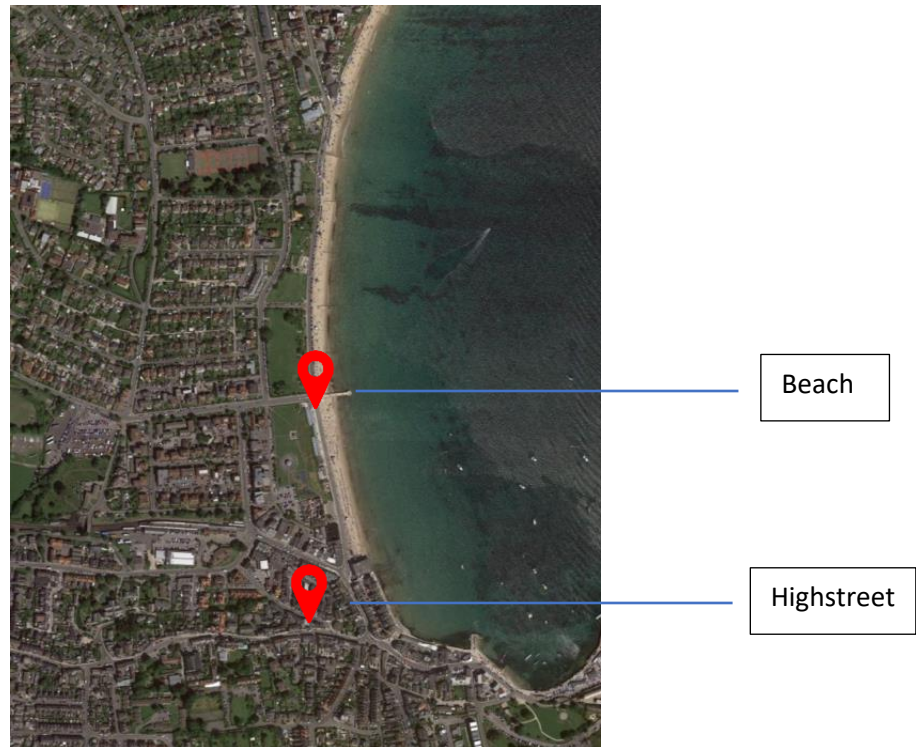


Figure 5.1
map
showing
parking
along
Swanage
sea wall.



Figure 5.2
map
showing
Main Beach
car park
Swanage.



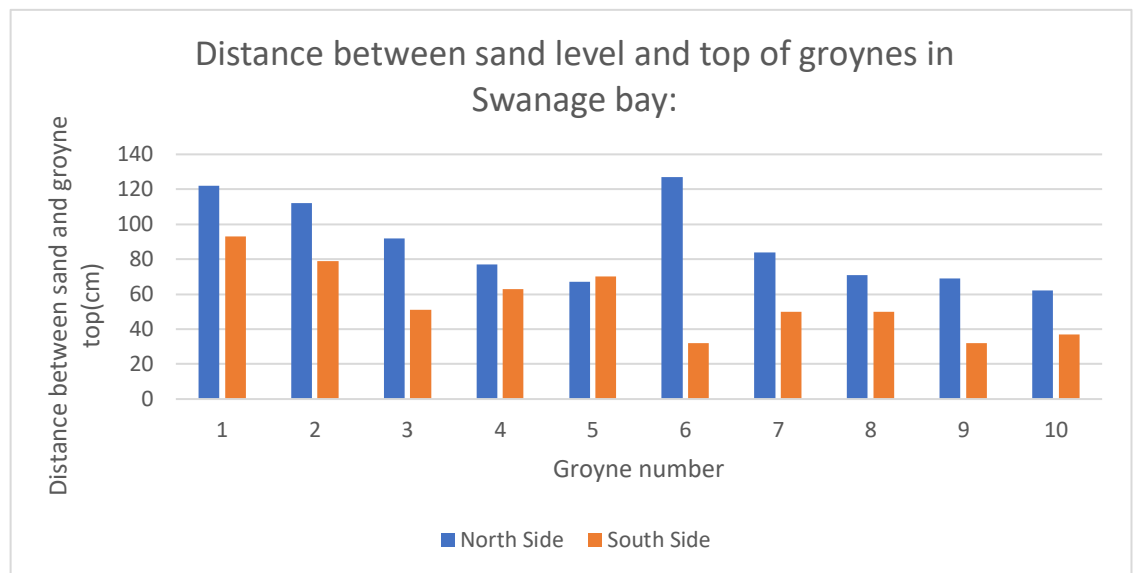
Figure 6.1
Local
business
owner
questions.

Local business owner questions:

1. Are you busy at this time of year?
2. Do you feel any negativity towards the coastal defences from your customers?
3. How would you describe your feelings towards the coastal defences?
4. In your opinion, does the coastal management benefit you and your business?
5. Is there anything you think could be done differently with the defences to help you and your business?

Data Presentation and Analysis

Figure 7.1:
Comparative
bar graph
showing
sediment
heights for
chosen
groynes:



In this graph, the smaller the number, the higher the sand level because the numbers on the graph show the distance between the top of the groyne and the sand below it. There is a clear difference between the sand height on the North and South side of each groyne (with the exception of number 5 which is an anomaly). This suggests the presence of longshore drift because the build-up of sand on one side shows increased sediment transportation along the shoreline, in this case from South to North. This difference in sand height proves that the groynes are successful at catching sediment and reducing the effect of longshore drift because otherwise if they weren't successful, the sand levels on either side would be roughly the same. This is one set of data to prove that the groynes are effective at retaining the existence of the sand beach and therefore reducing erosion. There is however one anomaly at groyne number 5 due to interference from a water pipe on the North side of the groyne.

**Sediment size for
North and South sides
of alternating groynes:**

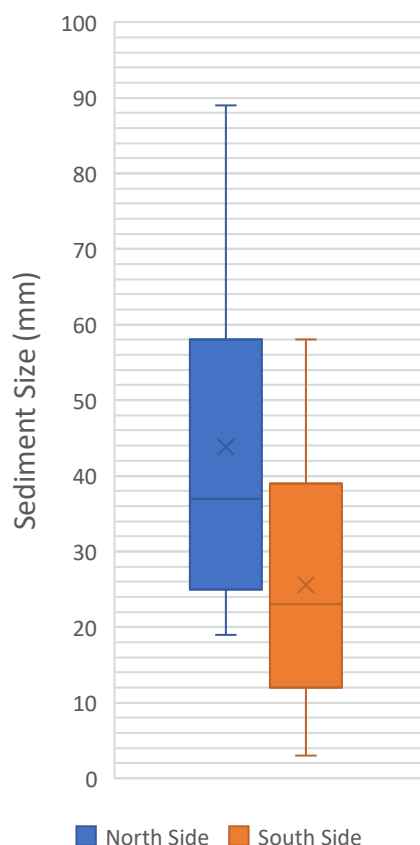


Figure 7.2: Box whisker plot
showing different sediment
sizes either side of chosen
groynes:

For these groynes to be proven effective, hypothetically the sediment needs to be smaller on the South side because that is where the longshore drift should be causing attrition. If the sizes are roughly the same on both sides, then it is likely that the groynes are not being effective or are not applicable to the direction of the current. The box plot on the left shows a clear difference in sediment size between the North and South sides; the sediment is smaller on average and overall on the south side. This means it is likely that longshore drift is travelling from South to North and that the groynes are reducing its attrition on the North side. This is another set of data proving the success of the groynes at reducing the effects of longshore drift.

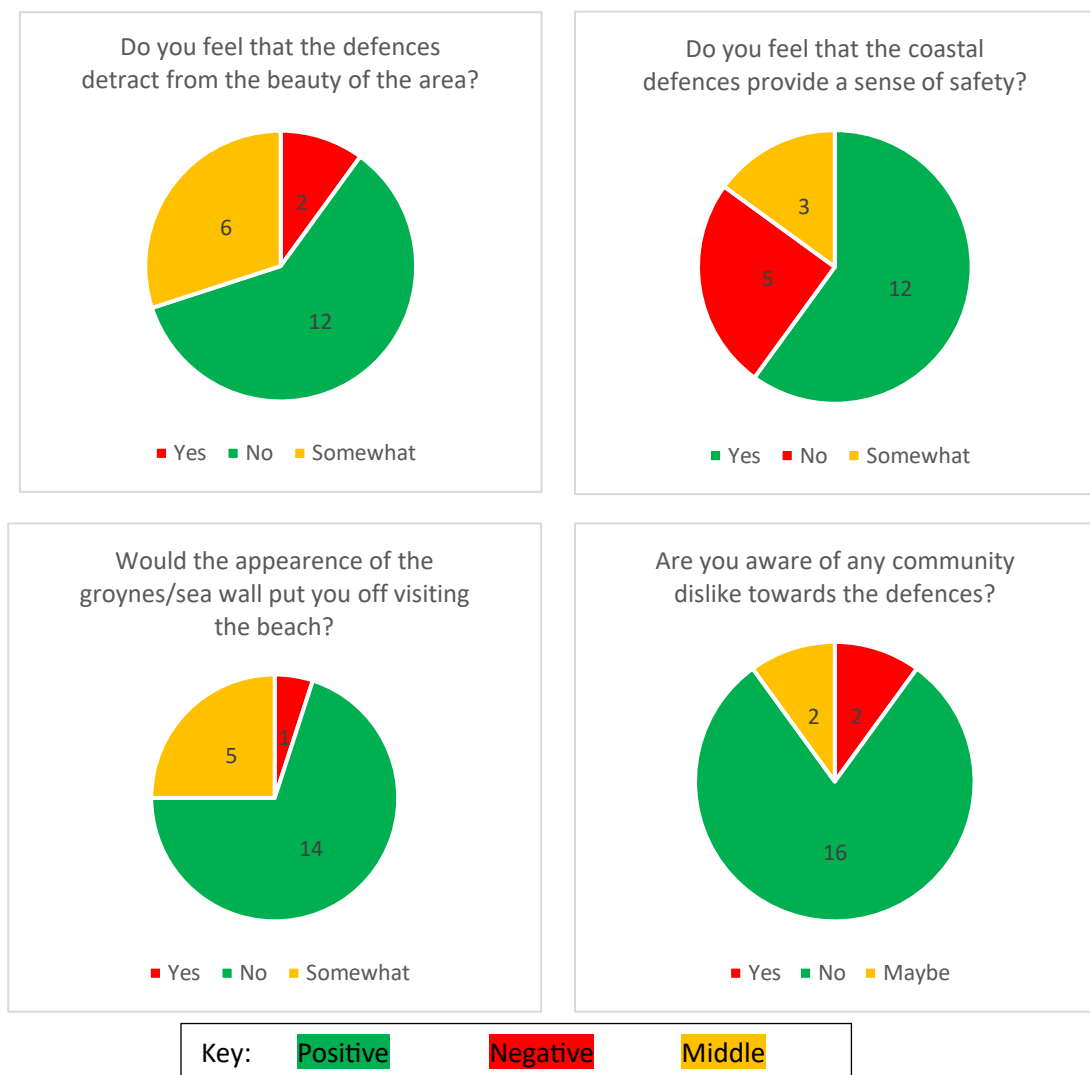
Residents page:



Figure 8.1:
Word cloud of
words from
local resident
questionnaire:

The word cloud on the left shows the Swanage local residents' general opinion of the coastal management methods through key words they gave me. for reference, the larger the word is displayed, the more frequently it was used. Some of the largest words shown on the cloud are positive and accepting of the management. However, not all the words reflect a good opinion; the word 'expensive' is one of the larger ones which shows multiple people think the operation was costly. There are also single use negative words, but also quite a few indifferent terms such as 'enough' and 'tolerable'. I think that overall a positive opinion of the management is presented because of the larger, more frequent words being 'necessary' and 'useful'.

Figure 8.2: Pie charts showing answers for the local resident questionnaire:

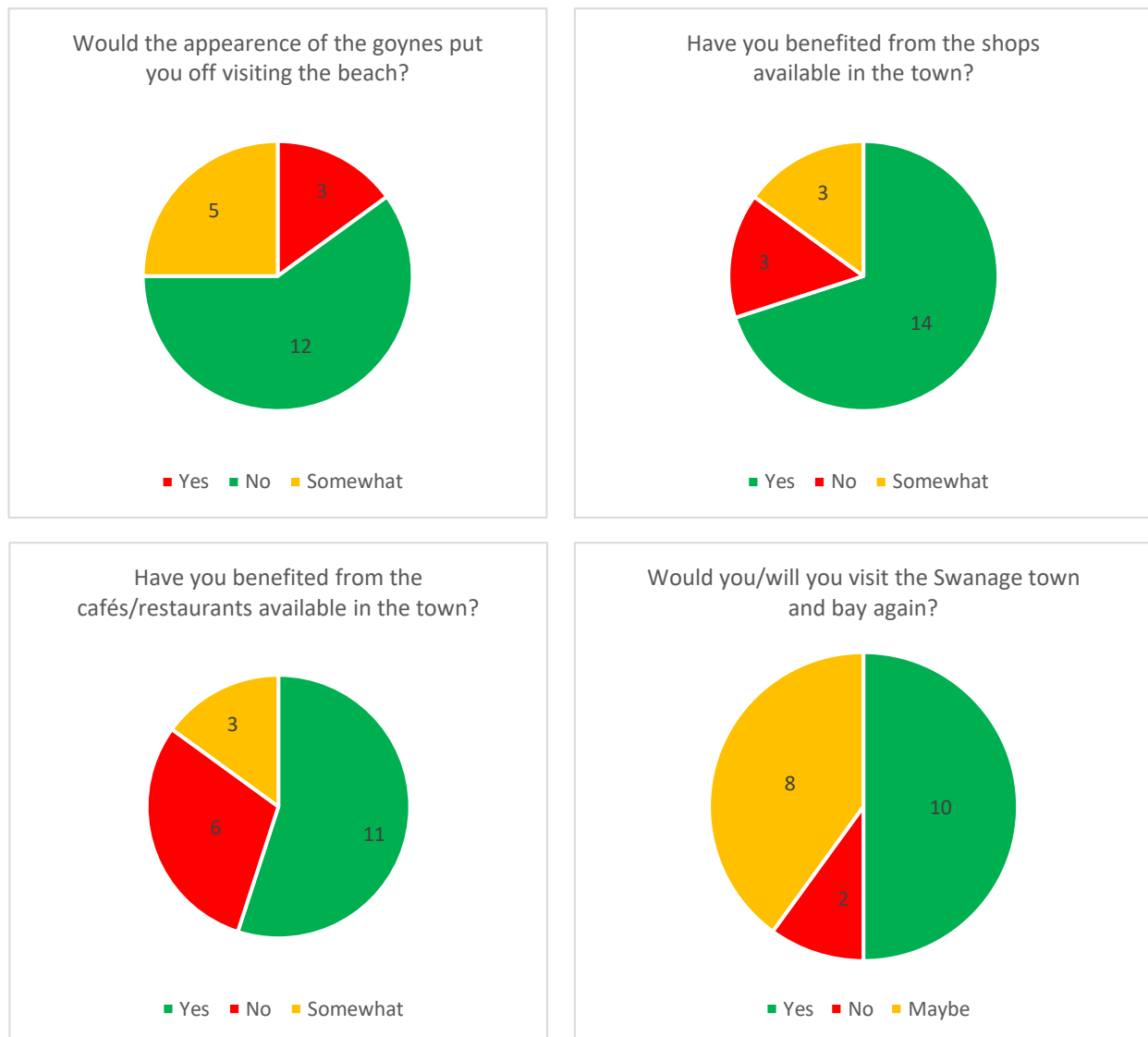


Above (Fig 8.2) are pie charts representing answers to the local residents' questionnaire that I conducted. It is clear that the general view of the coastal defences and the town they live in is exceptionally positive. This is seen clearly in the charts by an overwhelming abundance of positive answers and a significantly harsh ratio of positive to negative. Most people said the defences did not detract from the beauty of the area or put them off visiting the beach which means the defences are a huge benefit because they are able to protect the residents' town whilst not being much of an eyesore or an inconvenience. This would be different if the defences still were effective at protection, but also looked very unattractive to the point of putting residents off visiting the beach. Another huge benefit displayed by this data is the fact that most people said the defences provide a sense of safety; one of the most important things in the place where you live is being able to feel safe. So overall this set of data can show that the local residents of Swanage do benefit from the coastal defences.

Tourists page:

Key: Positive Negative Middle

Figure 9.1: Pie charts showing answers for the tourist questionnaire:

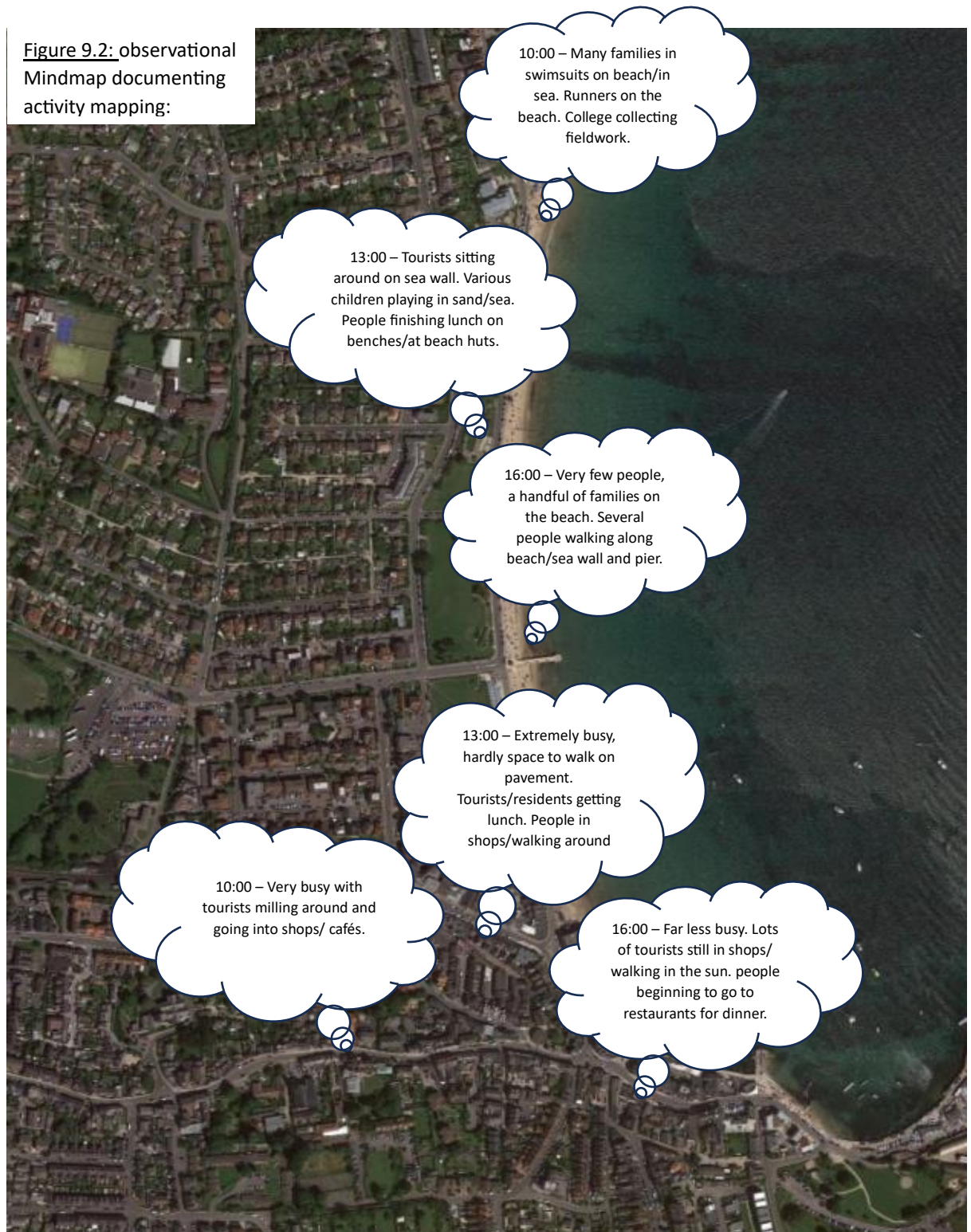


Positive: Negative answer ratio 47:16

Above (Fig 9.1) are pie charts representing the answers I got when conducting the tourists' questionnaire. It is clear from these charts that the overall opinion on the coastal management and the town itself was positive. This can be seen visually in the charts and statistically in the ratios of positive to negative answers. The fact that most of the people I asked had benefited from the shops/cafés/restaurants is important because without the coastal management and protection, these services would be severely at risk and may not exist at all. Plus, the majority answer to whether or not they would be put off from visiting the beach was positive, and without the coastal management it is likely that there would not be a beach there at all due to longshore drift transporting the sediment away. The majority of people also said they would visit the town and bay again which means they had benefited from/enjoyed the town enough to come back. This is both a positive for the tourists because they enjoyed themselves, but also a positive for the local residents/businesses because tourism and commercial activity is the main source of income for the Swanage town economy. This set of data therefore adds to the argument that the tourists and also local residents/businesses have benefited from the coastal management.

Observational Mindmap for activity mapping:

Figure 9.2: observational Mindmap documenting activity mapping:



When recording my activity mapping, I could not see any evidence of anyone being inconvenienced or offended by the coastal defences in any way. The people were mainly tourists and they seemed to be wandering around town and along the beach quite happily. The sea wall is a major walkway along the back of the beach and from what I could see it is a highly appreciated construction for people to park their cars and sit upon. The Banjo Pier appeared to be a popular spot for getting a sea view and eating lunch, so the pier in itself looks like it benefits the town. Overall there was a very positive or even indifferent atmosphere towards the defences; I think people mainly didn't think about them which shows the majority does not have any issue with them. This is another piece of data that can show how the defences benefit the local residents and tourists.

Local business owner quotation banks:

Figure 10.1: quotation bank from interview with local business owners:

"I've been asked about this before and my answer will be the same as it was for the other student. I think that the coastal management is very widely appreciated through town and with the tourists because it protects such a nice little area."

"Many of the people that come in here stop and chat to me for a bit and they never come complaining about the wall or breakwaters. They just don't think about it and neither do I to be honest with you."

"I often hear my customers talking when they're sat down and its usually the weather and the nice town and all that, you know? I sometimes hear a bit about the sea wall, nothing bad though. Probably about the beach huts and how expensive they are."

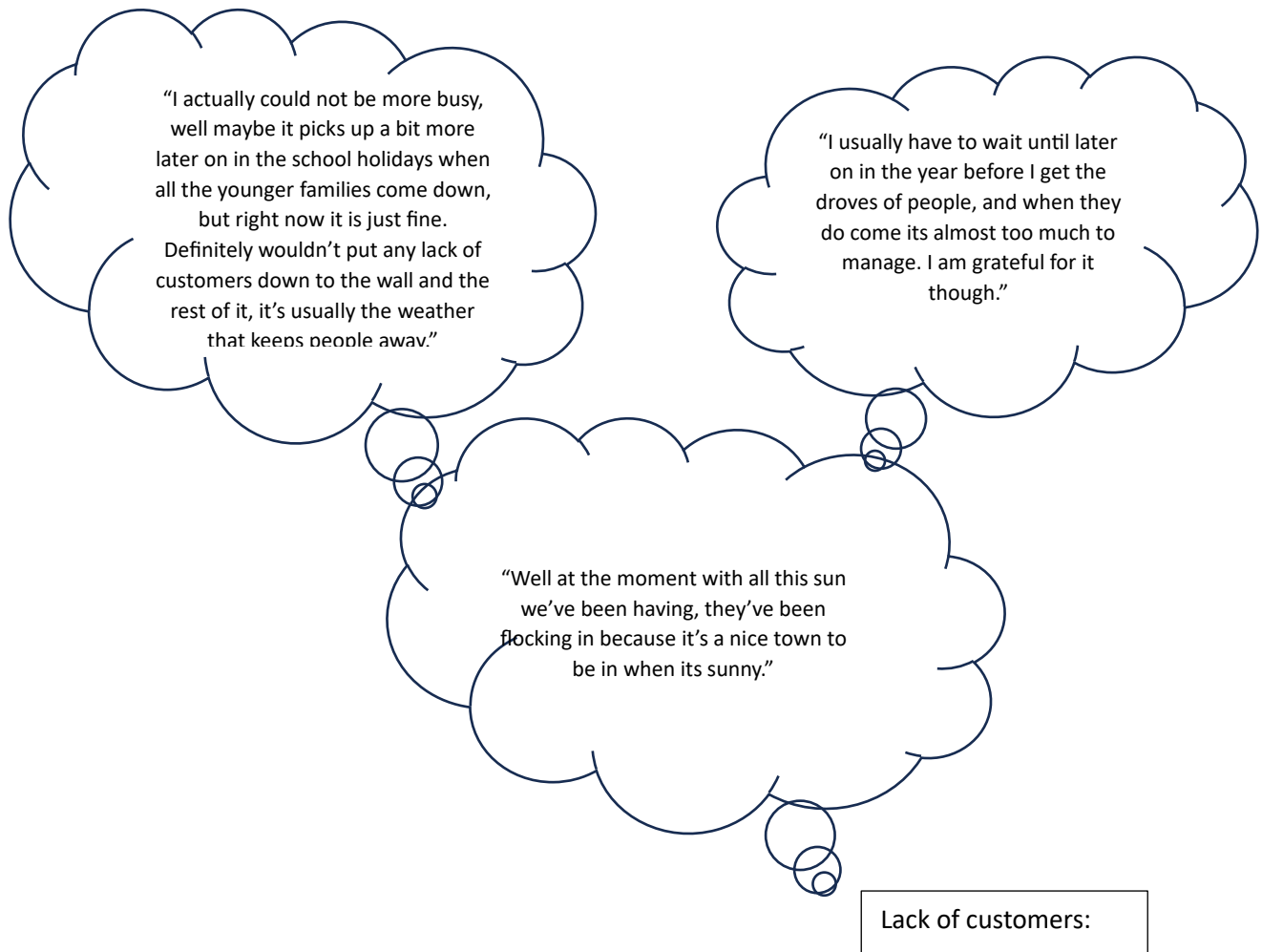
Opinions towards the coastal defences:

"I think it would be nice to introduce some kind of living section along the back of the beach or behind the sea wall, I don't know. I've always liked the idea of having plants, just for decoration really, along the wall to make it a bit more pleasant."

"Maybe an increase in putting that new sand on the beach could be good. I often see the bit of the beach next to the pipe opening...lacking some nice sand and it can sometimes look a bit ugly."

"The main thing is for them to look alright and do what they were built to do. In my opinion, both of those things are happening right now and I'm not having to sell up because the sea is coming towards me so I reckon there's nothing more to be done. You'll know more about it than me though."

Possible improvements:



During my interviews with the three business owners I was able to gather that neither they themselves, nor the customers they served had any real issue with the wall. There were a couple of mentions of how the wall might be decorated to make it look more appealing; one of those answers is shown above. Overall their attitudes were positive and they did not seem to be affected in a negative way by the defences.

Erosion rates secondary research:

According to the Swanage Beach Management Plan, the rate of coastal erosion Swanage would experience without its current defences is considerable; it states, "if the Swanage coastline was left un-addressed under a no active intervention scenario, coastal erosion would occur rapidly at a rate of 0.5 to 1.0m/year." Theoretically then, since the current management strategy was fully implemented in the 1920s, in 2023 (100 years later) the coastline could have eroded up to 100m in that time if left unattended. The approximate measurement in Figure 11.1 shows that if the shoreline had eroded 100m, much of the main Highstreet would be lost.

Figure 11.1: approximation of 100m from current shoreline at Swanage



Conclusions:

The main question for my investigation was 'To what extent does Swanage beach management create more winners than losers?' I chose three sub questions to help me answer this question, each concluded below.

Question 1: To what extent is the coastal management working at reducing erosion?

I expected to see a clear difference between the sediment levels and sizes on either side of the groynes to prove that they are working because there is still a substantial beach there; the beach is one of the highest quality beaches in the United Kingdom, winning the Blue Flag award. If the groynes were not having an adverse effect on the longshore drift, it is likely that there would either be a far less substantial beach or simply not a beach at all because the longshore drift would transport the sediment away and the sediment would not be able to build up into a beach.

The data I collected for both sediment levels and sizes either side of the groynes proved quite conclusively that the groynes are effective to a relatively significant extent at reducing longshore drift. There was a vast difference in sediment levels and sizes for almost every groyne with the exception of a couple of anomalies. This means that the groynes are able to successfully retain the beach which is an essential part in the reduction of erosion to the main coastline behind; the beach absorbs the energy from any destructive waves and acts as a sort of barrier. However I did not collect data to prove the same success for the other coastal defences which means I cannot conclusively answer this sub question if I include the other defences. From the data I have collected though, I can say that the coastal management is working at reducing erosion to a significant extent.

Question 2: To what extent do tourists benefit from the coastal management?

I expected to receive an overall positive opinion towards the defences and the town in general from the questionnaires and activity mapping that I conducted. In the activity mapping I expected to see tourists making use of the beach and walkway of the sea wall, as well as the shops, cafes, restaurants and the main high-street. This is the scenario in which the coastal defences are benefiting the tourists.

Both the questionnaire data and the activity mapping presented the conclusion that overall, tourists have either positive opinions towards the coastal defences or they are indifferent towards them but appreciate them for the fact they protect the town. In the questionnaire, only 20% of answers (see Figure 9.1) were negative and the rest either positive or indifferent. The activity mapping mainly consisted of tourists enjoying recreational time and local residents going about their business. There were several counts of tourists enjoying the beach and the shops and cafes were bustling, especially around lunch time. I did not observe there to be anyone particularly avoiding the beach but then again, I would not see the people who did not choose to be there. I think overall this data allows me to conclude that tourists benefit from the coastal management to a reasonable extent. The answers to the questionnaire however were not entirely overwhelmingly positive so I therefore cannot conclusively prove the total benefit of the tourists.

Question 3: to what extent do local residents and businesses benefit from the coastal management?

I expected the local residents to have a positive attitude towards/benefit from the coastal management because they have chosen to live there; the house prices in Swanage are most definitely above the average of the UK because it is a well maintained, picturesque coastal town. If the defences were a known issue, the house price and popularity in the town would not be as high as it is.

From the data I collected it is clear that both the local residents and businesses benefit from the coastal management in Swanage. An overwhelming proportion of the answers from the resident questionnaire were positive (see Figure 8.2) along with the vast majority of the words from the word cloud (see Figure 8.1). It was clear to me that the management was not an issue visually, especially through the eyes of the local business owners in my interviews with them. Considering that the sea wall and groynes have protected the erosion of 100m (see Figure 11.1), it is clear that they are a benefit because otherwise many businesses and homes would have been lost. Moreover, the groynes have protected the award-winning beach which is one of the main tourist attractions of the town. Tourism and commercial activities are Swanage's main sources of income which means the groynes are incredibly beneficial to the town's economy. Due to these factors and the fact that I had no feedback from local business owners that they disliked the appearance of the defences, I can conclusively prove that local business owners have benefited from the beach management to a significant extent. However, I cannot prove the same for the local residents because there was not a 100% agreement on the positivity of the groynes; in this case they only benefit to a reasonable extent.

Overall due to the conclusions taken from the three sub questions above, I can determine that the coastal defences produce significantly more winners than losers. The benefits from the defences far outweighed the negatives for all three stakeholders I chose to investigate.

Evaluation:

The selection of primary data sources that I chose gives an accurate representation of the investigation that I conducted. The only possible issue here is the secondary research methods that I planned to do. I was unable to complete two of the secondary research methods that I originally detailed in my methodology section and proposal form: house price comparison, and research on the expenses of the management. I could not find any records of Swanage house prices from a time before the coastal management was introduced, which meant I could not make a comparison of the house prices before and after. I was also unable to compare the monetary cost of the management to the monetary benefit that it gave. This is because there were no real, defined costs; lots of results gave different answers. The lack of these two secondary research methods could be a relatively significant drawback of my investigation. When it came to presenting and analysing my primary data collection, I realised that both the car park survey and the footfall survey were both difficult to properly relate to the sub-questions. This led me to not include them in my analysis or my conclusions; this is another drawback to my investigation.

Bibliography:

Jurassic Coast of Dorset and East Devon. (n.d.). Rgs.org. <https://www.rgs.org/schools/teaching-resources/jurassic-coast-of-dorset-and-east-devon/Swanage-coastal-management/> (Accessed: 28 June 2023)

Frampton, A., Wadey, M. and Barnes, C. (2020) Document: 1 version: 2 Swanage Beach Management Plan Update 2020, Dorset Council. Available at: https://www.dorsetcouncil.gov.uk/documents/35024/282053/Swanage+BMP+2020_FINAL_2020-08-25-min.pdf/6749c9a9-51ca-26eb-77ca-f0e1eea93a8e?version=1.0&t=1624786894518 (Accessed: 29, 30 June, 4 August 2023).

Google.com. from <https://earth.google.com/web/@0,-1.57040015,0a,22251752.77375655d,35y,0h,0t,0r> (Accessed: 28, 29 June, 4, 16 July 2023, more).

Gov.uk. Dorset Council
<https://www.dorsetcouncil.gov.uk/documents/35024/2254502/Map+of+Swanage+Neighbourhood+Area+-+Designated+20220222.pdf/0edc2535-6ea5-ad1f-ecad-a5133bd85d98> (Accessed: 28 June 2023)

Five Fun Things to Do in Swanage Theupcoming.co.uk.
<https://www.theupcoming.co.uk/2020/10/12/five-fun-things-to-do-in-Swanage/> (Accessed: 10 October 2023)