

Defence system cost

[Technology](#), [Development](#)



My results proved that my hypothesis was correct because it showed that the more money that was spent on the sea defence system the higher was the structural and aesthetic effectiveness. However, as it shows in my results there is one result that is inconsistent. At Moat Farm the gabions that are used cost only £200 per metre but were nearly as effective as the fish tail groyne situated at North Walney that cost 5000 per metre!

The gabions received a high structural effectiveness rating of 8. This is due to how solid and effective the gabions are. They also allow a lot of deflection and percolation of wave energy. Also, in the graph showing the aesthetic effectiveness compared to the cost of the sea defence again the system at Moat Farm did not follow the pattern. Moat Farm got a rating of 6, at only costing 200 per metre. Comparing this to Kingfisher factory where the sea defence system cost 1,000 per metre and got a poor aesthetic rating of only 4.

Excluding the result from Moat Farm, both scatter graphs above show a very strong positive correlation. The results showed that the most effective sea defence system that also happens to be the most expensive is fish tail groin that is situated at North of Walney costing 5,000. Generally the more the sea defence cost, the better it looked and the more use it was. There is a clearer correlation between the cost of the sea defence and the structural effectiveness than that of the aesthetic effectiveness compared to the cost.

Evaluation

To make this study better I think I need to study a lot more sites to produce a large sample to use in my graphs and data. For my Spearman's Rank

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tables to be really effective you need to use at least 15 pairs of ranked data however, I only used 6. To make my spearman's rank data more effective I should have looked at a minimum of an extra 9 pairs of ranked data. Also, a comparative study would have been very useful as I would have had double the amount of results to analyse and double the amount of research. I would have looked at a similar rural coastline such as Eastern Britain as it has similar geology due to the availability of boulder clay.

These studies could have involved more detailed coast benefit analysis. This involves looking at all the hidden costs and potential benefits in a numerical way. Another analysis that would have been very useful in this study is that of waves coming in toward the coastal defence system. We should have worked out how effective they are towards the system because obviously you have to study waves to test effectiveness. A good hypothesis for a study involving this would be - the more destructive the wave the more the coastal system is eroded.

Several coastal research indicates that the only effective way of managing the sea level rise in a rural area is using a method called 'planned retreat' which involves paying compensation to households who lose their properties and also directing services like roads, cable and water courses. More recent research shows that in rural areas it is better to let nature take its course by allowing 'natural realignment' this is where some parts of the coastline are allowed to erode naturally where coastal defences are not maintained and so parts of the coast are eroded whilst other are built up by coastal deposition, sand dune systems and farming salt marshes.