The Reactivation of Fashion Waste – A GIS analysis on Socio Economic Factors Affecting Consumer Habits

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Introduction

Climate change is apparent in many sectors of life and as citizens of Earth, changes must be made regarding the way we utilise resources. Many industries are considering their carbon emissions. Currently the fashion industry is responsible for 10% of the global budget and uses 93 million cubic meters of water per year, causing 20% global water pollution (Ellen MacArthur, 2018).

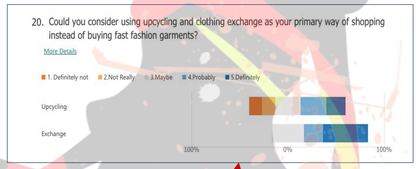
This research aims to analyse data collected during an action case study on ways to reactivate fashion waste and lengthen the lifespan of a fashion garment.

Using GIS this study considers the data from a socio-economic perspective, to understand further whether affluence and a variety of other socio-economic factors affect participants shopping habits and whether there are any patterns to these habits which might be changed with the correct provision of skill learning.

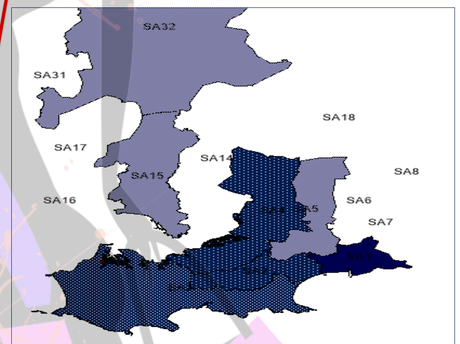
Materials and methods

Use of Excel and Map info to create GIS model using comparative analysis of patterns through Geo-visualisation. Data gathered in the investigation will be compared to spatial and social data sources and research into existing literature undertaken to help form conclusions.

Result



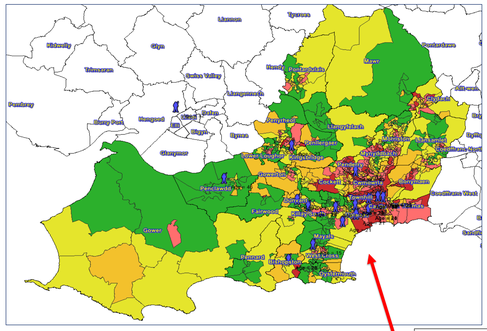
The question above was tested statistically to understand further whether participants could use these sustainable practices as their main way of shopping

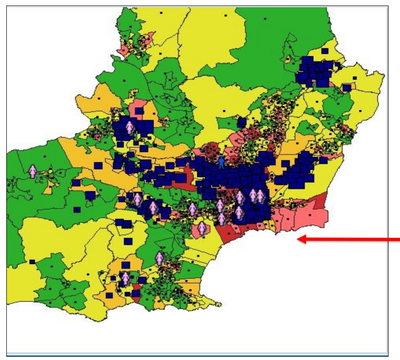


This is a thematic map showing what postcode responders came from 0=lower dark blue= higher



The GIS map to right shows the A road's over a Bing Raster





The Townsend index above showed that the greater majority of participants lived in SA1 and post code is shown on post code layer. The Townsend shows poverty set against points where respondents came from to understand further whether affluence affected shopping habits. To the left the map shows layers of point data alongside graduates unemployed and some correlation was found, though not conclusive

When you can see a trend, its easier to visualise it rather than have it in numbers (Larsen, 1999) and its easier to show the data to a non specialist that way rather than just giving them the data . GIS has its advantages over the physical methods because you are able to turn the layers on and off as you wish and manipulate the data by doing queries which would be much more time consuming (ESRI, 2019) without the Map info software

t-Test: Paired Two Sample for Means

	Upcyling	*Exchange*
Mean	3.26666667	4.06666667
Variance	1.78095238	0.78095238
Observations	15	15
Pearson Correlation	0.52894872	
Hypothesized Mean Difference	0	
df	14	
t Stat	-2.7026557	
P[T<=t] one-tail	0.00858357	
t Critical one-tail	1.76131014	
P[T<=t] two-tail	0.01716713	
t Critical two-tail	2.14478669	

The Statistical testing showed significance when comparing sustainable practices and found clothing exchange to be the more likely method to lengthen the lifespan of fast fashion garments

Conclusions

In Conclusion the data was limited due to the lack of full postcodes and though there were no obvious trends regarding affluence and the hypothesis was not proven, the visualisation of data did allow an understanding that in fact socio economic backgrounds did not make a difference when regarding sustainable practice and in fact participants both affluent and deprived had an interest in recycling. The greater majority of participants were from SA1, which is the city centre and makes sense considering many were students attending university in the city centre. The software has allowed a full overview of the data in the sense it has allowed visual analysis and understanding of data from a different perspective. The use of Townsend and infuse data helps provide an understanding of different areas and their socio-economic status in relation to the point data but due to the aforementioned issues, it was hard to draw any firm notable conclusions. When you can see a visual trend its easier to visualise it rather than have it in numbers and its easier to show the data to a non specialist that way rather than just giving them the data (Dhingra,2019). It has its advantages over the physical methods because you are able to turn the layers on and off as you wish and manipulate the data by doing queries.

Literature cited

Esri, 2019

Ellen Mac Arthur Foundation 2019

Pears, 2006

Acknowledgments

David Williams , Beverley Holland, Lara Hopkinson,

Further information

In future, full postcodes would prove useful and allow a more accurate understanding of participant locations, for example many participants resided in SA1 and so showed up as points on top of one another, with the full postcode, these would have potentially shown further patterns. Also with full postcodes further SQL queries would have been possible which could again have provided further and possibly more in-depth conclusions.