Examiner's commentary

The research is original and genuine, and it makes excellent use of theory and similar academic studies (ethnic succession and spatial assimilation). It is a thoroughly well-planned essay that combines primary and secondary data (including census data) and the analysis utilizes sophisticated tools, such as GIS mapping, annotated maps, statistical tests (Nearest Neighbour, Spearman rank) and the creation of a deprivation index that models a pre-existing governmental one. The discussion is excellent and detailed and includes inspiring ways of handling unexpected results establishing links to external factors, such as the impact of housing prices as one of the causes for the small amount of Nepalese population in Sandgate. The study refers to its theory (ghettoization and ethnic enclaving) throughout the analysis and the conclusion and presents a detailed critical evaluation. The reflections are excellent, they are full of personal engagement emphasizing the candidate's thought process, problems they encountered and how they overcame them. They are also filled with evidence about the actual learning process. The reflections are limited slightly as what would have made them worth full marks comes after the 500-word limit.

An investigation into the spatial patterns of the Nepalese population in Folkestone, South East Kent

To what extent have the minority ethnic group of the Nepalese in Folkestone integrated within the local urban area and community?

Extended Essay: Geography
Session: May 2019
Word Count: 3,995

Syllabus link (IB Geography):

Section:	
HL Extension:	- Empowering minority groups - Ethnicities and identities at different scales - Diversity and spatial interactions from local to global scales
Option G: Urban Environments	- Factors affecting the pattern of residential areas within urban areas (including ethnicity) - The incidence of deprivation in urban areas

Contents

**See Bibliography for the source of each figure, a full list of references and background reading.*

Introduction

Aim

No discrete study has been undertaken before into the impact and settlement of the Royal Gurkha Rifles (RGR) and its contingent Nepalese constituents in the town of Folkestone, on the south-east coast of England. The spatial interactions of this minority group influenced by factors including ethnicity, identity and urban social deprivation have never been studied within a geographic context. The aim of this essay is to investigate the degree of spatial assimilation of the Nepali speaking Nepalese into the majority white British Folkestone community. I intend to investigate their socioeconomic status, distribution in relation to the Shorncliffe barracks and clarify wether they remain clustered together or live dispersed.

Research Question (RQ):

'To what extent have the minority ethnic group of the Nepalese in Folkestone integrated within the local urban area and community?'

Null Hypotheses:

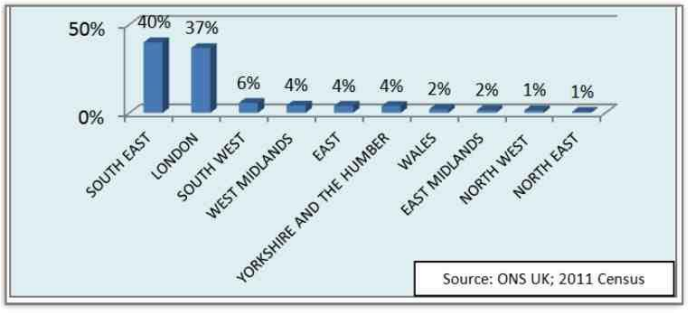
1) The Nepalese population of Folkestone are not clustered within the community
2) There is no relationship between the socioeconomic deprivation of districts in Folkestone and the distribution of the Nepalese population

The Nepalese in Folkestone

The RGR are the sole infantry regiment of the British Army Gurkhas, comprised of soldiers recruited from mountainous Nepal in South Asia. Since 2001 the RGR have operated two battalions, in the UK and Brunei. Since 2001, the UK base has operated from the Shorncliffe barracks within the ward of Sandgate in Folkestone.[1]

With the barracks, the town has become a thriving centre for the Nepalese community. The Nepali population in the south-east exceeds London's Nepali population. The district of Shepway has the highest population of Nepalese residents in Kent totalling 2,341 in 2011.[2] Many of the Folkestone Nepalese have settled after retirement out of the RGR, are family members or have moved from Nepal and other parts of the UK.

Figure 1: Nepali population in England and Wales by region (census 2011, N=60,202)



Theories

Urban theories can be used to outline the settlement process of ethnic minorities, allowing common patterns of integration to be compared with the distribution of the Nepalese in Folkestone.

Spatial Assimilation Theory[3]

This theory describes the pattern of decreasing tendency for new immigrants to cluster together with increasing duration of stay in the new location. At first there can be formation of **ethnic enclaves** where minorities are clustered together. Over time the immigrant groups will disperse into the urban area, spatially integrating with the whole population.

The theory would suggest that although the first Nepalese residents will have resided at the barracks, over time the Nepalese population would be expected to have spread out further away, following a natural process of assimilation.

Ethnic Succession Theory[4]

This is the theory that ethnic minority groups settling in a new area will live in poorer neighbourhoods. As their economic situation improves and they achieve economic parity with the most populous native group, they will relocate to more affluent neighbourhoods.

As such, ethnic enclaves can become prevalent in urban areas, where you live reflecting both socioeconomic status and ethnicity. **Ghettoisation** refers to the absence of assimilation and presence of deprivation often found in areas of high ethnic concentration.

While some minorities choose to remain segregated from the majority population, the availability of housing and employment opportunities can constrain people to live in certain areas. Therefore, the varying levels of deprivation across Folkestone may influence Nepalese settlement, for example regarding affordability of housing.

Figure 2: Immigrant Enclaves

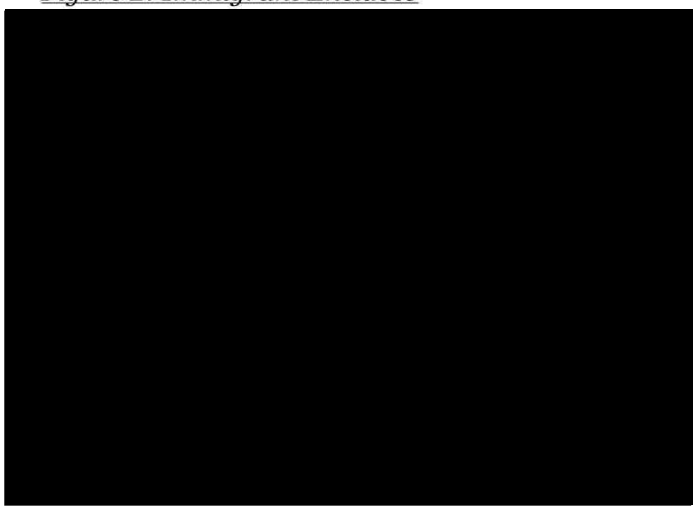
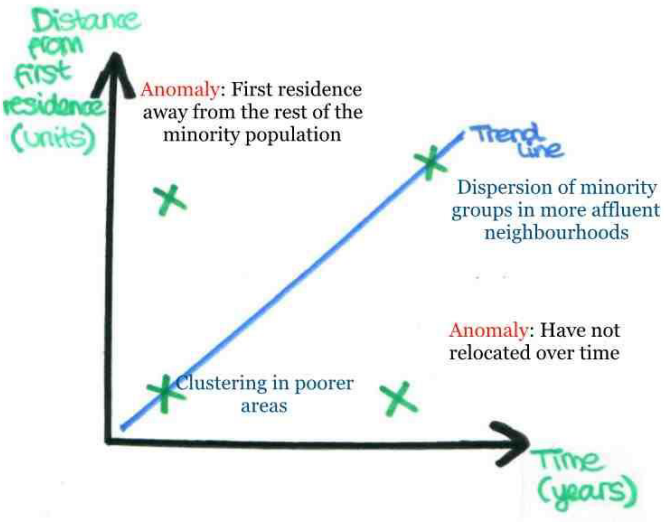


Figure 3: Graph illustrating spatial assimilation and ethnic succession



Processes within Folkestone

Folkestone was once a fashionable holiday resort for middle and upper class British tourists. Famous visitors include King Edward VII and Agatha Christie.[5] Following the dawn of international flights, seaside towns experienced decline—a pattern seen nationally. With deindustrialisation of the shipping industry, the town plummeted into deprivation. This change from prosperity into the **'cycle of deprivation'** is shown by ***Butler's model for tourism decline.***

To a certain extent construction of the channel tunnel terminal bordering Cheriton has furthered decline as major shipping and tourism functions became over-shadowed by the facilities.[6] However, gentrification leading to rejuvenation has begun to occur in Folkestone. Multi-million investments converting the harbour arm into a vibrant pier, a triennial art festival and restoration projects, have begun to transform the area.

Changing land use, as seen in Folkestone, will affect the distribution of ethnic minorities across an urban area. The inflation of house prices along the seafront prevent certain income brackets from some residential locations. Deprivation is still prevalent with some excluded from the economic benefits gained through gentrification. For example, 64% of pupils in the newly built Martello Primary School, overlooking the harbour, are within the UK's 20% most deprived children.[7]

This complex background may prove influential in determining the nature of Nepalese interactions within the town, affecting the degree of integration.

**Within this essay, 'Integration' and 'Assimilation' are used interchangeably to describe the presence of both British and Nepalese populations within Folkestone, spatially dispersed and distributed evenly across the urban landscape with no bias into areas of certain socioeconomic status.*[8]

---

[1] The administrative geographies of wards are used within this essay to investigate spatial variations within the Nepalese community across the town of Folkestone

[2] Shepway District Council (2016). *Shepway Annual Equality and Diversity Report*.

[3] Massey, D. S., & Denton, N. A. (1985). Spatial assimilation as a socioeconomic outcome. American Sociological Review, 50(1), 94–106.

[4] Park, R., Burgess, E. and McKenzie, R. (1925). *The City: Suggestions for the Study of Human Nature in the Urban Environment*. Chicago: University of Chicago Press.

[5] Sander, H. *How do you rescue a seaside town?*. (2015). BBC. [online] Available at: https://www.bbc.co.uk/news/magazine-34594854 [Accessed 19 Oct. 2018].

[6] Warshaw, J., Bradbury, O., Cartell, L. and Beech, S. (2016). *Folkestone Conservation Area Appraisal*. Conservation Architecture and Planning LTD.

[7] UK.Gov. English indices of deprivation 2015. 2015. Postcode Lookup. [online] Available at: http://imd-by-postcode.opendatacommunities.org/. [Accessed 31st Sep. 2018].

[8] Author's definition based on wider readings

Area of Study

Figure 5: World Map

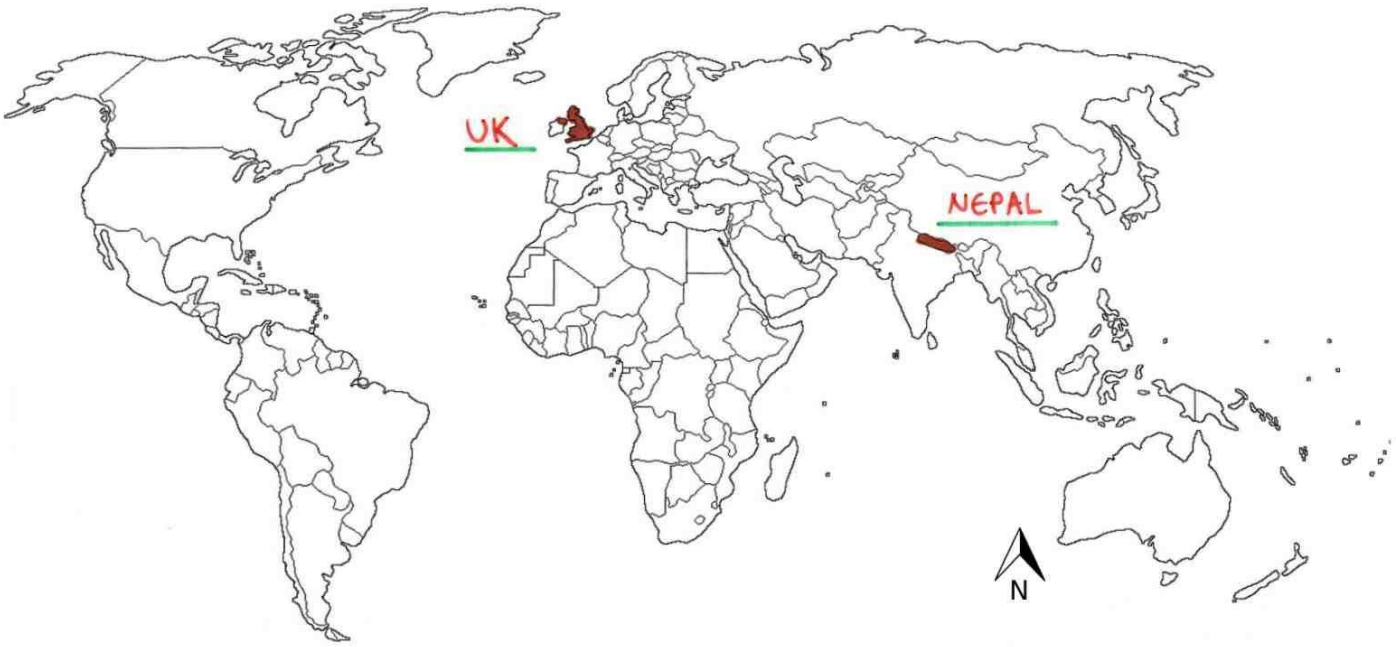
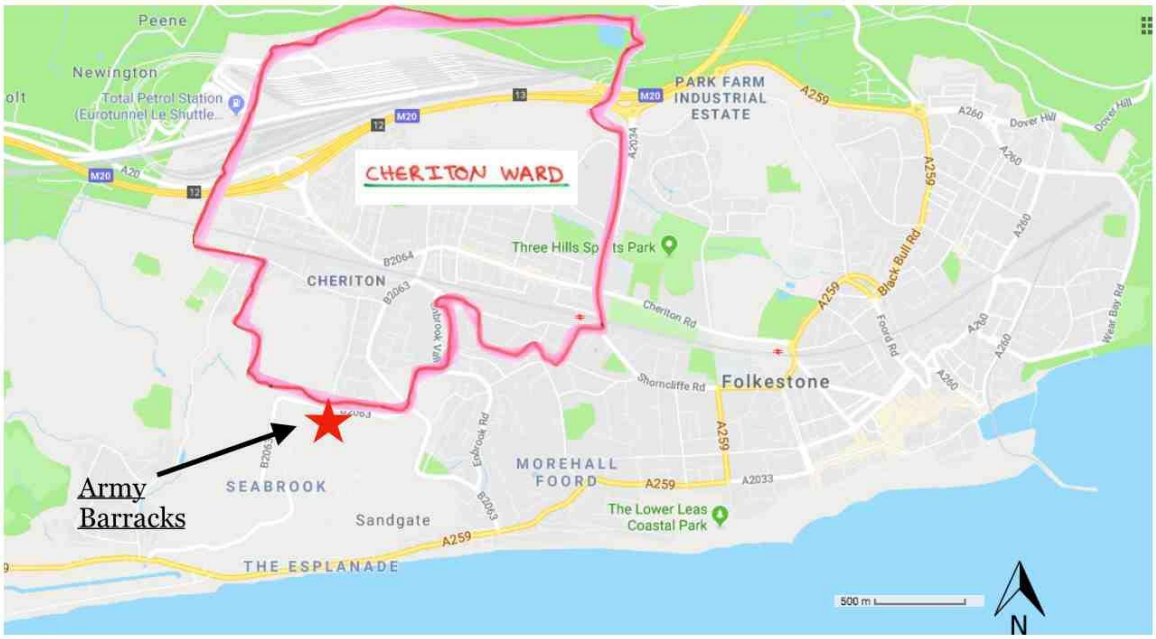


Figure 6: Kent County (UK)

Figure 7: The district of Shepway

Figure 8: Cheriton Ward in Folkestone*



**The Folkestone Nepalese Community are based in Cheriton. Many Nepalese services are located along Cheriton high street.*

Methodology

Sampling Method and Questionnaire

A questionnaire distributed by the secretary of the Folkestone Nepalese Community provided direct responses from the population. The sampling techniques available to me for this were non-probability; some individuals have no chance of being selected. I chose pragmatic 'snowball sampling' because it allowed me to retrieve responses from a specific group within Folkestone who are difficult to access without a trusted community representative.[1] This technique involves an original research participant nominating further participants to increase the number of questionnaire respondents. Other methods such as random or systematic sampling were inappropriate and would not allow me to target my investigation towards only the Nepalese, which was essential for my RQ.

The questionnaire was piloted to check ease of response. Closed, short response questions were at the beginning to engage and be immediately accessible for respondents. Subjective, open questions at the end allowed for greater evaluation of integration. 35 questionnaires (see appendix) were collected, enough to conduct a reliable nearest neighbour statistical test.

Postcode Mapping

I plotted the postcodes and then used the nearest neighbour statistical analysis to provide an objective measure of spatial dispersion. This test was essential in answering my first null hypothesis regarding clustering. Geographical Information Systems (GIS) were employed through Google fusion tables. When calculating the nearest neighbour I used a distance of 0 for any postcodes that were repeated, as the distance between individual houses is negligible. The presence of repeated postcodes also reinforces the point of Nepalese clustering.

Land Use Mapping

This reflected the distribution of Nepalese services across Folkestone, and emphasised how Cheriton ward is a centre for the Nepalese community within Folkestone. This also served to reflect settlement and degree of dispersion. For land use maps, the online resource 'Digimaps' was used to show individual buildings. I surveyed Cheriton high street and local roads, collected leaflets advertising Nepalese businesses in shops and used the internet to locate further Nepalese services in Folkestone.

Secondary Data Sources

These allowed me to check my own spatial pattern findings, adding to the reliability of the work. Reports on national (UK Government) and local scales (Shepway district, Folkestone and Hythe Council) detailing deprivation and ethnicity were useful in reflecting the socioeconomic status across Folkestone, a potential factor influencing integration and thus directly linking to the RQ and hypothesis 2. Online articles such as those detailing seaside resort decline and the presence of the Nepalese in Folkestone added further context to the investigation. The BBC Inside Out report on the Gurkhas in Kent indicated the prevalence of Nepalese pupils at Cheriton Primary School, again illustrating the community focus in the ward and impact of the barracks on the town.[2]

Index of Multiple Deprivation (IMD)

I devised an index of multiple deprivation which was displayed on a choropleth map alongside the number of Nepalese residents in each ward (another form of GIS). I hoped to show a link between urban social deprivation and settlement of an ethnic minority group. The index was derived from the 2011 census records. It is modelled off the UK government's deprivation index: first released in 2007 and defining deprivation through seven different aspects.[3]

Following visits to the Folkestone library to see maps of the town and communication with the Folkestone and Hythe District Council regarding the wards I drew my own outline of the town's wards, which was used as the base for the choropleth map.

The indicators chosen were selected from those available in the 2011 census, accessed online.[4] I examined previous UK government percentage weighting to determine suitable weights for each aspect of deprivation.[5] For each indicator the Folkestone wards were ranked, with 1 being the most deprived. The rank was divided by the weighting and the total ranked weight across all indicators for each ward was calculated. The smaller the sum of the ward's weighted rank, the more deprived it is. The greatest weighting was placed on unemployment, which is potent in preventing social mobility due to lack of economic stability.

On the choropleth map natural breaks in the data, grouping similar numerical values were used to dictate the colour groups, to observe clear spatial patterns. A gradient of colour from red to green aided the clarity of the map.

Using the Spearman's Rank Correlation Coefficient, the census data could be synthesised, statistically testing for any correlation between deprivation and number of Nepalese residents. Thus the IMD allowed me to answer the second hypothesis.

Figure 9: Government IMD Weightings

Aspect of Deprivation	***Weighting (%)***
Income	22.5
Employment	22.5
Health and Disability	13.5
Education, Skills and Training	13.5
Barriers to Housing and Services	9.3
Crime	9.3
Living Environment	9.3

Figure 10: My Own IMD Weightings

Aspect of Deprivation	***Weighting (%)***
Unemployment	26
Long term Health and Disability	20
No Qualifications	18
No Central Heating	12
Tenure (in council housing)	12
Lower Occupation (NS-sec)	6
No Vehicle Ownership	6

---

[1] Goodman, Leo A. *Snowball Sampling*. Ann. Math. Statist. 32 (1961), no. 1, 148--170. doi:10.1214/aoms/1177705148. https://projecteuclid.org/euclid.aoms/1177705148

[2] BBC, Inside Out (2005). *Gurkhas in Kent*. [online] Available at: http://www.bbc.co.uk/insideout/southeast/series7/gurkhas.shtml [Accessed 1 Jun. 2018].

[3] Department for Communities and Local Government (2015). *The English Index of Multiple Deprivation (IMD) 2015 - Guidance.*

[4] UK Census Data. (2019). *Shepway - UK Census Data 2011*. [online] Available at: http://www.ukcensusdata.com/shepway-e07000112#sthash.uaue9lNf.dpbs [Accessed 5 Jun. 2018].

[5] Department for Communities and Local Government (2015). *The English Indices of Deprivation 2015, Technical report*.

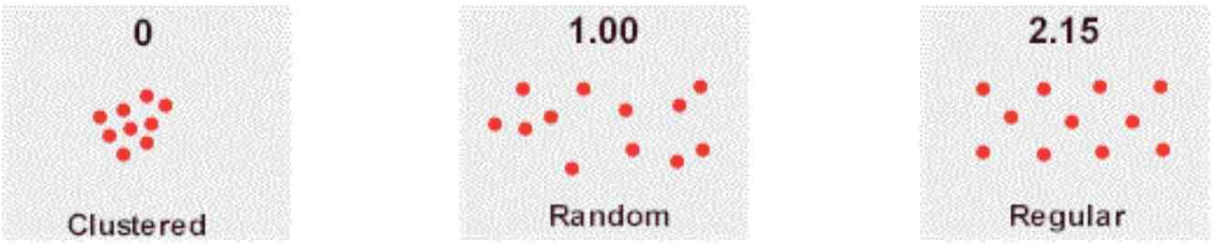
Results and Analysis

Hypothesis 1) The Folkestone Nepalese population are not clustered within the community

Within this essay 'community' refers to the built up areas of Folkestone and its constituents.

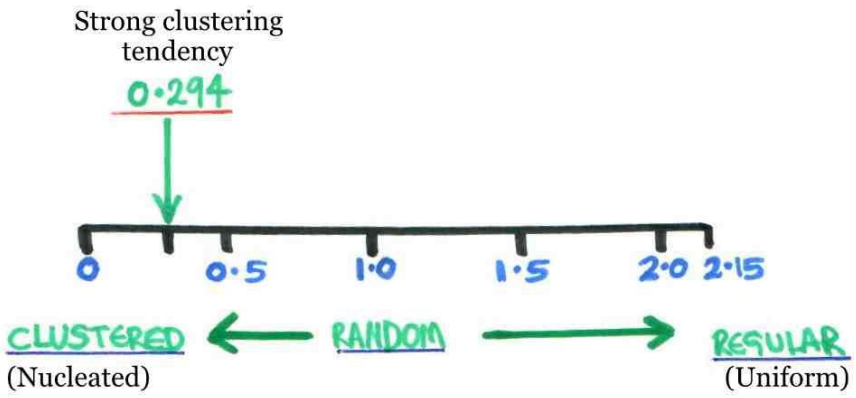
The 'nearest neighbour' statistical test can be used to quantify the level of dispersion of a particular group. I have used it to evaluate the geographic distribution of the Nepalese in Folkestone with the purpose of determining whether they live together or have spread out into the wider urban area. It works by comparing the mean distance between each questionnaire respondent's postcode and its nearest neighbour (other postcode) with the expected mean distance that would occur if the distribution was completely random. The formula produces a result between 0 and 2.15; 0 indicates clustering, 1 represents random scattering and 2.15 is regular.[1]

Figure 11: Visual representation of the 'nearest neighbour' statistical test result



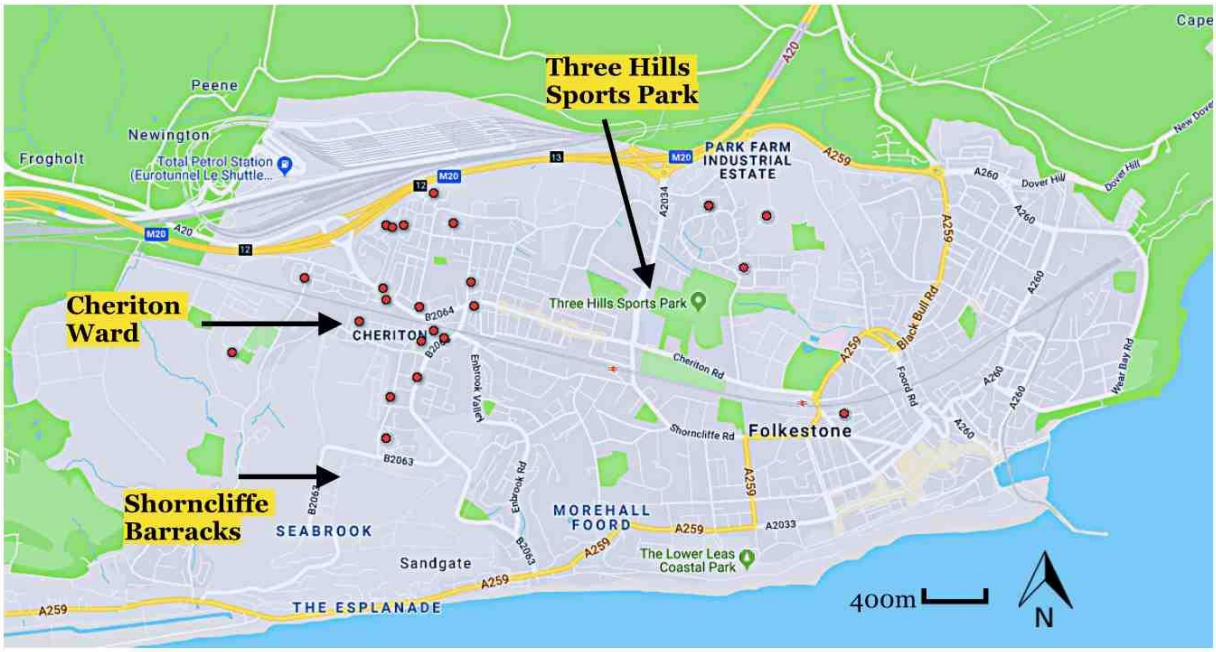
The calculated Rn value for the test was 0.294 (3sf) indicating a strong clustering pattern of the postcodes, implying that the Folkestone Nepalese have not spatially assimilated into the areas surrounding the barracks. Since the nearest neighbour is statistically significant I was able to reject the null hypothesis with 99% certainty that this had not occurred due to chance.

Figure 12: Diagram of the 'nearest neighbour' calculated Rn value



This tendency to group together can be seen visually (figure 13, postcodes are plotted as red markers). Fewer than 35 postcodes are plotted, because some respondents share the same postcode —nine postcodes are repeated in total. This in itself is evidence of clustering, living close enough together that their postcodes are the same.

Figure 13: The plotted questionnaire postcodes



Although there are a few outliers, for example those postcodes more central to Folkestone and others above the Three Hills Sports Park, it is clear the questionnaire respondents are grouped together—specifically around Cheriton ward. Within 1km of the high street, 25 of the Nepalese respondents reside. This pattern is confirmed by the statistically significant nearest neighbour Rn value, allowing me to reject the null hypothesis 'The Nepalese population of Folkestone are not clustered within the community'.

In this way, the Folkestone Nepalese are not spatially integrated in the whole community, not spreading into other neighbourhoods. Instead they reside within close proximity of one another, particularly in Cheriton—near to the Army Barracks and the residential accommodation it provides for employees. Interestingly, one in every six pupils at Cheriton primary school is Nepalese.[2]

Along Cheriton high street there is a high frequency of Nepalese run services. In total there are eight along the main high street, and an additional four off local roads. Therefore, it would appear that as well as population concentration within the same area there is also economic agglomeration of Nepalese services.

High Street Transects of Nepalese Services

Photo 3

Cheriton baptist church holds a service for the Nepalese every Sunday, demonstrating the way in which community interactions have begun to reflect the high concentration of Nepalese. Even the British convenience store in Golden Valley (lower Cheriton) had a selection of Nepalese products showing their prevalence within the population and economic importance for local businesses. The 'Folkestone Nepalese Community' group hold cultural celebrations and maintain Nepalese traditions. Therefore, Cheriton becomes attractive as a location of residence for those retiring from army service and arriving from Nepal as their culture is already well established, partly explaining high Nepalese concentrations within the ward.

Figure 14: Cheriton High Street

Photo 1

Figure 15: Lower Cheriton (south of the high street)

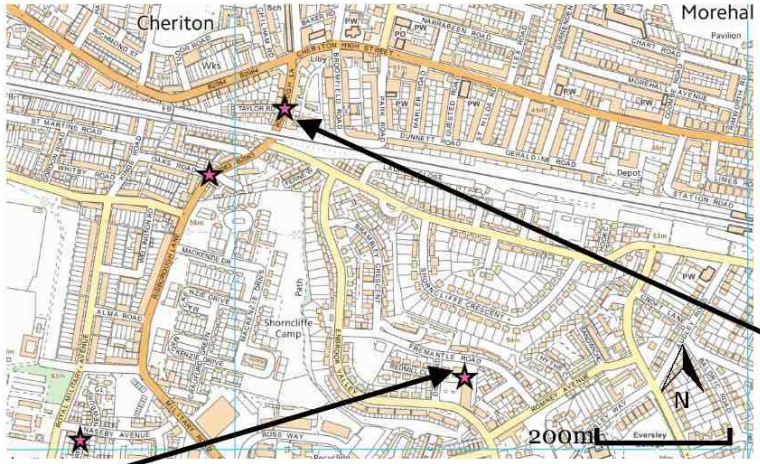


Photo 2

Key

= **Nepalese service**

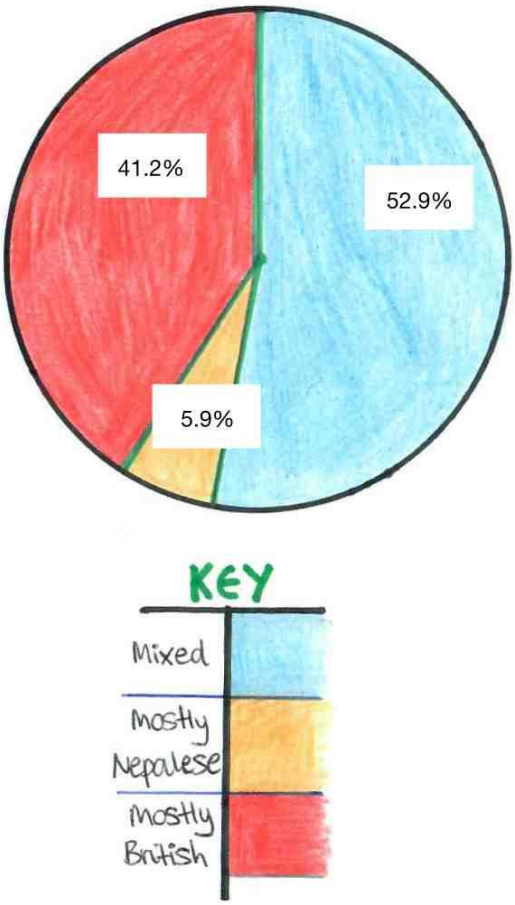
Photo 4

*Additionally there are three Nepalese restaurants and a 'negotiator' located in central Folkestone. Services publicised by leaflet/card e.g taxi drivers could not be accounted for if there was no postcode or location.

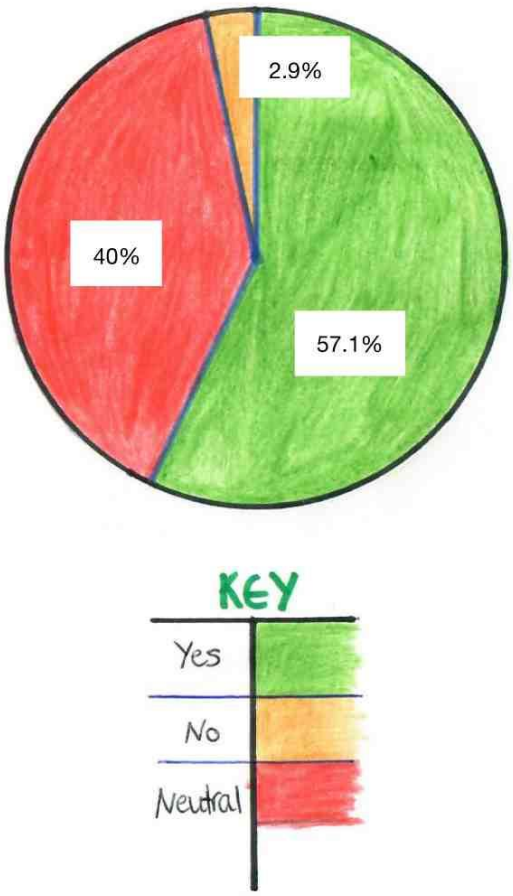
The questionnaire revealed whether the tendency to cluster is a deliberate, conscious decision for the Nepalese in Folkestone. Participants were asked to select the ethnicity of their neighbours and decide how important living near to the Nepalese community is for them.

Figure 16: Pie charts highlighting questionnaire responses

Where I live the residents are:



Living near the Nepalese community is important to me...



The results reflect the importance for respondents to live near others of Nepalese background, crucial for nearly 60% of people. This may explain the clustering distribution of Nepalese in Folkestone—they want to reside near others sharing their heritage, culture and language. However, 52.9% of respondents claim to live in mixed residential areas, perhaps indicative of spatial integration with the native white population. Although they live in mixed ethnicity neighbourhoods it does not necessarily mean that its constituents are integrated and could simply be due to the presence of the majority white, British population in most areas.

Having proven statistically significant clustering, I wanted to examine whether there was a correlation between an individual's duration of residence in Folkestone and the distance that they live from the barracks. If there is, it could be argued that time is a key factor in spatial diffusion. I would expect that because the location of first Nepalese residence is around the Shorncliffe barracks, as individuals and family members leave the army over time they will move further afield.

The Spearman's Rank Correlation Coefficient was used to indicate the strength of a relationship between the two variables. At a 95% level of significance the calculated Rs value of -0.292 is not statistically significant, implying that there is no correlation between the two variables - or at the most it is very weak.

Perhaps Nepalese assimilation is not as simple as movement from a central nuclei (the barracks) over time. It might instead reflect a complete lack of spatial dispersion altogether. The population may remain close to the barracks even after RGR employment, an area they know well. It could take longer for spatial assimilation of ethnic minorities to take place, across generations, instead of over the relatively short period between 2001 (the year of RGS relocation to Shorncliffe) and the present day.

Evaluating my calculations, the responses of 35 individuals is probably not sufficient to decipher the patterns of the whole Nepalese population in Folkestone. Additionally, a few individuals recorded only CT19 as their postcode. Therefore the central point of this wider region was used to calculate distance from the barracks. Because of this lack of precision there could be greater variation in distance of residence from the barracks than first appears. Increasing the sample size would have allowed for greater reliability in this respect.

Although results of the Spearman's Rank are not what I had expected, they do highlight the lack of Nepalese movement overtime—all of the 35 respondents live under 2.6km away from the barracks, extremely close for a town with a 19km^2 area. The non-significant result supports the nearest neighbour analysis proving clustering and the pie charts showing general desire to live near the Nepalese community.

Arguably the role of physical geography has inhibited complete dispersion of the Nepalese across the town, the steep cliff face between the Army barracks and the Sandgate esplanade instead promoting movement towards Cheriton.

Hypothesis 2) There is no relationship between the socioeconomic deprivation of districts in Folkestone and the distribution of the Nepalese population

The district of Shepway (where Folkestone is located) is the third most disadvantaged district in Kent with the wards of Folkestone Harbour, East and Harvey Central designated within the 10% most deprived 'Lower Super Output Areas' nationally.[3] Originally army employees, with a reputation for being immensely skilled, the Nepalese socioeconomic status may exceed that of the local white population—contrary to what other theories might suggest.

Deprivation could play a part in determining patterns of Nepalese settlement—if they want to live in prosperous areas, where there is high accessibility to education/housing. Instead I predict that more important in determining Nepalese settlement and thus the extent of spatial integration, is living in a location where their culture is well established—this being Cheriton because of its close proximity to the army barracks and therefore an appreciation of Nepalese heritage.

An 'Index of Multiple Deprivation' (IMD) is utilised by the UK government to quantify and compare the levels of impoverishment across different areas. With the purpose of ascertaining the varying deprivation levels across Folkestone I created my own index, through a method of weighting chosen ranked indicators.

Figure 17: Table displaying IMD Ranked Weight (Rw) for the Folkestone Wards

Ward	Ranked Weight (Rw)	
Harbour	1.45	Most Deprived
Foord	1.90	
East	1.91	
Harvey Central	1.95	
Cheriton	2.95	
Harvey West	4.35	
Park	4.60	
Morehall	4.62	
Sandgate	5.25	Least Deprived

The indicator I developed portrayed Sandgate as the least deprived and Folkestone Harbour as the most deprived. Cheriton, the location of Nepalese clustering (hypothesis 1), is positioned centrally in terms of deprivation within Folkestone. My index indicates Folkestone Harbour as being the most deprived, the ward once the centre of industry, suffering the most from deindustrialisation. Sandgate is shown to be the least deprived, where higher income earners reside on the seafront and many hotels have undergone restoration.

Nationally, in 2011 (census year) 71% of people between 16 and 74 were employed.[4] Gurkha employment rates were significantly higher at 91%.[5] Therefore the lower deprivation in Cheriton may be partly due to its high population of Nepalese reducing the unemployment rate, an indicator utilised within my index.

Using the choropleth map constructed from my indicator, the spatial disparities across Folkestone become visually evident, with the easterly wards most deprived.

Figure 18: Choropleth map for the Folkestone Wards showing level of deprivation and number of Nepalese residents

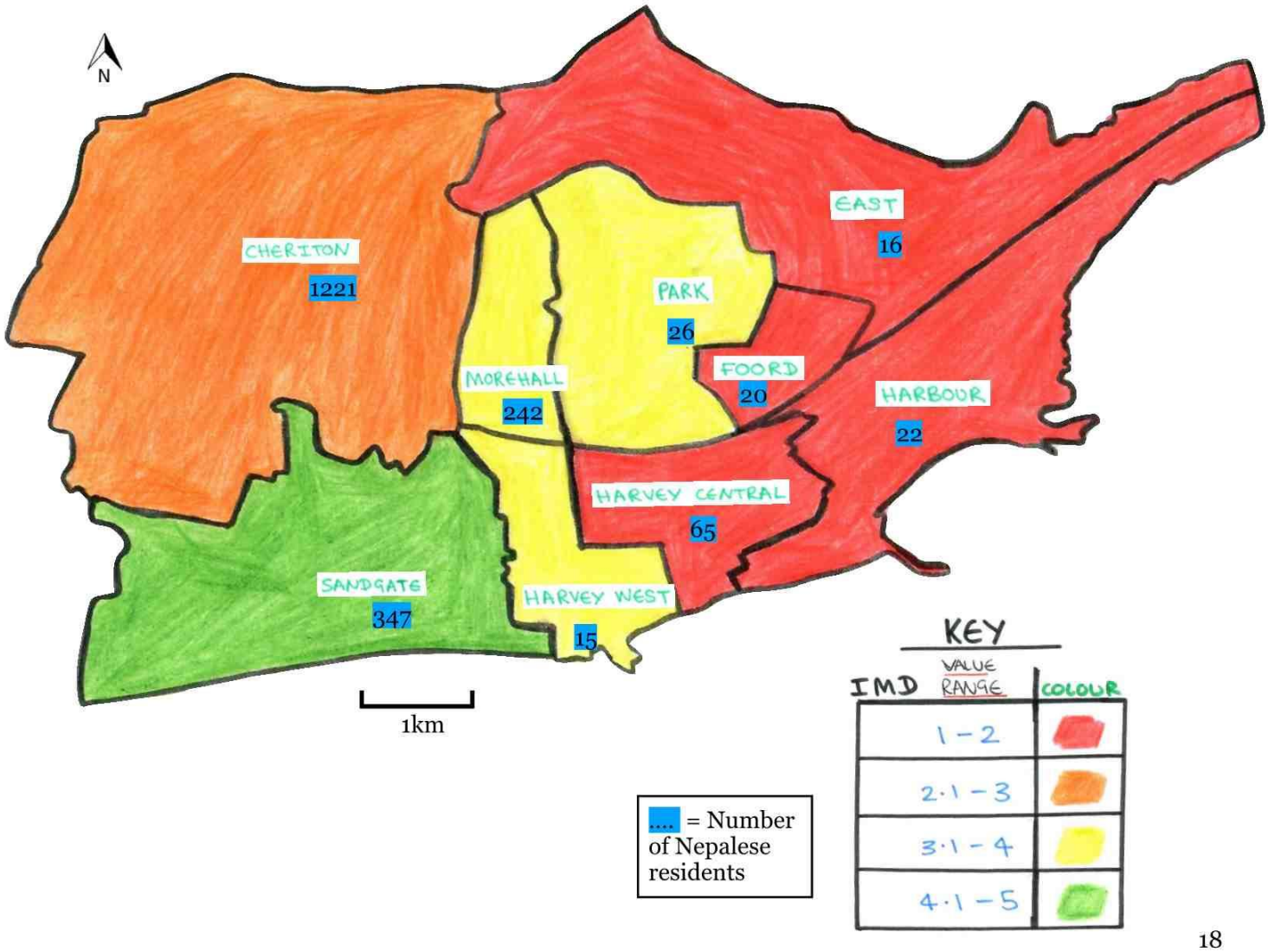
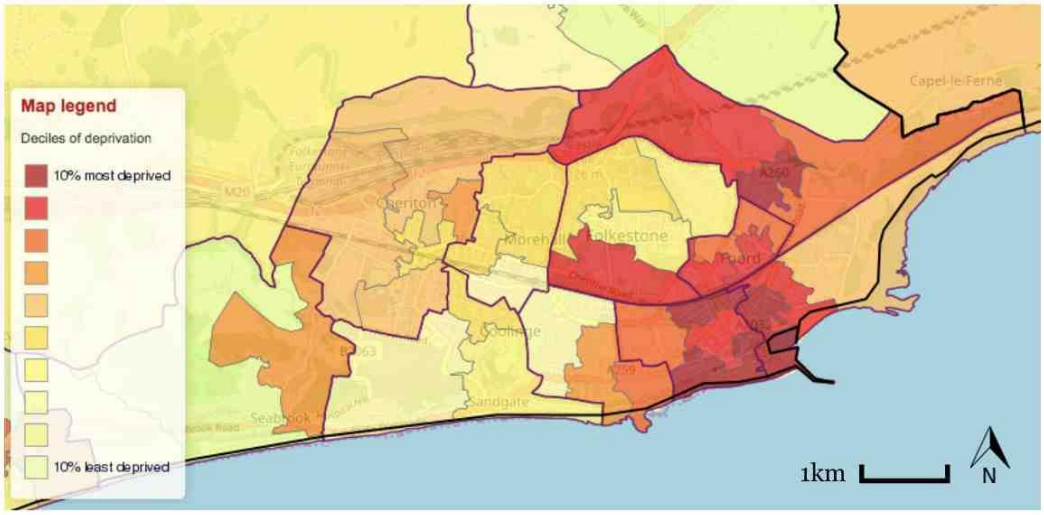


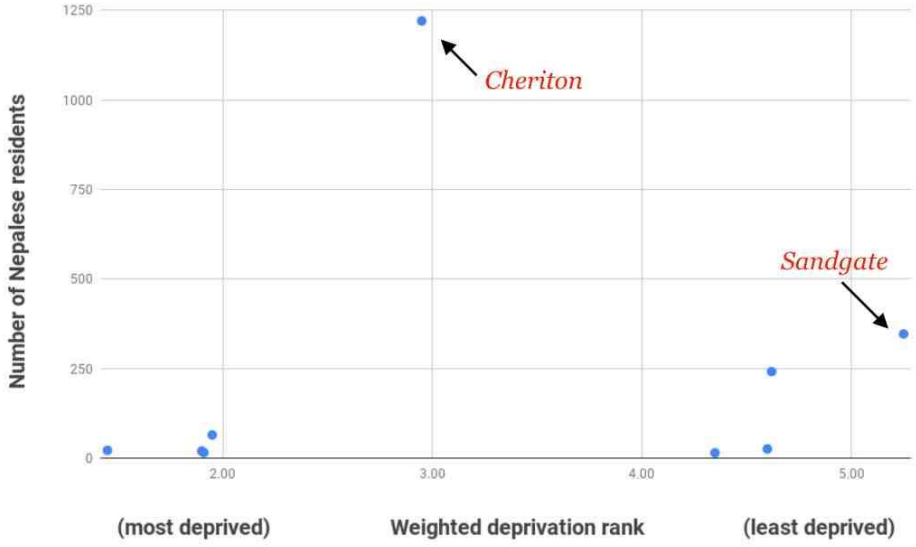
Figure 19: Government IMD for Folkestone



The government's index for multiple deprivation mirrors the patterns of deprivation displayed by my own calculations and choropleth map.

My measure of deprivation across Folkestone can only be used in isolation, showing inequalities relative to the town—the government indicator reflects deprivation in relation to the whole of the UK. It highlights that Folkestone is formed from wards within both the top and bottom deciles of deprivation. The number of Nepalese residents, as recorded in the 2011 census, may be correlated with the deprivation of the ward (see figure 20).[6]

Figure 20: Scattergraph showing the number of Nepalese residents and weighed deprivation rank of each ward



The wards with the highest number of Nepalese residents are Sandgate and Cheriton—those geographically closest in proximity to the barracks. However, the variation in the Nepalese

population between these two wards is striking; the 347 Nepalese residents in Sandgate are significantly fewer than the population of 1221 in Cheriton.

This may be because the census information reflects those currently employed in the RGR, with accommodation mostly in Cheriton. It could also be a result of higher house prices in Sandgate, (popular with ex-Londoners and those with second homes) providing sea views across the channel.[7] The pressure of Londoners leading to house price inflation alongside economic uncertainty and difficult in accessing mortgages contributed to housing market stagnation. In turn integration may have slowed as fewer people move house.

It is also surprising that so few members of the Nepalese community live in the other Folkestone wards, emphasising their group tendency to cluster. Folkestone Harvey West only had 15 Nepalese residents in 2011.

To determine statistically the existence of any correlation I used Spearman's Rank Correlation Coefficient. This produced an Rs value of 0.483 which is not statistically significant (at the 95% significance level), indicating a very weak relationship between the number of Nepalese and the level of deprivation. This highlights the uneven nature of Nepalese distribution across the town and the null hypothesis must be accepted.

Additional Analysis - Qualitative Questionnaire Responses

Responses to the question 'Do you feel welcome in Folkestone and a part of the whole Folkestone community—why/why not?' included:

- "I live in a community that celebrates my culture and heritage"
- "The community has integrated well"
- "We are well respected by locals"

This creates an overall impression of social integration, even if there is not spatial dispersion of ethnicities.

---

[1] Geographyfieldwork.com. (2018). *Nearest Neighbour Analysis*. [online] Available at: https://geographyfieldwork.com/nearest_neighbour_analysis.htm [Accessed 29 Jun. 2018].

[2] BBC, Inside Out (2005). *Gurkhas in Kent*. [online] Available at: http://www.bbc.co.uk/insideout/southeast/series7/gurkhas.shtml [Accessed 1 Jun. 2018].

[3] Kent County Council (2015). *The English Index of Multiple Deprivation (IMD 2015): Headline findings for Kent*.

[4] Office for National Statistics (2013). *2011 Census: Labour Market participation in England and Wales - Local Area analysis*.

[5] Gurung, N. (n.d.). *Research into Gurkha Settlement and Integration Process in UK: Opportunities and Barriers*. Available at: http://www.secouncils.gov.uk/upload/datas/Gurkha_Research_Findings_Presentation.pdf [Accessed 2 Jul. 2018].

[6] UK Census Data. (2019). Shepway - UK Census Data 2011. [online] Available at: http://www.ukcensusdata.com/shepway-e07000112#sthash.uaue9lNf.dpbs [Accessed 5 Jun. 2018].

[7] District Council of Folkestone and Hythe (2011). *Shepway Housing Strategy 2011-2016*.

Conclusion

Spatial patterns of the Nepalese were not entirely as expected. Although the ethnic group were spatially concentrated they were not in the most deprived areas, unlike modelled patterns of ghettoisation and ethnic enclaving—a result of the complex interplay of factors specific to location.

The high level of clustering around Cheriton was shown through the nearest neighbour Statistical Analysis: the result of 0.294 (3sf) strongly supporting the hypothesis. This pattern was reflected through the plotted postcodes, transects of Nepalese services and questionnaire responses. The non statistically significant Spearman's rank result of -0.292 reflects low levels of relocation away from the army barracks since 2001. Therefore, the null hypothesis is rejected and the implication is of clustering of ethnic groups within Folkestone.

Comparing the deprivation of Folkestone's wards aimed to help deduce potential reasons behind Nepalese clustering. Creation of an IMD compared against the total number of Nepalese residents in each ward proved there to be no direct correlation between deprivation and the number of Nepalese. Therefore, the second null hypothesis is accepted due to uneven distributions, reflecting difficulties in attributing deprivation to settlement patterns and vice versa.

Gurkha families are provided with extended support from the military and UK government, unavailable for the average Folkestone citizen. Schemes such as 'The Gurkha Resettlement Education and Training project' aim to 'provide information, advice, and guidance [with the aim of facilitating their] successful integration in the wider community'.[1] It is this outreach and support which improves levels of social assimilation after leaving the RGR and perhaps influences level of deprivation.

The Nepalese population have assimilated within Folkestone's community only up to a point. While they are well acknowledged and maintain connections beyond their own group they do still remain spatially clustered together.

In answer to the main research question, the evidence points to low levels of spatial dispersion and assimilation. The extent of the integration of the Nepalese is restricted at present—a result of complex social and cultural factors and importantly geographic and economic constraints of residential location.

It remains to be seen whether the clustering tendencies of the Nepalese population will be maintained in the future. Over time I predict that they will become less spatially concentrated as subsequent generations of Nepalese offspring are less tied to a specific community by language and ethnicity. This work provides useful comparison for settlement patterns of minority groups in other

seaside towns and is relevant in terms of investigating frictions to integration that prevent social and spatial mobility.

Evaluation

Some important factors in terms of ethnic integration that influence spatial settlement, such as income, were unable to be researched directly. Therefore the investigation could be developed by conducting closer analysis of the impact of socioeconomic status on assimilation and dispersion into a community.

The relatively low sample size of questionnaire respondents in relation to the whole Nepalese community may have impeded analysis and the reliability of any wider conclusions, reflecting only a small proportion of the population. The investigation would have been more reliable with a larger sample size.

The method of snowball sampling to distribute questionnaires was particularly relevant considering the specificity and exclusivity of the target population. The Nearest neighbour and Spearman's rank were appropriate statistical tests to conduct in order to quantify clustering and the existence of any correlation.

The census information was temporally limited, collected in 2011. This affects any qualifications made in the conclusion about the current state of Nepalese integration—7 years have passed, over which time there may have been significant changes regarding settlement and total Nepalese population, thus creating uncertainties.

The level of community interaction may vary across age groups. Developing this strand further, could potentially reveal other angles of urban integration that had not previously been considered.

---

[1] East Midlands Councils (n.d.). *The Gurkha Resettlement Education and Adult Training project*. [online] Available at: http://www.emcouncils.gov.uk/write/GREAT%20Concept.pdf [Accessed 16 Oct. 2018].

Bibliography

Figure source:

1. Cnsuk.org.uk. (2012). Office for National Statistics (2011). *A Glimpse of the Nepali Population in the UK*. [online] Available at: http://www.cnsuk.org.uk/details/a-glimpse-of-the-nepali-population-in-the-uk [Accessed 4 Jul. 2018].
2. Campbell, J. (n.d.). [image] Available at: https://jonathanacampbell.files.wordpress.com/2011/07/spatial-assimilation1.jpg [Accessed 17 Oct. 2018].
3. Author's own graph
4. Bowen, A. and Pallister, J. (2001). *A2 Geography*. Heinemann.
5. Outline-world-map.com. (2009). *Outline World Map Images*. [online] Available at: http://www.outline-world-map.com/ [Accessed 17 Jun. 2018].
6. Google Maps. (2018). *Google Maps*. [online] Available at: https://www.google.co.uk/maps [Accessed 31 Jul. 2018].
7. Google Maps. (2018). *Google Maps*. [online] Available at: https://www.google.co.uk/maps [Accessed 31 Jul. 2018].
8. Google Maps. (2018). *Google Maps*. [online] Available at: https://www.google.co.uk/maps [Accessed 31 Jul. 2018].
9. Armitage, P. (2017). *Indices of Multiple Deprivation in the UK*. [online] Social Value Portal. Available at: https://socialvalueportal.com/indices-of-multiple-deprivation-in-the-uk/ [Accessed 20 Aug. 2018].
10. A table of the author's own percentage weightings
11. Delaitre, A. (2011). *Nearest Neighbour Index*. [online] IB Geography. Available at: https://www.geoib.com/nearest-neighbor-index.html [Accessed 5 Jul. 2018].
12. Author's own diagram
13. A map showing plotted questionnaire postcodes created using Google Fusion Tables
14. Digimapforschools.edina.ac.uk. (2018). *Digimap for Schools*. [online] Available at: https://digimapforschools.edina.ac.uk/ [Accessed 30 Jun. 2018].
15. Digimapforschools.edina.ac.uk. (2018). *Digimap for Schools*. [online] Available at: https://digimapforschools.edina.ac.uk/ [Accessed 30 Jun. 2018].
16. Author's hand draw piecharts using questionnaire data
17. Table displaying the author's own calculated ranked weights
18. Author's own hand drawn choropleth map, with data from the 2011 census: UK Census Data. (2019). *Shepway - UK Census Data 2011*. [online] Available at: http://www.ukcensusdata.com/shepway-e07000112#sthash.uaue9lNf.dpbs [Accessed 5 Jun. 2018].
19. OpenDataCommunities.org. (2015). *2015 English Indices of Deprivation: map explorer*. [online] Available at: http://dclgapps.communities.gov.uk/imd/idmap.html [Accessed 20 Aug. 2018].
20. Google sheets scattergraph using author's own calculated weighted deprivation rank and data from the 2011 census: UK Census Data. (2019). *Shepway - UK Census Data 2011*. [online] Available at: http://www.ukcensusdata.com/shepway-e07000112#sthash.uaue9lNf.dpbs [Accessed 5 Jun. 2018].

Photo source:

1. Author's photo, *Gurkha Services Solutions* [taken 29 Jun. 2018]
2. Author's photo, *Gurkha Palace Nepalese* Restaurant [taken 29 Jun. 2018]
3. Author's photo, *Everest Cash and Carry* [taken 29 Jun. 2018]
4. Author's photo, *Gurkha Hill Convenience Store* [taken 29 Jun. 2018]

References:

Barcelona Field Studies Centre. (2018). *Nearest Neighbour Analysis*. [online] Available at: https://geographyfieldwork.com/nearest_neighbour_analysis.htm [Accessed 2 Jul. 2018].

BBC, Inside Out (2005). *Gurkhas in Kent*. [online] Available at: http://www.bbc.co.uk/insideout/southeast/series7/gurkhas.shtml [Accessed 1 Jun. 2018].

Cnsuk.org.uk. (2012). *A Glimpse of the Nepali Population in the UK*. [online] Available at: http://www.cnsuk.org.uk/details/a-glimpse-of-the-nepali-population-in-the-uk [Accessed 4 Jul. 2018].

Department for Communities and Local Government (2015). *The English Indices of Deprivation 2015, Technical report*.

Department for Communities and Local Government (2015). *The English Index of Multiple Deprivation (IMD) 2015 - Guidance*.

District Council of Folkestone and Hythe (2011). *Shepway Housing Strategy 2011-2016*.

East Midlands Councils (n.d.). *The Gurkha Resettlement Education and Adult Training project*. [online] Available at: http://www.emcouncils.gov.uk/write/GREAT%20Concept.pdf [Accessed 16 Oct. 2018].

Geographyfieldwork.com. (2018). *Nearest Neighbour Analysis*. [online] Available at: https://geographyfieldwork.com/nearest_neighbour_analysis.htm [Accessed 29 Jun. 2018].

Goodman, Leo A. *Snowball Sampling*. Ann. Math. Statist. 32 (1961), no. 1, 148--170. doi:10.1214/aoms/1177705148. https://projecteuclid.org/euclid.aoms/1177705148

Gurung, N. (n.d.). *Research into Gurkha Settlement and Integration Process in UK: Opportunities and Barriers*. [ebook] Available at: http://www.secouncils.gov.uk/upload/datas/Gurkha_Research_Findings_Presentation.pdf [Accessed 2 Jul. 2018].

Kent County Council (2015). *The English Index of Multiple Deprivation (IMD 2015): Headline findings for Kent*.

Massey, D. S., & Denton, N. A. (1985). *Spatial assimilation as a socioeconomic outcome*. American Sociological Review, 50(1), 94–106.

Office for National Statistics (2013). *2011 Census: Labour Market participation in England and Wales - Local Area analysis*.

Park, R., Burgess, E. and McKenzie, R. (1925). *The City: Suggestions for the Study of Human Nature in the Urban Environment*. Chicago: University of Chicago Press.

Sander, H. (2015). *How do you rescue a seaside town?*. BBC. [online] Available at: https://www.bbc.co.uk/news/magazine-34594854 [Accessed 19 Oct. 2018].

Shepway District Council (2016). *Shepway Annual Equality and Diversity Report*.

UK Census Data. (2019). *Shepway - UK Census Data 2011*. [online] Available at: http://www.ukcensusdata.com/shepway-e07000112#sthash.uaue9lNf.dpbs [Accessed 5 Jun. 2018].

UK.Gov. *English indices of deprivation 2015. 2015. Postcode Lookup*. [online] Available at: http://imd-by-postcode.opendatacommunities.org/. [Accessed 31st Sep. 2018].

Warshaw, J., Bradbury, O., Cartell, L. and Beech, S. (2016). *Conservation Area Appraisal, Folkestone*. Conservation Architecture and Planning LTD.

Background Reading:

Beatty, C., Fothergill, S. and Wilson, I. (2008). *England's Seaside Towns, A 'benchmarking' study*. Her Majesty's Stationary Office.

Couchman, A. (2018). *'We are not just migrants, we have given our life to this country' Meet the Gurkha community who have transported Nepal into Kent*. Kent Live. [online] Available at: https://www.kentlive.news/news/kent-news/we-not-just-migrants-given-1272955 [Accessed 1 Jun. 2018].

Cowan, M. (2007). *How And Why To Use Spearman's Rank*. [online] Slideshare.net. Available at: https://www.slideshare.net/prioryman/gcse-geography-how-and-why-to-use-spearmans-rank [Accessed 20 Aug. 2018].

Field Studies Council. (2016). *Qualitative methods - FSC Geography Fieldwork*. [online] Available at: https://www.geography-fieldwork.org/a-level/before-starting/methods/qualitative-methods/#primary-nav [Accessed 30 Jun. 2018].

Folkestone Nepalese Community (UK). [online] Available at: http://folkestonenepalese.co.uk [Accessed 1 Jun. 2018].

Freemaptools.com. (2018). *Find Closest UK Postcode To Custom Postcode List*. [online] Available at: https://www.freemaptools.com/find-closest-uk-postcode-to-custom-postcode-list.htm [Accessed 20 Aug. 2018].

Geography Site. (2006). *Fieldwork Involving Questionnaires*. [online] Available at: http://www.geography-site.co.uk/pages/skills/fieldwork/stats/ques.html [Accessed 29 Jun. 2018].

Gov.UK (2011). *£1.5 million fund to help the Gurkha community settle in the UK*. [online] Available at: https://www.gov.uk/government/news/1-5-million-fund-to-help-the-gurkha-community-settle-in-the-uk [Accessed 18 Sep. 2018].

Lakasamba, C. (2005). Policy and Practice of Lifelong Learning in Nepal: a Socio-political Study. [online] Available at: http://epubs.surrey.ac.uk/794561/1/Laksamba.pdf [Accessed 30 Jun. 2019].

Lansley, G., Wei, Y. and Rains, T. (2015). *Identifying the Major Traits of Ethnic Clustering in England and Wales from the 2011 Census*. The Consumer Data Research Centre Working Paper Series,. [online] Available at: https://pdfs.semanticscholar.org/c635/21a684c602af41ecf2e0009c3aae06231a9f.pdf [Accessed 3 Jun. 2018].

Shepway District Council (2015). *Cheriton, Shepway Ward Profile*.

The National Academies of Sciences, Engineering, and Medicine. 2015. *5 Spatial Dimensions of Immigrant Integration*. The Integration of Immigrants into American Society. Washington, DC: The National Academies Press. doi: 10.17226/21746 [Accessed 3 Jun. 2018].

University of York, Maths Department. (n.d.). *Upper Critical Values of Spearman's Rank Correlation Coefficient Rs*. Available at: https://www.york.ac.uk/depts/maths/histstat/tables/spearman.pdf [Accessed 21 Aug. 2018].

Appendix 1: Questionnaire

Questionnaire - Folkestone Nepalese Community

*Please tick the applicable boxes

Gender:

- ☐ Male
- ☐ Female

Age:

- ☐ 16 - 19
- ☐ 20 - 29
- ☐ 30 - 44
- ☐ 45 - 59
- ☐ 60 - 64
- ☐ 65 - 74
- ☐ 75 - 84
- ☐ 85+

Year of arrival in Folkestone: .....

Postcode: .....

Accommodation / Tenure:

- ☐ I own my house/flat outright
- ☐ I own my house/flat with a mortgage or a loan
- ☐ My house/flat is rented from the council
- ☐ My house/flat is rented from the British Army
- ☐ Other: please specify:

_____

_____

Status:

- ☐ I am currently employed by the RGR / British Army
- ☐ A member of my family is currently employed by the RGR / British Army

- ☐ I used to work for the RGR / British Army
- ☐ A member of my family used to work for the RGR / British Army

- ☐ If other - please specify:

_____

_____

_____

Occupation:

- ☐ Cleaning / Housekeeping
- ☐ Shopkeeper / Shop assistant
- ☐ Engineering
- ☐ Driving Instructor
- ☐ Health professional / NHS
- ☐ Academic / Research
- ☐ Administration or secretary
- ☐ Catering / Restaurant
- ☐ Care home / care work
- ☐ Education / school
- ☐ RGR / British Army

- ☐ I am unemployed
- ☐ I am retired

- ☐ Other, please specify:

_____

_____

Where I live the residents are:

- ☐ Mostly Nepalese
- ☐ Mostly British
- ☐ Mixed Nepalese and British

Living near the Nepalese community is important to me...

- ☐ Yes, It is very important
- ☐ Neutral, I don't mind
- ☐ No, It is not important

I feel at home in Folkestone...

- ☐ Yes
- ☐ Sometimes
- ☐ No

I feel safe in Folkestone...

- ☐ Yes
- ☐ Sometimes
- ☐ No

Do you feel welcome in Folkestone and a part of the whole Folkestone community - why / why not?

_____

_____

_____

_____

Appendix 3: Full questionnaire responses

Number	Postcode	Gender	Age	Duration spent in Folkestone (years)	Tenure	Occupation	Ethnicity of neighbourhood	Important to be near other Nepalese?
1	CT19 4QL	Male	45-59	12	Own house m	Other	Mixed	Yes
2	CT20 3JF	Female	45-59	13	Own house m	Care home	Mixed	Neutal
3	CT19 4HT	Female	30-44	15	Own house m	Cleaning	Mixed	Yes
4	CT20 3JU	Female	45-59	18	Own house m	Health services	Mixed	Yes
5	CT20 3JU	Female	45-59	18	Own house m	Other (self emp)	Mixed	Yes
6	CT19 4LX	Male	45-59	12	Own house o	Euro tunnel	Mixed	Neutral
7	CT19 4JE	Male	65-74	6	Rented - council	Retired	Mostly Nepalese	Yes
8	CT19	Male	45-59	12	-	Security officer	-	Yes
9	CT19	Male	45-59	12	-	Customer service	Mixed	Yes
10	CT20 3EF	Male	45-59	13	Own house m	Security officer	Mostly British	Yes
11	CT19 4QF	Male	20-29	11	-	-	Mixed	Neutral
12	CT19 4JF	Male	16-19	10	Own house o	Student	Mixed	Neutral
13	CT19	Male	30-44	12	Own house o	Student	Mostly British	Yes
14	CT20 1DJ	Male	45-59	10	Own house o	Engineering	Mostly British	Neutral
15	CT19 4JL	Male	30-44	12	Own house m	Restaurant	Mixed	Neutral
16	CT20 3JT	Male	45-59	18	Own house m	Shopkeeper	Mixed	Neutral
17	CT20 3SL	Male	45-59	12	Rented privately	Restaurant	Mixed	Yes
18	CT20 3JT	Male	45-59	18	Own house m	Shopkeeper	Mostly British	Yes
19	CT19 5UT	Male	45-59	18	Own house m	Other (self emp)	Mostly British	Neutral
20	CT19 4QF	Female	45-59	17	Own house m	Housekeeping	Mostly British	Neutral
21	CT20 3LL	Male	20-29	13	Own house m	Army	Mostly British	Yes
22	CT19 5UT	Male	20-29	15	Own house m	Finance	Mostly British	Neutral

23	CT19 4LX	Male	20-29	12	Own house o	Care home	Mostly British	No
24	CT19 4LG	Male	20-29	8	Own house o	Education	Mixed	Neutral
25	CT19 4LW	Male	45-59	11	Own house m	Other	Mixed	Yes
26	CT20 3TR	Male	45-59	12	Own house o	Taxi Driver	Mostly Nepalese	Yes
27	CT19 4LW	Female	30-44	18	Own house m	Shopkeeper	Mixed	Neutral
28	CT19 4HE	Male	30-44	10	Own house m	Restaurant	Mixed	Yes
29	CT19	Female	20-29	9	Living with parents	Health services	Mostly British	Yes
30	CT19 5JW	Female	45-59	12	Own house m	Health services	Mostly British	Yes
31	CT20 3JY	Male	45-59	17	Own house m	Administration	Mixed	Neutral
32	CT19 4QE	Male	45-59	15	Rented privately	Security officer	Mostly British	Yes
33	CT20 3LL	Male	45-59	13	Own house m	Taxi Driver	Mostly British	Yes
34	CT20 3LL	Male	45-59	15	Rented - tenant	Retired	Mixed	Neutral
35	CT19 3JW	Male	20-29	12	Living with parents	Unemployed	Mostly British	Yes

KEY:
m = with a mortgage
o = owned outright

Appendix 4: Nearest Neighbour

Respondent	Postcode	Nearest Other	Distance (km)	Distance (km)
1	CT19 4QL	CT19 4LW	0.210	0.210
2	CT20 3JF	CT19 4JL	0.604	0.604
3	CT19 4HT	CT20 3JU	0.162	0.162
4	CT20 3JU	CT20 3JT	0.076	0.000
5	CT20 3JU			0.000
6	CT19 4LX	CT19 4QE	0.077	0.000
7	CT19 4JE	CT19 4JF	0.068	0.068
8	CT19			0.000
9	CT19			0.000
10	CT20 3EF	CT20 3LL	0.197	0.197
11	CT19 4QF	CT19 4QE	0.045	0.000
12	CT19 4JF	CT19 4JE	0.068	0.068
13	CT19			0.000
14	CT20 1DJ	CT19 5JW	1.027	1.027
15	CT19 4JL	CT20 3TR	0.371	0.371
16	CT20 3JT	CT20 3JU	0.076	0.000
17	CT20 3SL	CT20 3EF	0.243	0.243
18	CT20 3JT			0.000
19	CT19 5UT	CT19 5JW	0.417	0.000
20	CT19 4QF			0.000
21	CT20 3LL	CT20 3EF	0.197	0.000
22	CT19 5UT			0.000
23	CT19 4LX			0.000
24	CT19 4LG	CT19 4HE	0.138	0.138
25	CT19 4LW	CT19 4QL	0.210	0.000
26	CT20 3TR	CT19 4JF	0.213	0.213
27	CT19 4LW			0.000
28	CT19 4HE	CT19 4LG	0.138	0.138
29	CT19			0.000
30	CT19 5JW	CT19 5UT	0.417	0.000
31	CT20 3JY	CT20 3JU	0.095	0.095
32	CT19 4QE	CT19 4QF	0.045	0.045
33	CT20 3LL			0.000
34	CT20 3LL			0.000
35	CT19 5JW			0.000

			Sum of Distances =	3.579
			Mean observed nearest neighbour distance =	0.102
			Number of points / total area =	0.480
			Sqaure root (number of points / total area) =	0.693
			0.5 ((sqaure root (number of points / total area)) =	0.347
			Rn =	**0.294**

$$Rn = \frac{\bar{D}(Obs)}{0{\cdot}5\sqrt{\frac{a}{n}}}$$

Appendix 5: List of Nepalese Services in Folkestone

Cheriton High Street: (from West to East)
Lemon Leaf: 99-101, Cheriton High St, Folkestone CT19 4HE
Gurkha Security Services: 61 Cheriton High St, Folkestone CT19 4EZ
New Cash and Carry: 53 Cheriton High St, Folkestone, CT19 4EZ
Himalayan Cafe and Takeaway: 41 Cheriton High St, Folkestone CT19 4EY
Elegance Hair and Beauty: 37 Cheriton High St, Folkestone CT19 4EY
Everest Cafe and Bar: 18 Cheriton High St, Folkestone CT19 4ER
Everest Cash and Carry: 12-14 Cheriton High St, Folkestone CT19 4ER
Gurkha GS (Security System Supplier): Everest GS, Folkestone, CT19 4DP

Lower Cheriton (South of the high street)
Pokhara travels: 15 Risborough lane, Cheriton, CT19 4JH
Gurkha Hill: 78 Risborough lane, Cheriton, CT20 3JT
Indra plumbing and heating: 2 Fairfax close, Folkestone, CT20 3SL
Gurkha palace : 97 Enbrook valley, CT20 3NE

Central Folkestone
Oriental Buffet: 18-20 Rendezvous Street CT20 1RW
Annapurna Restaurant: 15 Cheriton Place, Folkestone CT20 2AY
Kisan Thapa (negotiator): Sandgate CT20 2BQ
Kathmandu House Restaurant: 13-14 West Terrace CT20 IRR

Appendix 6: Spearman's Rank (duration of stay in Folkestone and distance from the barracks)

Duration of stay in Folkestone	Rank	Postcode	Distance of residence from the Barracks (km)	Rank	Difference (d)	d^2
12	22	CT19 4QL	1.65	10	12	144
13	14.5	CT20 3JF	1.24	19	-4.5	20.25
15	10.5	CT19 4HT	0.98	24	-13.5	182.25
18	3.5	CT20 3JU	0.85	26.5	-23	529
18	3.5	CT20 3JU	0.85	26.5	-23	529
12	22	CT19 4LX	1.45	15.5	6.5	42.25
6	35	CT19 4JE	1.10	21	14	196
12	22	CT19	2.57	2.5	19.5	380.25
12	22	CT19	2.57	2.5	19.5	380.25
13	14.5	CT20 3EF	0.47	34	-19.5	380.25
11	28.5	CT19 4QF	1.46	13.5	15	225
10	31	CT19 4JF	1.03	23	8	64
12	22	CT19	2.57	2.5	19.5	380.25
10	31	CT20 1DJ	2.56	5	26	676
12	22	CT19 4JL	1.29	18	4	16
18	3.5	CT20 3JT	0.82	28.5	-25	625
12	22	CT20 3SL	0.25	35	-13	169
18	3.5	CT20 3JT	0.82	28.5	-25	625
18	3.5	CT19 5UT	2.35	6.5	-3	9
17	7.5	CT19 4QF	1.46	13.5	-6	36

13	14.5	CT20 3LL	0.58	32	-17.5	306.25
15	10.5	CT19 5UT	2.35	6.5	4	16
12	22	CT19 4LX	1.45	15.5	6.5	42.25
8	34	CT19 4LG	1.18	20	14	196
11	28.5	CT19 4LW	1.49	11.5	17	289
12	22	CT20 3TR	0.96	25	-3	9
18	3.5	CT19 4LW	1.49	11.5	-8	64
10	31	CT19 4HE	1.05	22	9	81
9	33	CT19	2.57	2.5	30.5	930.25
12	22	CT19 5JW	2.29	8	14	196
17	7.5	CT20 3JY	0.78	30	-22.5	506.25
15	10.5	CT19 4QE	1.42	17	-6.5	42.25
13	14.5	CT20 3LL	0.58	32	-17.5	306.25
15	10.5	CT20 3LL	0.58	32	-21.5	462.25
12	22	CT19 5JW	2.29	9	13	169
					Total of d^2 =	**9224.50**
		n^3 =	**42875**		**d^2 times 6**	**55347.0**
		n^3 - n =	**42840**		**(d^2 times 6) / (n^3 - n) =**	**1.292**
					Rs =	**-0.292**

Appendix 7: Spearman's Rank Critical Values Table

	Significance level	
Number of pairs of measurements (n)	p = 0.05 (95%) (+ or -)	p = 0.01 (99%) (+ or -)
5	1.000	
6	0.886	1.000
7	0.786	0.929
8	0.738	0.881
9	0.683	0.833
10	0.648	0.818
11	0.623	0.794
12	0.591	0.780
13	0.566	0.745
14	0.545	0.716
15	0.525	0.689
16	0.507	0.666
17	0.490	0.645
18	0.476	0.625
19	0.462	0.608
20	0.450	0.591
25	0.400	0.526
30	0.364	0.478
35	0.336	0.442
40	0.314	0.413

Appendix 8: Index of Multiple Deprivation Calculations

	Unemployment			
	%	Rank	Weight	Rw
Cheriton	6.37	6	26	0.23
East	9.49	4	26	0.15
Foord	9.53	3	26	0.12
Harbour	12.54	2	26	0.08
Harvey Central	13.88	1	26	0.04
Harvey West	7.57	5	26	0.19
Morehall	5.67	8	26	0.31
Park	6.32	7	26	0.27
Sandgate	4.31	9	26	0.35

	No Qualifications			
	%	Rank	Weight	Rw
Cheriton	25.64	3	18	0.17
East	32.68	1	18	0.06
Foord	25.48	4	18	0.22
Harbour	27.60	2	18	0.11
Harvey Central	24.94	5	18	0.28
Harvey West	19.63	7	18	0.39
Morehall	18.68	8	18	0.44
Park	22.62	6	18	0.33
Sandgate	18.43	9	18	0.50

	No Central Heating			
	%	Rank	Weight	Rw
Cheriton	3.43	5	12	0.42
East	2.92	7	12	0.58
Foord	5.11	3	12	0.25
Harbour	7.95	1	12	0.08
Harvey Central	6.09	2	12	0.17
Harvey West	4.39	4	12	0.33
Morehall	3.12	6	12	0.50
Park	2.15	9	12	0.75
Sandgate	2.80	8	12	0.67

	Long term sick or disabled			
	%	Rank	Weight	Rw
Cheriton	4.01	6	20	0.30
East	6.58	4	20	0.20
Foord	6.86	3	20	0.15
Harbour	6.94	2	20	0.10
Harvey Central	8.77	1	20	0.05
Harvey West	4.74	7	20	0.35
Morehall	3.20	9	20	0.45
Park	5..00	5	20	0.25
Sandgate	3.30	8	20	0.40

	NS-sec (% in lower occupations)			
	%	Rank	Weight	Rw
Cheriton	41.21	4	6	0.67
East	45.72	1	6	0.17
Foord	43.38	2	6	0.33
Harbour	42.79	3	6	0.50
Harvey Central	39.79	5	6	0.83
Harvey West	25.43	9	6	1.50
Morehall	32.50	6	6	1.00
Park	30.74	7	6	1.17
Sandgate	26.20	8	6	1.33

	Tenure (rented from the council)			
	%	Rank	Weight	Rw
Cheriton	14.30	2	12	0.17
East	28.40	1	12	0.08
Foord	7.05	4	12	0.33
Harbour	11.78	3	12	0.25
Harvey Central	4.78	5	12	0.42
Harvey West	0.08	9	12	0.75
Morehall	0.86	7	12	0.58
Park	0.57	8	12	0.67
Sandgate	1.90	6	12	0.50

	Vehicle/Car posession			
	%	Rank	Weight	Rw
Cheriton	23.58	6	6	1.00
East	32.70	4	6	0.67
Foord	36.12	3	6	0.50
Harbour	42.69	2	6	0.33
Harvey Central	54.49	1	6	0.17
Harvey West	31.95	5	6	0.83
Morehall	19.78	8	6	1.33
Park	21.26	7	6	1.17
Sandgate	19.67	9	6	1.50

Ward	Sum of Ranked Weight (Rw)	
Cheriton	2.95	
East	1.91	
Foord	1.90	
Harbour	1.45	*MOST DEPRIVED*
Harvey Central	1.95	
Harvey West	4.35	
Morehall	4.62	
Park	4.60	
Sandgate	5.25	*LEAST DEPRIVED*

Appendix 9: Spearman's Rank (number of Nepalese residents and sum of the ward's ranked weights for the IMD)

Ward	MDI	Rank	Number of Nepalese	Rank	Difference (d)	d^2
Cheriton	2.95	5	1221	1	4	16
East	1.91	7	16	8	-1	1
Foord	1.90	8	20	7	1	1
Harbour	1.45	9	22	6	3	9
Harvey Central	1.95	6	65	4	2	4
Harvey West	4.35	4	15	9	-5	25
Morehall	4.62	2	242	3	-1	1
Park	4.60	3	26	5	-2	4
Sandgate	5.25	1	347	2	-1	1
					Total of d^2 =	**62**
		n^3 =	**729**		**d^2 times 6**	**372**
		n^3 - n =	**720**		**(d^2 times 6) / (n^3 - n) =**	**0.517**
					Rs =	**0.483**

EE/RPPF

For use from May/November 2018

International Baccalaureate
Baccalauréat International
Bachillerato Internacional

Extended essay - Reflections on planning and progress form

Candidate: *This form is to be completed by the candidate during the course and completion of their EE. This document records reflections on your planning and progress, and the nature of your discussions with your supervisor. You must undertake three formal reflection sessions with your supervisor: The first formal reflection session should focus on your initial ideas and how you plan to undertake your research; the interim reflection session is once a significant amount of your research has been completed, and the final session will be in the form of a viva voce once you have completed and handed in your EE. This document acts as a record in supporting the authenticity of your work. The three reflections combined must amount to no more than 500 words.*

The completion of this form is a mandatory requirement of the EE. It must be submitted together with the completed EE for assessment under Criterion E. As per the 'Protocols for completing and submitting the Reflections on planning and progress form' section of the EE guide, a mark of 0 will be awarded by the examiner for criterion E if the RPPF is blank or the comments are written in a language other than that of the accompanying essay.

Supervisor: *You must have three reflection sessions with each candidate, one early on in the process, an interim meeting and then the final viva voce. Other check-in sessions are permitted but do not need to be recorded on this sheet. After each reflection session candidates must record their reflections and as the supervisor you must sign and date this form.*

First reflection session

Candidate comments:

Originally I was inclined towards investigating the refugee crisis from a geographical perspective and issues connected with the patterns and flows of refugees in East Kent. This is a very topical and local issue for me as I live in an area that has received many migrants. However, after significant exploration I was unable to find sufficient public domain data and realised the difficulties in investigating the spatial interactions of such a group. Although frustrated by not being able to investigate the spatial patterns of refugee movements in East Kent I am pleased that I can examine and research the Nepalese community in Folkestone and their degree of assimilation. It was clear that this would be more realistic and manageable following multiple visits to Folkestone and meeting with local Nepalese representatives who agreed that they would pass out questionnaires to serve as primary data, essential for this research essay.

International Baccalaureate
Baccalauréat International
Bachillerato Internacional

Interim reflection

Candidate comments:

I have constructed a questionnaire which was distributed to the Nepalese community of Folkestone through one representative using the method of snowball sampling. Random sampling methods would be inappropriate due to the nature of this investigation, aiming to target a specific group. Questionnaire design was an unexpected area that I had to learn about and reflect upon, balancing 'open' and 'closed' questions was key. I saw this when I piloted the first draft, which helped me to make changes to the questionnaire so that it was more easily understood and took less time to complete so I could derive quality responses. Subsequent meetings with my supervisor stimulated me to slightly reword my hypotheses so as to allow for clearer analysis of spatial integration in the area. I hope that this will include a nearest neighbour analysis of where the questionnaire participants live but this is reliant upon retrieving a sufficient number of responses.

Final reflection - Viva voce

Candidate comments:

Through creating a questionnaire, using the 2011 census data, mapping land use and creating an index of multiple deprivation I was able to form a detailed image of the extent to which the Nepalese population in Folkestone have spatially integrated within the community. The Nearest Neighbour Statistical Analysis was particularly successful, allowing me to quantify the clustering of the postcodes, which confirmed my first hypothesis. By distributing and collecting more questionnaires I would have improved the accuracy of any conclusions I made about the Nepalese, as 35 respondents is not sufficient to deduce the socio-economic characteristics of the whole population within Folkestone. I would have liked to develop further the factors that inhibit complete dispersion across the town, including differing house prices in each ward. Additionally, Spearman's Rank is not a strong statistical test for correlation and therefore accuracy would have been improved by using another method to show whether there was a relationship between the ward's level of deprivation and number of Nepalese residents. It would be particularly interesting to repeat a similar investigation in 2021, when updated census information will be available allowing me to show changes regarding the Nepalese population over a decade. I felt that my RQ was testable and manageable, focusing on spatial patterns within one town. Analysing the interactions of one ethnic group allowed me to further focus the investigation. The process of writing this essay has led me to become more aware of the status of minority populations within my local area while my understanding of ethnic integration has developed. The research that I have undertaken could be useful for those investigating the interactions of the Nepalese in other parts of the UK and also in the creation of new theoretical models needed to evolve existing geographic frameworks of integration and assimilation, especially in coastal areas that have experienced the cycle of deprivation and subsequent efforts of rejuvenation.