Using Spatial and Geodemographic Analysis to understand Distraction Burglary in the East of England

Ruth Weir

INTRODUCTION

- Research used GIS to explore spatial patterns of the offences
- Considered the link between geodemographic classifications and victims addresses
- Also investigated whether the victim profile of Trading Standards reported doorstep offences was the same as police recorded victims

What is distraction burglary?

• A crime where a “falsehood, trick or distraction is used on a occupant of a dwelling to gain, or try to gain, access to the premises to commit burglary” (Home Office, 2004).

• Also known as burglary artifice or bogus callers.

• Offenders often pose as an official such as a policeman, utility company employee or council worker, and therefore have face to face contact with their victims.

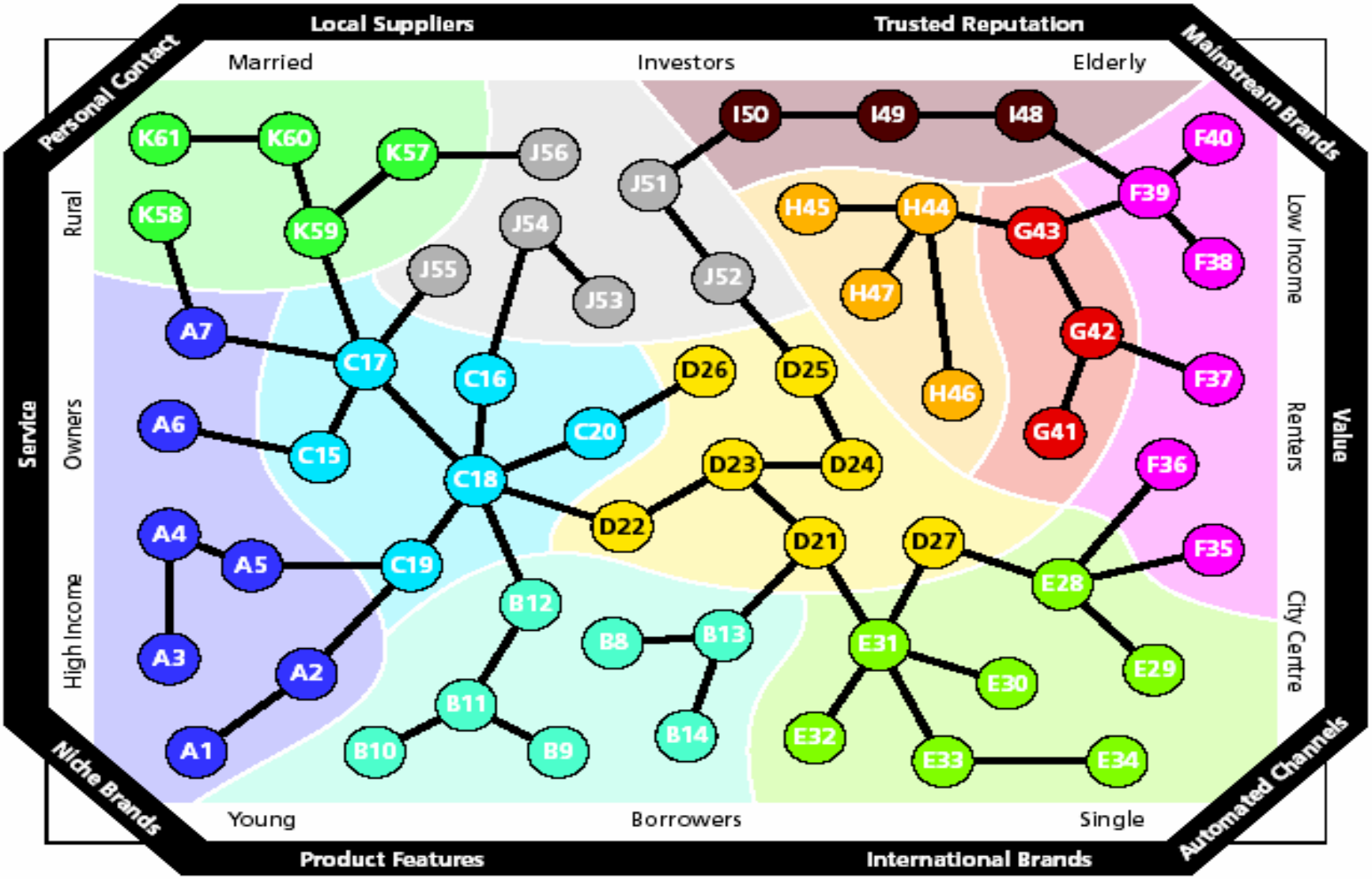
Why was the research needed?

- Increasingly intrusive nature of the crime
- Need a better understanding of cross border and regional nature of the crime
- Offenders thought to travel further than domestic burglars to avoid recognition.
- Thought to be underreporting of this offence
- Significant impact on victims
- Little of the previous work on distraction burglary has used GIS to understand the issue further. Largely been around psychological and social impacts on victims.

Geodemographic Analysis

- Use of geodemographic classifications to understand crime and disorder issues in the UK seen renewed interest in recent years.
- Methods traditionally used by commercial organisations to understand their customers now used in policing and crime reduction to understand more about victims and offenders and target resources more effectively.
- Ability to conduct analysis at unit postcode level overcomes issues of working with larger more heterogeneous areas (e.g. districts).

Mosaic


Local Suppliers
Trusted Reputation
Personal Contact
Mainstream Brands
Married
Investors
Elderly
Rural
Low Income
Owners
Renters
High Income
City Centre
Service
Value
Niche Brands
Automated Channels
Young
Borrowers
Single
Product Features
International Brands
K61
K60
K57
J56
K58
K59
J54
J55
J53
A7
C17
C16
A6
C15
C18
C20
D26
D25
A4
A5
C19
D22
D23
D24
D21
D27
A3
A2
A1
B12
B8
B13
B11
B10
B9
B14
E31
E28
E30
E29
E32
E33
E34
I50
I49
I48
J51
J52
H45
H44
G43
H47
H46
G42
G41
F40
F39
F38
F37
F36
F35

The Study Area

- Cambridgeshire, Essex and Suffolk

Source; Pictures of England, 2004

Previous Research

Surrey Police found that:

- 77% of victims were female
- 74% lived alone
- 12% lived in sheltered accommodation
- Average age of victims was 78 years old
- Previous geodemographic analysis found that those at greatest risk of being a victim of burglary (not distraction) lived in high and low rise flats
- Thought to be a link between those committing distraction burglary and trading standards reported bogus callers

Methodology

Data:

- 3 years
- Crime location (address, postcode, grid reference)
- Date and time
- Victim information (age, gender, ethnicity)
- Offender where known (age, gender, ethnicity, address)
- Trading standards data
- Mosaic data (Experian)

Software:

- MapInfo with Hotspot Detective
- Crimestat and SPSS

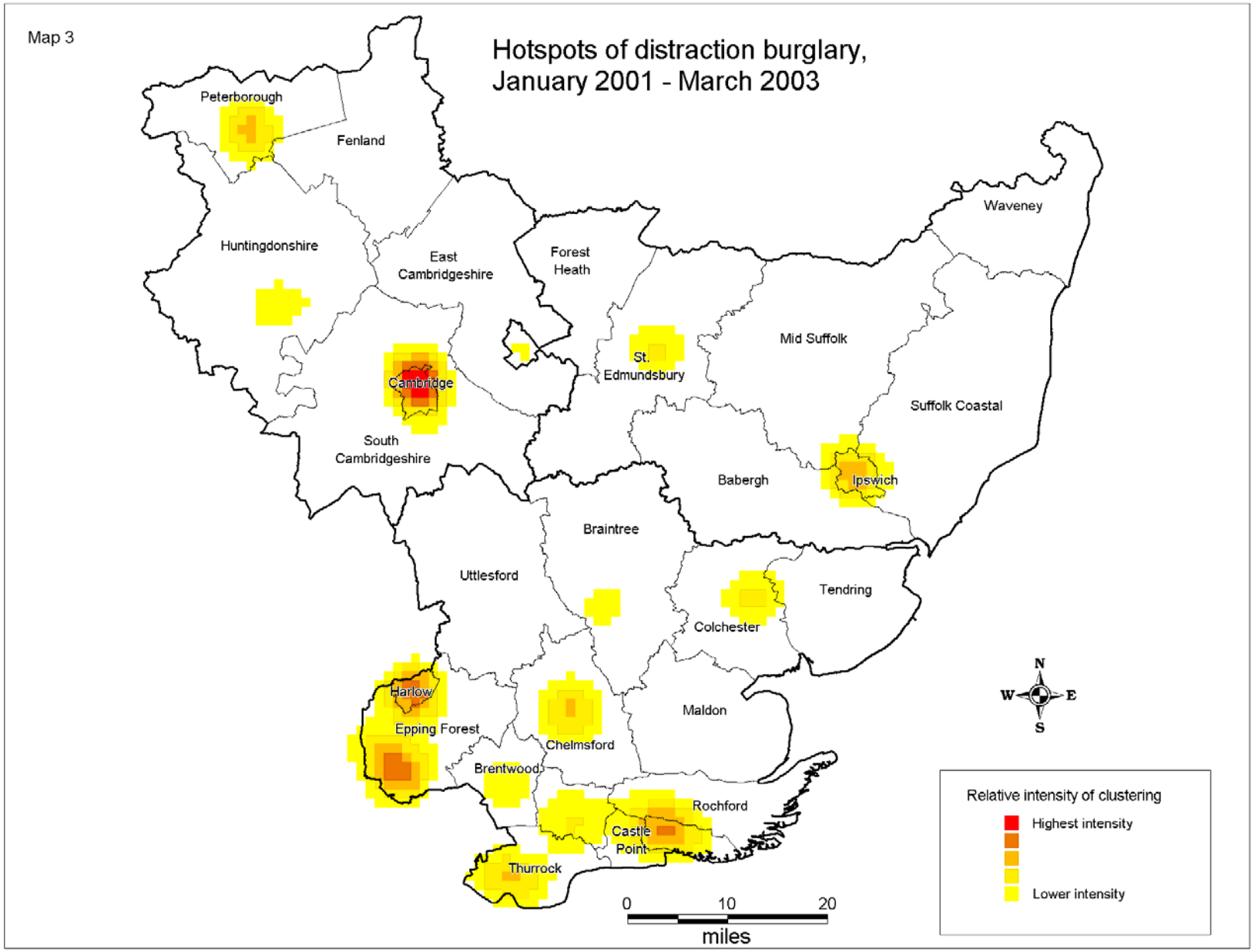
Spatial Analysis

- Hotspot maps
- Rate maps using Census Output Areas

Geodemographic Analysis

- Victim postcodes matched to Mosaic groups
- Totals in each group calculated (by force)
- Force-wide profiles obtained (% of population in each group)
- Risk score calculated ((number of offences in Mosaic group/force population in Mosaic group) x 100)
- Likelihood maps produced using risk bands

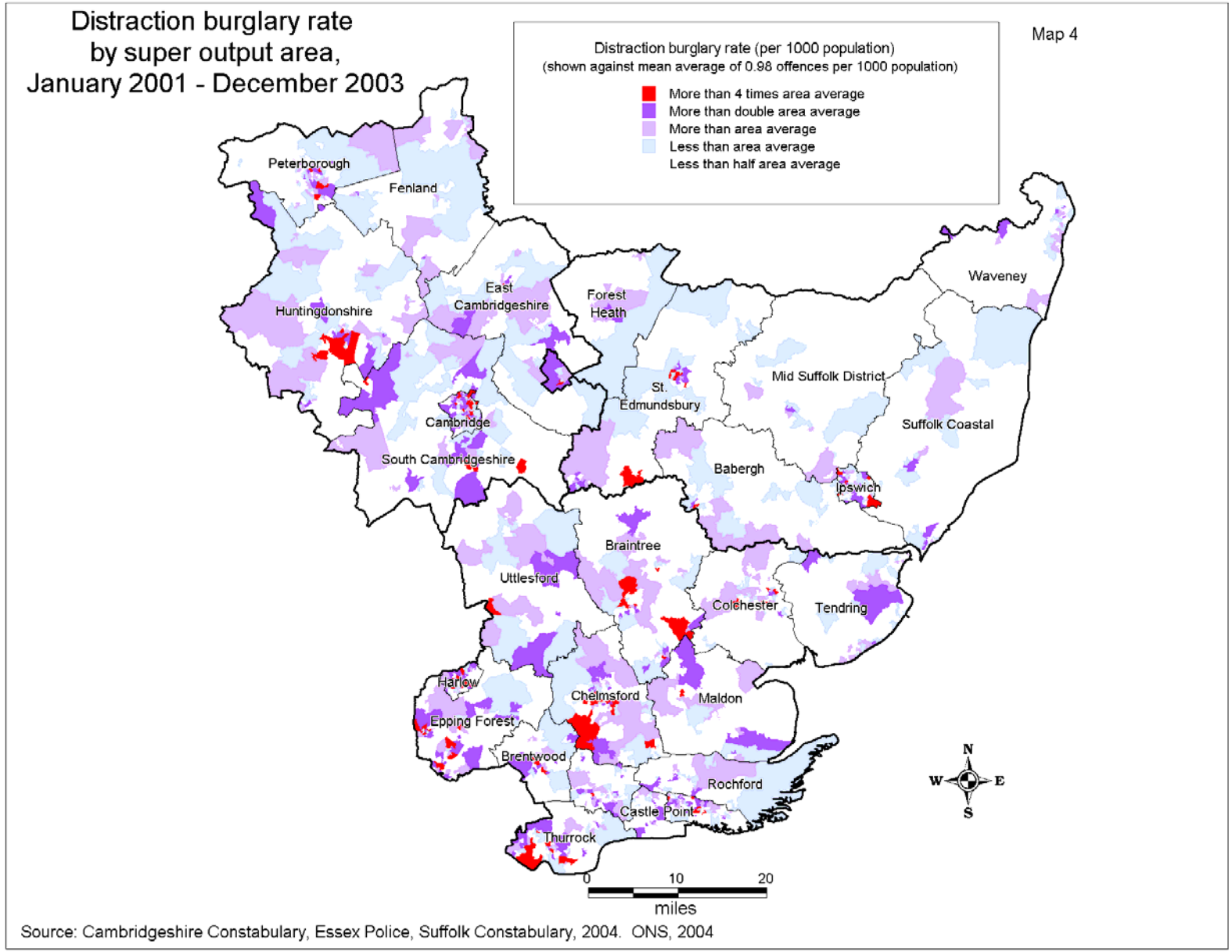
Map 3



Source Cambridgeshire Constabulary, Essex Police, Suffolk Constabulary, 2004 Crown Copyright Ordnance Survey. An EDINA Digimap/JISC supplied Service

Distraction burglary rate by super output area, January 2001 - December 2003

Map 4



Source: Cambridgeshire Constabulary, Essex Police, Suffolk Constabulary, 2004. ONS, 2004

Spatial Analysis

- Nearest neighbour test showed data was not spatially random
- Hotspot map identified clustering in urban areas. Useful for identifying high volumes of offences, but not surprising as higher population densities
- Thematic maps consider the population density by identifying the areas with the highest rate (per 1000 population).
- Used together can identify rates and volumes

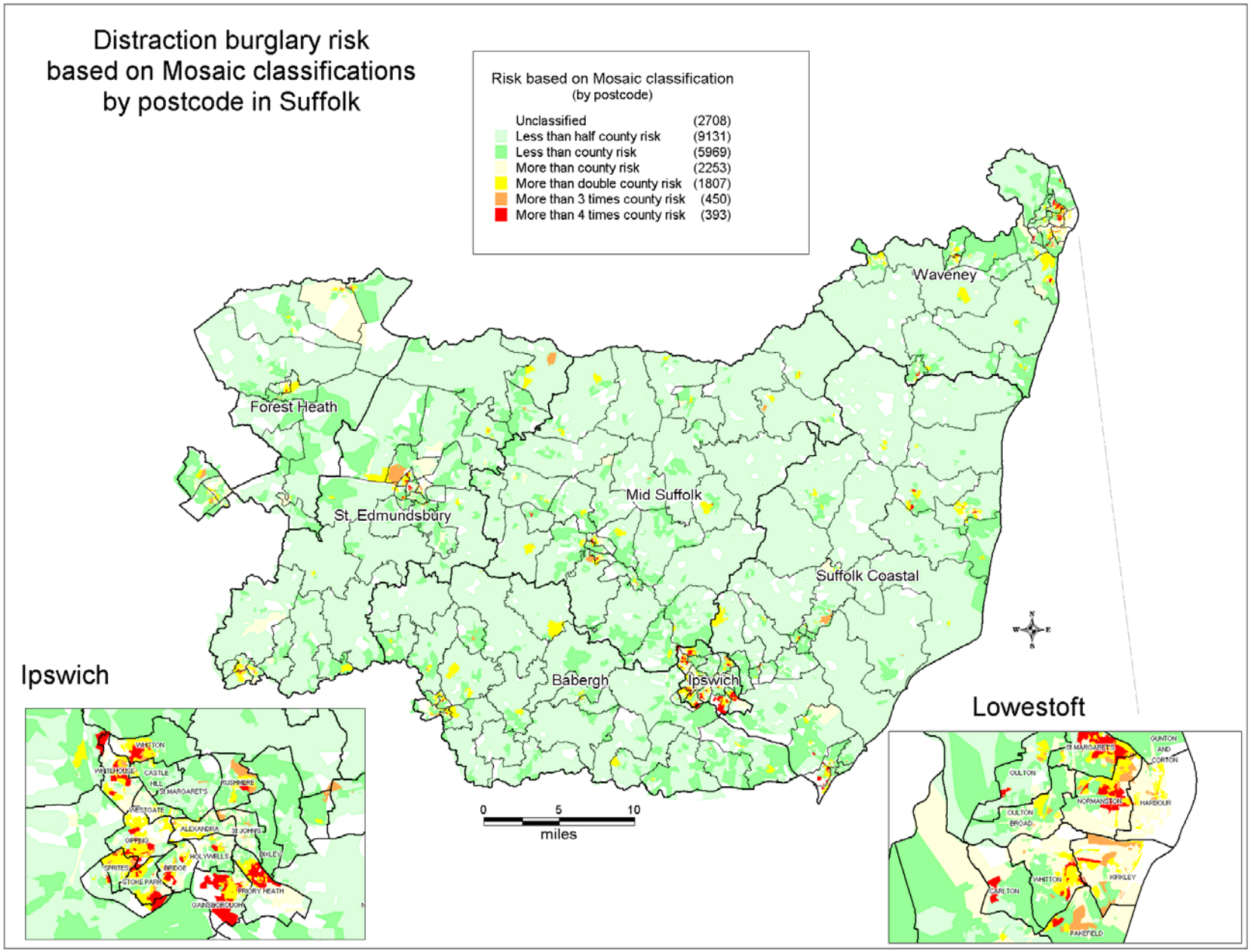
Victim Profiles

Force	Female %	Male %	Mean age	Total Victims
Cambridgeshire	72.6	27.4	79.0	785
Essex	75.7	24.3	79.5	2642
Suffolk	66.6	33.4	65.4	554
Combined	73.8	26.2	76.3	3981

GEODEMOGRAPHIC ANALYSIS

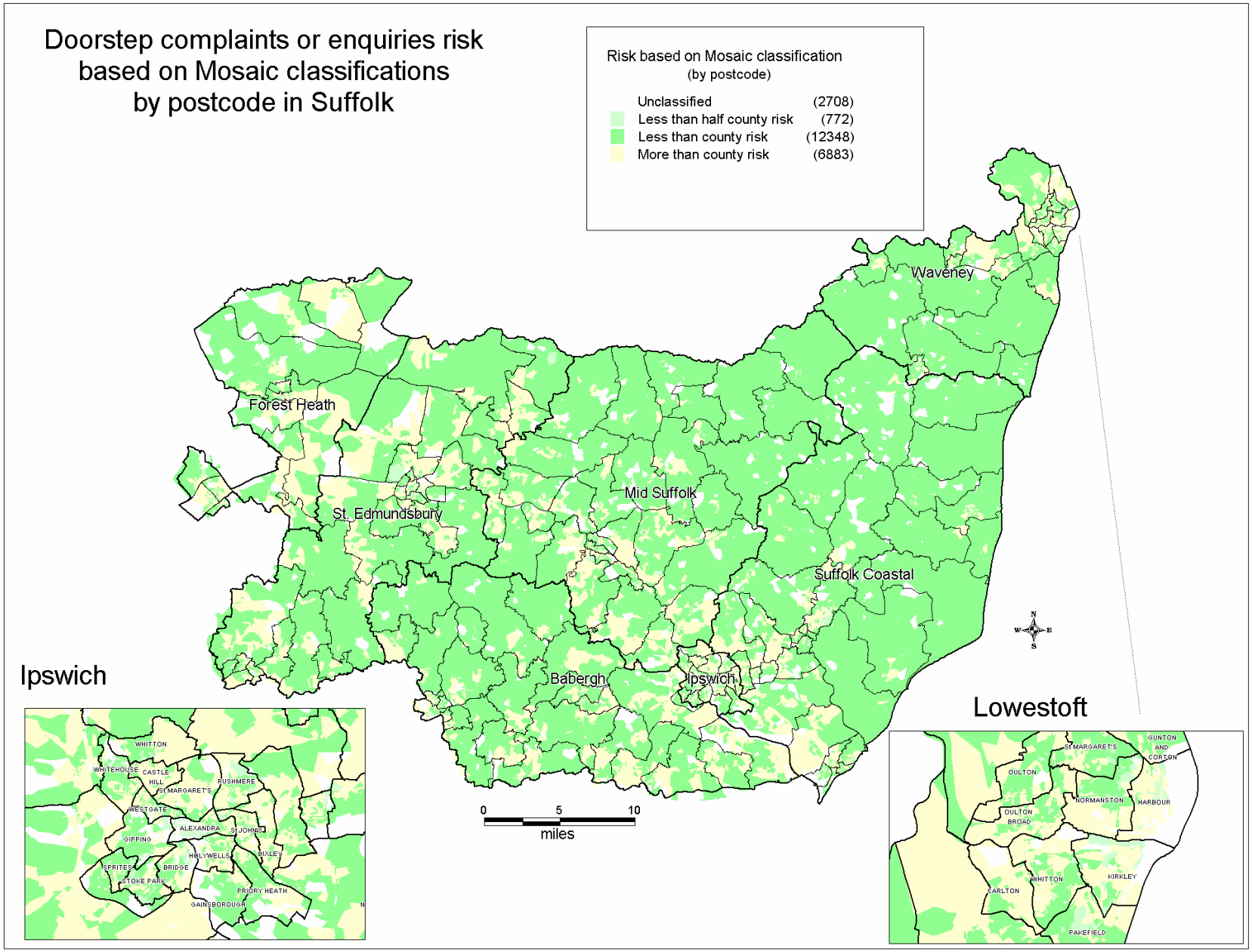
Mosaic Groups	Cambs	Essex	Suffolk	Suffolk Trading Standards
A Symbols of Success	0.06	0.06	0.01	0.12
B Happy Families	0.02	0.03	0.02	0.05
C Suburban Comfort	0.09	0.08	0.06	0.08
D Ties of Community	0.15	0.10	0.14	0.07
E Urban Intelligence	0.16	0.12	0.08	0.05
F Welfare Borderline	0.30	0.22	0.21	0.03
G Municipal Dependency	0.22	0.19	0.43	0.05
H Blue Collar Enterprise	0.21	0.21	0.20	0.05
I Twilight Subsistence	0.58	0.78	0.35	0.02
J Grey Perspectives	0.24	0.16	0.09	0.06
K Rural Isolation	0.08	0.05	0.02	0.05
County	0.14	0.13	0.10	0.07

Distraction burglary risk based on Mosaic classifications by postcode in Suffolk



Source: Suffolk Constabulary, 2004, Experian, 2004

Doorstep complaints or enquiries risk based on Mosaic classifications by postcode in Suffolk



Source: Suffolk Trading Standards, 2004, Experian, 2004

Geodemographic Analysis

- Actual risk of being a victim of distraction burglary is very low (although this is based on recorded offences and it is thought that there is significant underreporting of this offence type)
- Certain geodemographic groups more likely to be a victim (based on past data – prediction value needs to be tested further)
- Trading Standards offences do not demonstrate the same patterns. This may be because the address recorded is that of the complainant, and this may not be the victim.
- Uncertainty around whether risk is uniform across the whole area. Could be other factors that influence risk such as proximity to major roads.

Practical use of risk maps

- Targeting resources at the high risk postcodes
- Producing a campaign that specifically targets a certain group using the marketing methods to which they respond best (e.g. Grey Perspectives prefer face to face contact).
- This research used the 11 groups due to the relatively low number of offences. With more data the 61 types could be used to gain more of an understanding about potential victims.

Conclusions

- Targeted predominantly older adults
- Certain geodemographic groups more likely to be a victim
- Using spatial and geodemographic analysis together has provided more of an understanding of the crime and its potential victims.
- Further research is required to see whether the same trends are found elsewhere and whether other factors (e.g. proximity to roads) influence offenders choice of victims.

CONTACT DETAILS:

Ruth Weir

Ruth.weir@essexcc.gov.uk

+44 1245 341931