## Results - Geodemographics Groups

| Rules   | Cosmopolitan student<br>neighbourhoods | Countryside living | Ethnically diverse professionals | Hard-pressed communities | Industrious communities | Inner city cosmopolitan | Multicultural living | Suburban living |
|---|--|--------------------|----------------------------------|--------------------------|-------------------------|-------------------------|----------------------|-----------------|
| {British}=>{Pub/Bar}                                    | 7 %                                    | 12 %               | 7 %                              | 8 %                      | 10 %                    | 7 %                     | 4 %                  | 12 %            |
| {British}=>{Work_Place/Education}                       | 25 %                                   | 8 %                | 18 %                             | 14 %                     | 15 %                    | 12 %                    | 18 %                 | 16 %            |
| {Cakes & Pastries}=>{Baker-Retail}                      | 15 %                                   | 20 %               | 20 %                             | 36 %                     | 27 %                    | 24 %                    | 26 %                 | 28 %            |
| {Crisps}=>{Convenience}                                 | 37 %                                   | 26 %               | 38 %                             | 27 %                     | 23 %                    | 45 %                    | 36 %                 | 30 %            |
| {Hot Beverages}=>{Baker-Retail}                         | 3 %                                    | 7 %                | 6 %                              | 13 %                     | 7 %                     | 8 %                     | 6 %                  | 8 %             |
| {Hot Beverages}=>{Fast_Food}                            | 13 %                                   | 6 %                | 4 %                              | 7 %                      | 7 %                     | 4 %                     | 5 %                  | 4 %             |
| {International}=>{Pub/Bar}                              | 10 %                                   | 16 %               | 9 %                              | 8 %                      | 14 %                    | 4 %                     | 5 %                  | 14 %            |
| {Produce}=>{Convenience}                                | 46 %                                   | 14 %               | 18 %                             | 12 %                     | 20 %                    | 23 %                    | 24 %                 | 8 %             |
| {Produce}=>{Supermarket}                                | 39 %                                   | 24 %               | 31 %                             | 25 %                     | 36 %                    | 38 %                    | 18 %                 | 35 %            |
| {Produce}=><br>{Work_Place/Education}                   | 0 %                                    | 18 %               | 17 %                             | 26 %                     | 16 %                    | 1 %                     | 26 %                 | 38 %            |
| {Sandwiches}=><br>{Café/Coffee_Shop}                    | 9 %                                    | 15 %               | 11 %                             | 9 %                      | 11 %                    | 26 %                    | 11 %                 | 11 %            |
| {Sandwiches}=>{Convenience}                             | 18 %                                   | 10 %               | 19 %                             | 7 %                      | 9 %                     | 19 %                    | 14 %                 | 9 %             |
| {Sandwiches}=><br>{Work_Place/Education}                | 7 %                                    | 7 %                | 7 %                              | 12 %                     | 10 %                    | 4 %                     | 10 %                 | 12 %            |
| {Savoury Snacks}=>{Convenience}                         | 56 %                                   | 30 %               | 42 %                             | 39 %                     | 35 %                    | 59 %                    | 41 %                 | 31 %            |
| {Soft Drinks}=>{Convenience}                            | 17 %                                   | 12 %               | 19 %                             | 14 %                     | 13 %                    | 28 %                    | 18 %                 | 12 %            |
| {Soft Drinks}=>{Pub/Bar}                                | 6 %                                    | 10 %               | 5 %                              | 6 %                      | 9 %                     | 5 %                     | 4 %                  | 9 %             |
| {[0.0-3.65),Sandwiches}=><br>{Supermarket}              | 32 %                                   | 28 %               | 20 %                             | 13 %                     | 22 %                    | 20 %                    | 17 %                 | 22 %            |
| {[3.65-8.75),Hot Beverages}=><br>{Work_Place/Education} | 9 %                                    | 3 %                | 4 %                              | 7 %                      | 7 %                     | 4 %                     | 18 %                 | 10 %            |
| {[3.65-8.75)}=>{Baker-Retail}                           | 4 %                                    | 10 %               | 8 %                              | 15 %                     | 8 %                     | 9 %                     | 8 %                  | 9 %             |
| {[3.65-8.75)}=>{Convenience}                            | 5 %                                    | 5 %                | 6 %                              | 3 %                      | 4 %                     | 8 %                     | 6 %                  | 4 %             |

Φ value is continuous

-.25 -.15 -.1 -.05 0 .05 .1 .15 .25

Φ value is continuous
 Φ > .05 indicates a week correlation between the antecedent has a positive effect of the consequent.
 Φ > .10 indicates a moderate correlation between the antecedent has a positive effect of the consequent.
 Φ > .15 indicates a strong correlation between the antecedent has a positive effect of the consequent.
 Φ > .25 indicates a very strong correlation between the antecedent has a positive effect of the consequent.
 Akoglu, H., 2018. User's guide to correlation coefficients. Turkish Journal of Emergency Medicine. doi:10.1016/j.tjem.2018.08.001.

## An ESRC Data Investment





| {British}=>{Pub/Bar}              | 7 %  | 12 % | 7 %  | 8 %  | 10 % | 7 %  | 4 %  | 12 % |
|-----------------------------------|------|------|------|------|------|------|------|------|
| {British}=>{Work_Place/Education} | 25 % | 8 %  | 18 % | 14 % | 15 % | 12 % | 18 % | 16 % |

| {Produce}=>{Convenience}              | 46 % | 14 % | 18 % | 12 % | 20 % | 23 % | 24 % | 8 %  |
|---------------------------------------|------|------|------|------|------|------|------|------|
| {Produce}=>{Supermarket}              | 39 % | 24 % | 31 % | 25 % | 36 % | 38 % | 18 % | 35 % |
| {Produce}=><br>{Work_Place/Education} | 0 %  | 18 % | 17 % | 26 % | 16 % | 1 %  | 26 % | 38 % |

| {Soft Drinks}=>{Convenience} | 17 % | 12 % | 19 % | 14 % | 13 % | 28 % | 18 % | 12 % |
|------------------------------|------|------|------|------|------|------|------|------|
| {Soft Drinks}=>{Pub/Bar}     | 6 %  | 10 % | 5 %  | 6 %  | 9 %  | 5 %  | 4 %  | 9 %  |

| Rules | Cosmopolitan student<br>neighbourhoods | Countryside living | Ethnically diverse professionals | Hard-pressed communities | Industrious communities | Inner city cosmopolitan | Multicultural living | Suburban living |
|-------|--|--------------------|----------------------------------|--------------------------|-------------------------|-------------------------|----------------------|-----------------|
|       | neignbournoods                         |                    |                                  |                          |                         |                         |                      |                 |

| {Produce}=>{Convenience}              | 46 % | 14 % | 18 % | 12 % | 20 % | 23 % | 24 % | 8 %  |
|---------------------------------------|------|------|------|------|------|------|------|------|
| {Produce}=>{Supermarket}              | 39 % | 24 % | 31 % | 25 % | 36 % | 38 % | 18 % | 35 % |
| {Produce}=><br>{Work_Place/Education} | 0 %  | 18 % | 17 % | 26 % | 16 % | 1 %  | 26 % | 38 % |

## Results - Geodemographics Groups



-.25 -.15 -.1 -.05 0 .05 .1 .15 .

Φ value is continuous

> .05 indicates a week correlation between the antecedent has a positive effect of the consequent.

> .10 indicates a moderate correlation between the antecedent has a positive effect of the consequ

Φ > .15 indicates a strong correlation between the antecedent has a positive effect of the consequent.
Φ > .25 indicates a very strong correlation between the antecedent has a positive effect of the consequent.

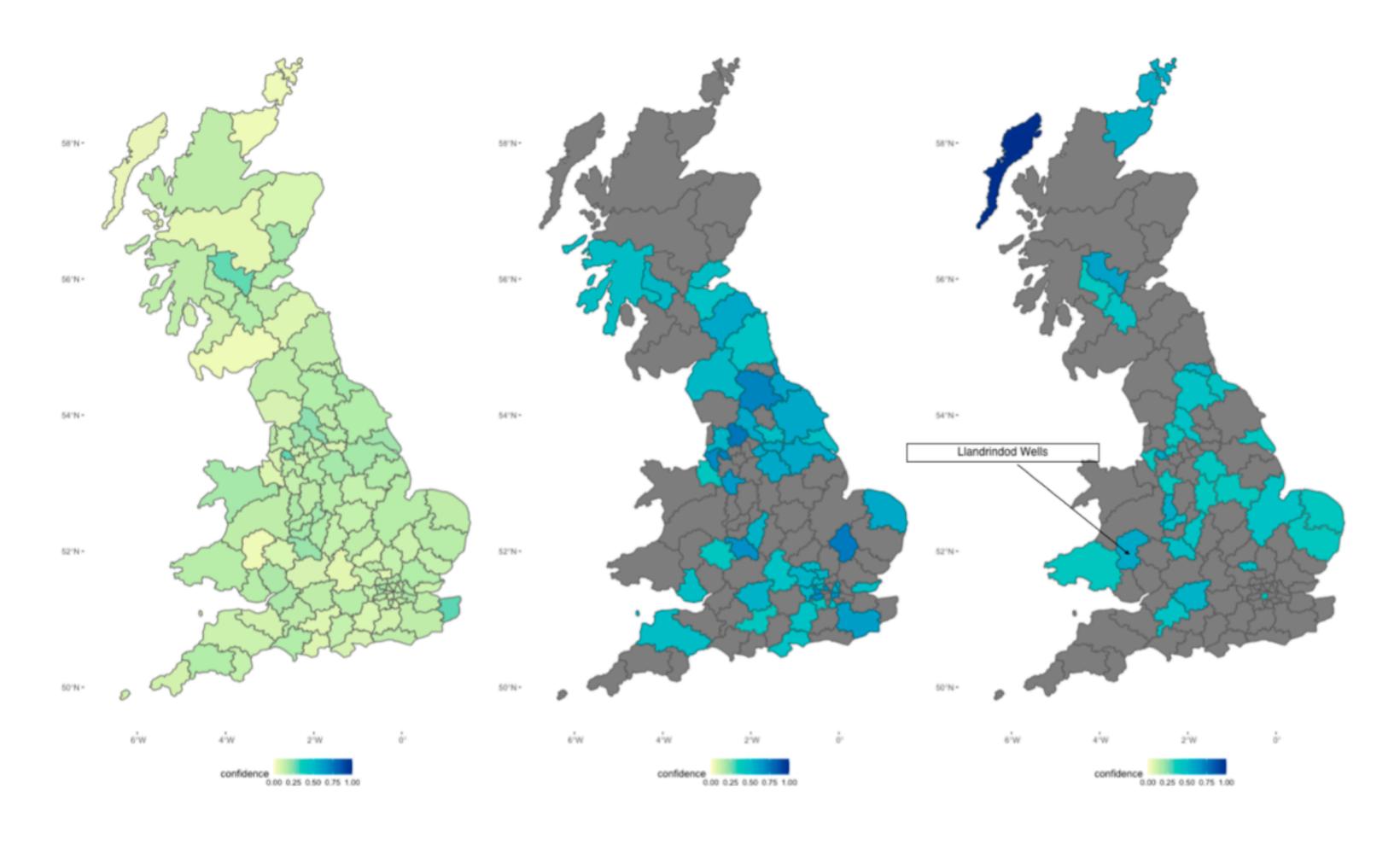
Akoglu, H., 2018, User's guide to correlation coefficients, Turkish Journal of Emergency Medicine, doi:10.1016/j.tiem.2018.08.001.







## Results - Regions



(Left Panel) observed confidence level for the rule "{} → {Fast-food}"; (Central Panel) confidence estimates for the rule "{Italian} → {Fast-food}"; (Right Panel) confidence value estimates for the rule "{British} → {Fast-food}" Note: Rules with phi value less than 0.25 were marketed as NA.



