

# **Population Science**

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# Welcome

This is a Quarto book.

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Rowe, Lovelace, and Dennett (2022)

1 + 1

[1] 2

# 1 Introduction

This is a book created from markdown and executable code.

See Knuth (1984) for additional discussion of literate programming.

```
1 + 1
```

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[1] 2
```

## 2 Data Privacy, Ethics and Biases

- Rowe (2021b)
- Green, Pollock, and Rowe (2021)

## 3 Geodemographics

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See Knuth (1984) for additional discussion of literate programming.

```
1 + 1
```

```
[1] 2
```

## 4 Sequence Analysis

This chapter shows the use of sequence analysis to study population decline and draw on the following papers:

- Rowe, Neville, and González-Leonardo (2022)
- Newsham and Rowe (2022)
- Rowe, Robinson, and Patias (2022)

## 5 Network Analysis

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See Knuth (1984) for additional discussion of literate programming.

```
1 + 1
```

```
[1] 2
```



## 6 Sentiment Analysis

This chapter will draw on:

- Rowe (2021a)
- Rowe et al. (2021)

## 7 Topic Modelling

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1 + 1
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[1] 2
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## 8 Modelling Time

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[1] 2
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## 9 Assessing Interventions

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1 + 1
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[1] 2
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# 10 Machine Learning

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See Knuth (1984) for additional discussion of literate programming.

```
1 + 1
```

```
[1] 2
```

# References

- Green, Mark, Frances Darlington Pollock, and Francisco Rowe. 2021. “New Forms of Data and New Forms of Opportunities to Monitor and Tackle a Pandemic.” In, 423–29. Springer International Publishing. [https://doi.org/10.1007/978-3-030-70179-6\\_56](https://doi.org/10.1007/978-3-030-70179-6_56).
- Knuth, Donald E. 1984. “Literate Programming.” *Comput. J.* 27 (2): 97–111. <https://doi.org/10.1093/comjnl/27.2.97>.
- Newsham, Niall, and Francisco Rowe. 2022. “Understanding the Trajectories of Population Decline Across Rural and Urban Europe: A Sequence Analysis.” <https://doi.org/10.48550/ARXIV.2203.09798>.
- Rowe, Francisco. 2021a. “Using Twitter Data to Monitor Immigration Sentiment.” <http://dx.doi.org/10.31219/osf.io/sf7u4>.
- . 2021b. “Big Data and Human Geography.” <http://dx.doi.org/10.31235/osf.io/phz3e>.
- Rowe, Francisco, Robin Lovelace, and Adam Dennett. 2022. “Spatial Interaction Modelling: A Manifesto.” <http://dx.doi.org/10.31219/osf.io/xcdms>.
- Rowe, Francisco, Michael Mahony, Eduardo Graells-Garrido, Marzia Rango, and Niklas Sievers. 2021. “Using Twitter to Track Immigration Sentiment During Early Stages of the COVID-19 Pandemic.” *Data & Policy* 3. <https://doi.org/10.1017/dap.2021.38>.
- Rowe, Francisco, Ruth Neville, and Miguel González-Leonardo. 2022. “Sensing Population Displacement from Ukraine Using Facebook Data: Potential Impacts and Settlement Areas.” <http://dx.doi.org/10.31219/osf.io/7n6wm>.
- Rowe, Francisco, Caitlin Robinson, and Nikos Patias. 2022. “Sensing Global Changes in Local Patterns of Energy Consumption in Cities During the Early Stages of the COVID-19 Pandemic.” *Cities* 129 (October): 103808. <https://doi.org/10.1016/j.cities.2022.103808>.