9 Tracking via Bespoke Research Apps

What this chapter will cover:

- The technique of collecting data from bespoke apps that have been designed to track tourists and collect their socio-demographic data.

- The contributions that this form of data have made to understanding dispersal, how different segments of tourists travel and the factors that influence tourists' movement through time and space.

- The methodological advantages and limitations of this expensive yet highly detailed spatio-temporal method.

- The ethical advantages of this form of data which requires informed consent.

Introduction

In the past ten years, several apps have been developed by research teams with the specific intention of tracking tourists. These apps contain user interfaces that explicitly communicate the function of these apps. They differ to apps, websites and social media sites described in the previous chapters, because the primary function of their user interface is to track and understand the characteristics of tourists. This form of

tracking produces highly detailed, tourism-specific data which can be of great value to tourism researchers. But it is not without its challenges. These will be explored in this chapter.

How bespoke apps work

Apps that have been designed to track tourists' movement generally contain three elements. They contain:

1. A user interface that may or may not have value-adds such as maps and destination information;

2. A survey function that collects socio-demographic and behavioural data from app users – multiple surveys may be used, such as entry and exist surveys, or location based surveys that 'pop-up' at pre-determined locations;

3. A tracking function, whereby location-based data is stored by the app and then sent to a server or dashboard for cleaning and visualisation.

Bespoke tracking apps have to take a variety of factors into consideration during their design. The first is that the app needs to be able to maximise tracking, therefore it is important that users are guided through the process of enabling location-based tracking and encouraged to select the option that allows ongoing tracking (Figure 9.1).

The next factor that bespoke apps must consider is that data needs to be collected at all times, on different brands of mobile phones. Apps of this nature use location-based data that is sourced from the mobile phone's communication with satellites. Commonly used satellite systems that phones communicate with include the US GPS, Russian GLONAS, and EU Galileo. Well-designed bespoke apps will collect the GPS coordinates, even when the mobile phone is out of cell tower range, and then once they detect the mobile phone has reception or is within Wi-Fi range, will send the data to a server for cleaning and analysis.
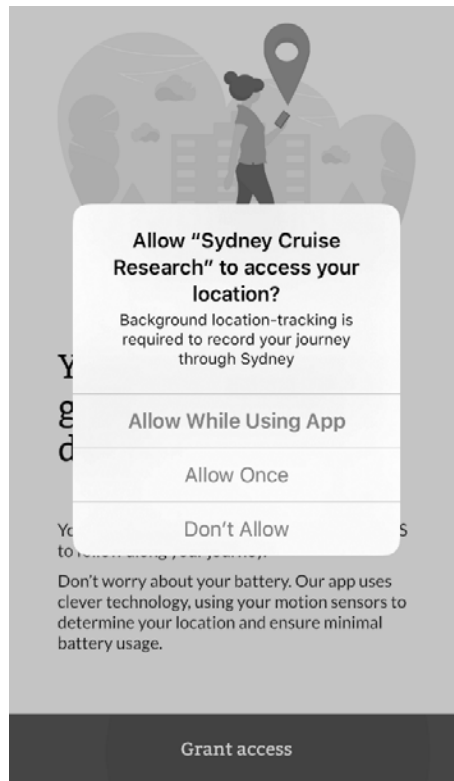
Figure 9.1: Instructions for enabling location-based tracking on the Tourism Tracker bespoke tracking app

Bespoke apps must also consider battery life, as the collection of location-based data can drain battery life very quickly. Researchers must balance data granularity with power saving. In the case of the bespoke app called Tourism Tracer, a decision was made to set the collection of data to ten metres every 2 seconds. This granularity allowed tourists' movement to be tracked with high detail, without impacting on the battery life of the host mobile phone (Hardy et al., 2017).

A further functionality that is required is usability. Bespoke apps rely on users providing personal and potentially sensitive information to the researcher. The app design must be user friendly and ensure that users are confident in its ability to store their data ethically and safely. Some apps provide incentives to users in return for them providing their data in the first instance (Hardy et al., 2017). Similarly, given that bespoke apps can track tourists' movement for multiple days and potentially very long periods of time, there is also a necessity for