

**USING DIGITAL MAPS AND GPS FOR  
PLANNING AND NAVIGATION IN FIELD SURVEYS**

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**ABSTRACT**

A major activity in field data collection is finding and navigating to sample sites such as housing units and businesses. These tasks are especially challenging when staff receive assignments in unfamiliar areas or when sample units are hard to find. The emergence of readily available digital geospatial information resources offers an opportunity to provide more effective tools for finding sample units in the field. We conducted an observational study to explore how digital maps and GPS-derived locations displayed on a tablet computer could be used for route planning and for locating sample units in a vehicle. Field staff used map software in the office to plan a route for a set of business outlets, and then used map software and GPS in their vehicles to navigate to outlets. There was wide variation in user preferences for written directions and graphical displays as predicted by spatial cognition theory. Users did best when minimal information was presented in a simple, easy-to-read interface, reducing the cognitive burden associated with map reading. GPS also served to reduce the cognitive load while traveling, particularly in unfamiliar areas and when recovering from navigational errors.