

Preferences for Methods of Destination Entry

Jackie C. Chang
 Electronics Research Lab
 Volkswagen Group of America, Inc.
 4005 Miranda Avenue, Suite 100
 Palo Alto, CA 94304
 +1 (650) 496-7000
 jackie.chang@vw.com

ABSTRACT

Arguably the most time consuming navigation task in a vehicle, not to mention the most prone to error, is entry of a destination. Designers and engineers of navigation systems are constantly trying to find a balance between the way people are used to describing a destination address, and the constraints of the system in terms of the data and data format it understands. Attempting to accommodate user preferences may sometimes complicate the system further, either technologically or from a usability perspective, so it is important to understand which features are most important to a potential customer.

Twenty-one participants (12 male, 9 female), between the ages of 27 and 53 ($M=39$, $SD=8$), participated in a survey on navigation destination entry preferences. Participants were given descriptions of eight different methods of navigation data entry, which differed according to the three independent variables: 1) whether data entry is verbal (speech commands) or manual (soft key keyboard buttons), 2) whether the U.S. state is pre-filled or not, and 3) whether an address is entered as one sentence or as separate fields/utterances so that house number, street, city, and state are separate entries. Participants were asked to rank the methods from most preferred (1) to least preferred (8).

The average ranking for each of the eight methods, across the twenty-one participants, is shown in the graph below (see Figure 1). Method 1 was most preferred, and Method 8 was least preferred.

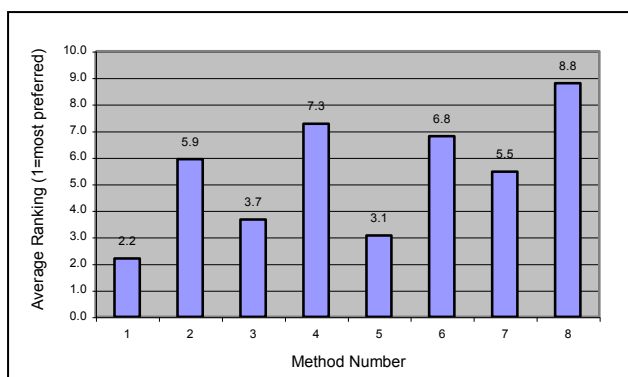


Figure 1. Average Participant Ranking of Methods of Destination Entry (1=most preferred)

Copyright held by author(s)
 AutomotiveUI'10, November 11-12, 2010, Pittsburgh, Pennsylvania
 Adjunct Proceedings

When viewed with the methods rearranged by their ranking, (see Table 1) some conclusions become more apparent:

Table 1. Methods of Destination Entry Rearranged by Average Participant Ranking (1=most preferred)

Average Participant Ranking	Method Number	Feature 1	Feature 2	Feature 3
2.2	#1	Verbal	State Pre-filled	One Sentence
3.1	#5	Verbal	State Pre-filled	Multiple Fields
3.7	#3	Verbal	State Never Pre-filled	One Sentence
5.5	#7	Verbal	State Never Pre-filled	Multiple Fields
5.9	#2	Manual	State Pre-filled	One Sentence
6.8	#6	Manual	State Pre-filled	Multiple Fields
7.3	#4	Manual	State Never Pre-filled	One Sentence
8.8	#8	Manual	State Never Pre-filled	Multiple Fields

First of all, participants largely preferred verbal destination entry to manual destination entry. Secondly, they preferred the state pre-filled to the state not pre-filled. Thirdly, they preferred entering destinations as one sentence to entering them as multiple fields. Lastly, if the three features are compared to each other, their order of importance would be: verbal entry, then state pre-filled, then one sentence entry.

In addition to seeing which method users prefer, manual vs. speech, state pre-filled vs. not pre-filled, or one sentence vs. multiple field entry, by asking participants to evaluate methods that are combinations of the three variables, we get a picture of which feature is most important to participants. This is useful in real world application, perhaps if budget, timeline, or engineering difficulty prevents all features from being implemented in the system. Especially when there are pros and cons to each feature, it is helpful to know what users prefer if they could not have all the options.