

APPENDIX K : USABILITY DEMOGRAPHICS

Relationships Between Demographic Characteristics And Perceptions Of The Systems, Motorola And XYPOINT

Motorola Significant Differences in Responses by Gender, Income, Occupation, Age, and Average Annual Vehicle Miles Traveled

Pearson chi-square analyses of responses to yes/no questions by gender indicated significant differences in responses to one question. When respondents were asked if they believe this system could provide a service not encountered before, males were more likely than females to answer yes ($\chi^2 = 6.3, p < .05$).

Mann-Whitney U-tests indicated significant differences in responses by gender to four questions. Females were more likely than males to report that: (1) they were heard by the operator when using only the microphone ($u = 8.0; p < .05$; mean rank females = 12.5; mean rank males = 7.2); (2) they found the microphone more effective than the handset ($u = 4.0; p < .05$; mean rank females = 13.5; mean rank males = 6.8); and (3) they preferred using the microphone ($u = 6.0; p < .05$; mean rank females = 16.0; mean rank males = 8.4). Males were more likely than females to indicate that they preferred using the handset ($u = 7.5; p < .05$; mean rank males = 12.6; mean rank females = 4.4).

The age of respondents correlated with responses to three survey questions. Age positively correlated with: (1) feeling more secure in their vehicle if this system were permanently available to them ($r = .4843, p = .022$); and (2) hearing the phone beep and begin dialing shortly after pressing the EMER, RA, or TA button ($r = .4698, p = .037$). Age inversely correlated with finding the operator's voice at the response center easy to understand ($r = -.5137, p = .014$). In addition, there was nearly statistical significance in age positively correlating with feeling more secure if this system were permanently available to other family members ($r = .4062, p = .061$).

The average annual vehicle miles traveled correlated with responses to one survey question. The average annual vehicle miles traveled by respondents inversely correlated with the time the operator took to respond to their Call being consistent ($r = -.5389, p = .021$).

The Pearson chi-square and Mann-Whitney analyses indicated no significant differences in responses to any questions when respondents were grouped by income or occupation.

Motorola Significant Differences in Responses by Cellular Phone Ownership, Use of Pagers, and Home Security Service Subscription

Pearson chi-square analyses of responses to yes/no questions by cellular phone ownership indicated significant differences in responses to one question. When respondents were asked if there were any features missing in the system that they would have expected to be included, those who did *not* own cellular phones were more likely to report that there were features missing in the system ($\chi^2 = 3.76$, $p = .05$). Mann-Whitney U-tests of responses to other questions indicated significant differences in responses to one question. Those who owned cellular phones were more likely to agree that, when disconnected, the phone automatically reconnected them with the operator ($u = 38.5$; $p < .05$; mean rank cellular phone owners = 13.5; mean rank non cellular phone owners = 9.5).

Mann-Whitney U-tests of responses to other questions by pager use indicated significant differences in responses to five questions. Those who did *not* use pagers were more likely to agree that: (1) they would feel more secure if this system were permanently available to other members of their family ($u = 29.0$; $p < .05$; mean rank non pager users = 13.7; mean rank pager users = 8.1); (2) they believe this system would be likely to help authorities deliver assistance when they are in situations requiring police, medical, or roadside assistance ($u = 30.0$; $p < .05$; mean rank non pager users = 13.3; mean rank pager users = 8.3); (3) they felt confident in selecting which button to push for each scenario they were given ($u = 31.0$; $p < .05$; mean rank non pager users = 13.6; mean rank pager users = 8.4); and (4) they preferred to use the microphone ($u = 21.0$; $p < .05$; mean rank non pager users = 12.4; mean rank pager users = 7.0). Those who *did* use pagers were more likely to agree that they preferred to use the handset ($u = 21.0$; $p < .05$; mean rank pager users = 16.0 mean rank non pager users = 9.4).

Mann-Whitney U-tests of responses to other questions by home security service subscription indicated significant differences in responses to one question. Those who were home security system subscribers were more likely to *agree* that the operator seemed to be able to hear them when they used only the handset ($u = 10.5$; $p < .01$; mean rank subscribers = 16.9; mean rank non-subscribers = 9.5).

XYPOINT Significant Differences in Responses by Gender, Income, Occupation, Age, and Average Annual Vehicle Miles Traveled

Analyses of responses by occupation indicated significant differences in responses to two questions. Respondents in non-technical occupations were significantly more likely to report that: (1) they believed this system would be likely to help authorities deliver assistance when in situations requiring police, medical, or roadside assistance ($u = 203$; $p < .05$; mean rank non-technical = 28.3; mean rank technical = 21.3); and (2) they found the device easy to use ($u = 188$; $p < .05$; mean rank non-technical = 29.1; mean rank technical = 20.1).

The age of respondents inversely correlated with being able to think of situations under which respondents felt the system would NOT be able to help them acquire emergency services ($r = .2813$, $p = .058$). In addition, there was nearly statistical significance in age inversely correlating with finding the messages on the device easy to understand ($r = -.2813$, $p = .058$).

The average annual vehicle miles traveled positively correlated with: (1) finding the time it took to receive an initial response usually consistent ($r = .1778$, $p = .001$); and (2) finding the system consistent in how it worked ($r = .1548$, $p = .014$).

Mann-Whitney analyses of differences in responses indicated no significant differences in responses to any questions by gender or income.

XYPOINT Significant Differences in Responses by Cellular Phone Ownership, Use of Pagers, and Home Security Service Subscription

Pearson chi-square analyses of responses to yes/no by cellular phone ownership indicated significant differences in responses to one question. When respondents were asked if they could think of any circumstances under which this system would NOT be able to help them acquire emergency services, respondents who did *not* own cellular phones were significantly more likely to indicate that they could think of circumstances in which this system would NOT be able to help them acquire emergency services ($\chi^2 = 7.04$, $p < .01$).

Pearson chi-square analyses of responses by pager use indicated significant differences in responses to one question. When respondents were asked if they found the device easy to reach, respondents who did *not* carry pagers with them were significantly more likely to indicate that they did find the device easy to reach ($\chi^2 = 5.41$, $p < .05$).

Pearson chi-square analyses of responses by home security system subscription indicated significant differences in responses to two questions. Those whose homes were *not* protected by home security systems were significantly more likely to indicate that: (1) something occurred during the tests that was unexpected ($\chi^2 = 3.95, p < .05$); and (2) they could think of circumstances under which this system would NOT be able to help them acquire emergency services ($\chi^2 = 4.53, p < .05$).