# Analysis Report

This report is structured as follows.

## Contents



SAMPLE REPORT - Rafael Data Analysis Portfolio

**Sample Characterization**

The tables below show the sample characteristics. The sample predominantly consists of male respondents working in medium-sized agencies (50-500 members). The majority of these agencies oversee urban areas, and more than half of the respondents are in non-supervisory roles.

| | | Count | Column N % |
|---|---|---|---|
| Gender | Female | 39 | 11.7% |
| | Male | 292 | 88.0% |
| | Prefer not to say | 1 | 0.3% |
| 5) What is the approximate size of your agency? | < 50 | 107 | 33.6% |
| | 50 - 500 | 117 | 36.8% |
| | 501 - 1500 | 28 | 8.8% |
| | > 1500 | 66 | 20.8% |
| 6) What type of geographic area is under your agency's jurisdiction? | Rural | 98 | 29.6% |
| | Suburban | 92 | 27.8% |
| | Urban | 141 | 42.6% |
| 7) What rank do you hold within your agency? | Executive Level | 28 | 8.5% |
| | Non-Supervisory | 186 | 56.4% |
| | Supervisory | 116 | 35.2% |

The mean age of the sample is 43 years old. The individuals have worked as law enforcement officers for 15 years on average.

*Descriptive Statistics*

| | N | Minimum | Maximum | Mean | Std. Deviation |
|---|---|---|---|---|---|
| 3) What is your current age? | 331 | 21 | 75 | 42.76 | 10.260 |
| 4) How many years have you been a full time Law Enforcement Officer? | 330 | .0 | 45 | 15.045 | 10.392 |
| 5) What is the approximate size of your agency? | 318 | 1 | 60000 | 2216 | 7022 |
| Valid N (listwise) | 316 | | | | |

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**Crosstabulations and Chi-Square tests**

Crosstabulations are used when the researcher wishes to explore the relationship between two variables using a tabular format. Statistical tests can be used to either compare frequencies (when variables are categorical) or mean scores (when one variable is measured in a continuous manner).

The following table displays the results of a crosstabulation for the distribution agency rank compared to ICS 300 certification. The chi-square test evaluates if the differences in the proportions of responses are significantly different for each group under analysis (column $\chi^2$). If the corresponding p-value (column p) is less than 0.05, this means that the rank distribution is significantly related to ICS certification, at least in a bivariate perspective.

The different proportions were also compared using SPSS's post-hoc tests with Bonferroni corrections, which evaluates each answer category separately, while the Chi-Square only evaluates the distribution of answers across all categories of a single question. The result of the post-hoc test is shown as subscript letters next to the count lines. If the letters diverge within a unique row, that means that having the ICS certification is significantly different between ranks.

| | | 7) What rank do you hold within your agency? | | | $\chi^2$ | p |
|---|---|---|---|---|---|---|
| | | Executive Level | Non-Supervisory | Supervisory | | |
| | | Column N % | Column N % | Column N % | | |
| 13) I have been certified in ICS 300 by or through my agency. | No | 10.5%$_a$ | 59.2%$_b$ | 26.1%$_a$ | 26.789 | .000* |
| | Yes | 89.5%$_a$ | 40.8%$_b$ | 73.9%$_a$ | | |

Note: Values in the same row and subtable not sharing the same subscript are significantly different at p< .05 in the two-sided test of equality for column proportions. Cells with no subscript are not included in the test. Tests assume equal variances.[1]

1. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

The chi-square value ($\chi^2$) is 26.789 with a p-value of .000*. Since the p-value is less than the conventional alpha level of 0.05, this indicates that there is a statistically significant association between rank within the agency and ICS 300 certification.

Furthermore, post hoc tests using the Bonferroni correction were conducted to compare column proportions within rows. The differing subscripts (a and b) signify that the percentages between the ranks in obtaining ICS 300 certification are significantly different. For instance, the percentage of Non-Supervisory officers who have not been certified in ICS 300 (59.2%b) is significantly higher than the percentage of Executive Level officers who haven't been certified (10.5%a).

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The following two tables present the same information, but now testing the relationships among several other variables.

Agencies with over 1500 members (>1500) were significantly more likely (93.0%, N=40) to have utilized predesignated locations within their jurisdiction for staging areas during major incidents compared to smaller-sized agencies. This is statistically significant, suggesting the agency size has an impact on this behavior, $\chi^2 = 10.044$, $p = .018$.

The largest agencies (>1500) were significantly more likely (95.3%, N=41) to have conducted trainings or held meetings with neighboring agencies to identify capabilities and deficiencies. This is at the edge of traditional significance levels, suggesting a possible association between agency size and this practice, $\chi^2 = 7.894$, $p = .048$.

There's a significant association between agency size and having their own standing intelligence unit. The largest agencies (>1500) overwhelmingly have such a unit, whereas the majority of the smallest agencies (<50) do not, $\chi^2 = 83.553$, $p < .001$.

There's a significant association between the size of an agency and whether their intelligence unit works solely from a remote location. As the agency size increases, the likelihood of the intelligence unit working remotely also increases, $\chi^2 = 19.243$, $p < .001$.

There's a significant association between agency size and the deployment of their intelligence unit to major incidents. Larger agencies are more likely to deploy their intelligence units to such events compared to smaller ones, $\chi^2 = 40.446$, $p < .001$.

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| | | 5) What is the approximate size of your agency? | | | | $\chi^2$ | p |
|---|---|---|---|---|---|---|---|
| | | < 50 | 50 - 500 | 501 - 1500 | > 1500 | | |
| | | Column N % | Column N % | Column N % | Column N % | | |
| 9) My agency has utilized predesignated locations within my jurisdiction for staging areas during a major incident. | No | 20.9%$_{a,b}$ | 32.1%$_{a}$ | 23.5%$_{a,b}$ | 7.0%$_{b}$ | 10.044 | .018* |
| | Yes | 79.1%$_{a,b}$ | 67.9%$_{a}$ | 76.5%$_{a,b}$ | 93.0%$_{b}$ | | |
| 10) My agency has conducted trainings or held meetings with neighboring agencies to identify each other's capabilities/deficiencies. | No | 23.8%$_{a,b}$ | 24.4%$_{a}$ | 17.6%$_{a,b}$ | 4.7%$_{b}$ | 7.894 | .048* |
| | Yes | 76.2%$_{a,b}$ | 75.6%$_{a}$ | 82.4%$_{a,b}$ | 95.3%$_{b}$ | | |
| 11) Self-deployment by members of my agency and/or nonmembers of my agency was observed during a major incident. | No | 33.3%$_{a}$ | 29.5%$_{a}$ | 17.6%$_{a}$ | 26.2%$_{a}$ | 1.612 | .657 |
| | Yes | 66.7%$_{a}$ | 70.5%$_{a}$ | 82.4%$_{a}$ | 73.8%$_{a}$ | | |
| 12) My agency has qualified members at the ready to be deployed to a Rescue Task Force (RTF) twenty-four hours a day seven days a week. | No | 41.9%$_{a}$ | 32.5%$_{a}$ | 35.3%$_{a}$ | 18.6%$_{a}$ | 5.582 | .134 |
| | Yes | 58.1%$_{a}$ | 67.5%$_{a}$ | 64.7%$_{a}$ | 81.4%$_{a}$ | | |
| 17) Interoperable Capabilities | No | 15.1%$_{a}$ | 12.2%$_{a}$ | 15.0%$_{a}$ | 6.8%$_{a}$ | 1.876 | .598 |
| | Yes | 84.9%$_{a}$ | 87.8%$_{a}$ | 85.0%$_{a}$ | 93.2%$_{a}$ | | |
| 23) My agency does not frequently provide its member with intelligence reports. | No | 65.2%$_{a}$ | 72.9%$_{a}$ | 70.0%$_{a}$ | 80.0%$_{a}$ | 2.804 | .423 |
| | Yes | 34.8%$_{a}$ | 27.1%$_{a}$ | 30.0%$_{a}$ | 20.0%$_{a}$ | | |
| 24) My agency has its own standing Intelligence Unit. | No | 90.9%$_{a}$ | 61.4%$_{b}$ | 25.0%$_{c}$ | 5.0%$_{c}$ | 83.553 | .000* |
| | Yes | 9.1%$_{a}$ | 38.6%$_{b}$ | 75.0%$_{c}$ | 95.0%$_{c}$ | | |
| 25) The intelligence unit within my agency works solely from a remote location. | No | 95.3%$_{a}$ | 80.3%$_{a,b}$ | 55.0%$_{b}$ | 72.5%$_{b,c}$ | 19.243 | .000* |
| | Yes | 4.7%$_{a}$ | 19.7%$_{a,b}$ | 45.0%$_{b}$ | 27.5%$_{b,c}$ | | |
| 26) The intelligence unit within my agency has been deployed to major incidents. | No | 88.9%$_{a}$ | 69.7%$_{b}$ | 63.2%$_{a,b,c}$ | 28.2%$_{c}$ | 40.446 | .000* |
| | Yes | 11.1%$_{a}$ | 30.3%$_{b}$ | 36.8%$_{a,b,c}$ | 71.8%$_{c}$ | | |
| 27) My agency relies on state/federal resources for intelligence gathering. | No | 26.2%$_{a}$ | 30.4%$_{a}$ | 30.0%$_{a}$ | 23.1%$_{a}$ | 0.803 | .849 |
| | Yes | 73.8%$_{a}$ | 69.6%$_{a}$ | 70.0%$_{a}$ | 76.9%$_{a}$ | | |

Note: Values in the same row and subtable not sharing the same subscript are significantly different at p< .05 in the two-sided test of equality for column proportions. Cells with no subscript are not included in the test. Tests assume equal variances.[1]

1. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

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In terms of geographic area, Urban agencies (57.5%) are significantly more likely to have an intelligence unit compared to rural (30.2%) and suburban (40.4%) agencies, $\chi^2 = 11.527$, $p = .003$.

Urban agencies have a higher percentage of intelligence units working remotely compared to rural and suburban agencies, $\chi^2 = 9.882$, $p = .007$.

Urban agencies are more likely to deploy their intelligence units to major incidents than rural agencies, with suburban agencies falling in between, $\chi^2 = 6.418$, $p = .040$.

Suburban agencies (39.2%) are less likely to rely on state/federal resources compared to rural (17.7%) and urban (26.7%) agencies, $\chi^2 = 6.538$, $p = .038$.

The other factors (e.g. conducted trainings or held meetings with neighboring agencies) do not show any relationship with geographic area, suggesting this factor does not play a significant role.

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| | | 6) What type of geographic area is under your agency's jurisdiction? | | | $\chi^2$ | p |
|---|---|---|---|---|---|---|
| | | Rural | Suburban | Urban | | |
| | | Column N % | Column N % | Column N % | | |
| 9) My agency has utilized predesignated locations within my jurisdiction for staging areas during a major incident. | No | 28.1%$_a$ | 27.1%$_a$ | 15.7%$_a$ | 3.834 | .147 |
| | Yes | 71.9%$_a$ | 72.9%$_a$ | 84.3%$_a$ | | |
| 10) My agency has conducted trainings or held meetings with neighboring agencies to identify each other's capabilities/deficiencies. | No | 26.3%$_a$ | 20.8%$_a$ | 13.4%$_a$ | 3.704 | .157 |
| | Yes | 73.7%$_a$ | 79.2%$_a$ | 86.6%$_a$ | | |
| 11) Self-deployment by members of my agency and/or nonmembers of my agency was observed during a major incident. | No | 21.1%$_a$ | 29.2%$_a$ | 33.3%$_a$ | 2.491 | .288 |
| | Yes | 78.9%$_a$ | 70.8%$_a$ | 66.7%$_a$ | | |
| 12) My agency has qualified members at the ready to be deployed to a Rescue Task Force (RTF) twenty-four hours a day seven days a week. | No | 29.8%$_a$ | 29.8%$_a$ | 31.3%$_a$ | 0.050 | .975 |
| | Yes | 70.2%$_a$ | 70.2%$_a$ | 68.7%$_a$ | | |
| 17) Interoperable Capabilities | No | 8.3%$_a$ | 13.1%$_a$ | 13.5%$_a$ | 1.213 | .545 |
| | Yes | 91.7%$_a$ | 86.9%$_a$ | 86.5%$_a$ | | |
| 23) My agency does not frequently provide its member with intelligence reports. | No | 65.1%$_a$ | 73.1%$_a$ | 75.9%$_a$ | 2.155 | .340 |
| | Yes | 34.9%$_a$ | 26.9%$_a$ | 24.1%$_a$ | | |
| 24) My agency has its own standing Intelligence Unit. | No | 69.8%$_a$ | 59.6%$_{a,b}$ | 42.5%$_b$ | 11.527 | .003* |
| | Yes | 30.2%$_a$ | 40.4%$_{a,b}$ | 57.5%$_b$ | | |
| 25) The intelligence unit within my agency works solely from a remote location. | No | 82.3%$_{a,b}$ | 93.9%$_a$ | 71.8%$_b$ | 9.882 | .007* |
| | Yes | 17.7%$_{a,b}$ | 6.1%$_a$ | 28.2%$_b$ | | |
| 26) The intelligence unit within my agency has been deployed to major incidents. | No | 77.4%$_a$ | 67.3%$_{a,b}$ | 57.3%$_b$ | 6.418 | .040* |
| | Yes | 22.6%$_a$ | 32.7%$_{a,b}$ | 42.7%$_b$ | | |
| 27) My agency relies on state/federal resources for intelligence gathering. | No | 17.7%$_a$ | 39.2%$_b$ | 26.7%$_{a,b}$ | 6.538 | .038* |
| | Yes | 82.3%$_a$ | 60.8%$_b$ | 73.3%$_{a,b}$ | | |

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