A food services manager for a baseball park wants to know if there is a relationship between gender (male or female) and the preferred condiment on a hot dog. The following table summarizes the results. Test the hypothesis with a significance level of 5%.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **ΦΥΛΟ \* ΚΑΡΥΚΕΥΜΑ Crosstabulation** | | | | | | |
|  | | | ΚΑΡΥΚΕΥΜΑ | | | Total |
| Ketchup | Mustard | mayonnaise |
| ΦΥΛΟ | Άνδρας | Count | 15 | 23 | 10 | 48 |
| Expected Count | 19,2 | 20,2 | 8,6 | 48,0 |
| % within ΦΥΛΟ | 31,3% | 47,9% | 20,8% | 100,0% |
| % within ΚΑΡΥΚΕΥΜΑ | 37,5% | 54,8% | 55,6% | 48,0% |
| % of Total | 15,0% | 23,0% | 10,0% | 48,0% |
| Γυναίκα | Count | 25 | 19 | 8 | 52 |
| Expected Count | 20,8 | 21,8 | 9,4 | 52,0 |
| % within ΦΥΛΟ | 48,1% | 36,5% | 15,4% | 100,0% |
| % within ΚΑΡΥΚΕΥΜΑ | 62,5% | 45,2% | 44,4% | 52,0% |
| % of Total | 25,0% | 19,0% | 8,0% | 52,0% |
| Total | | Count | 40 | 42 | 18 | 100 |
| Expected Count | 40,0 | 42,0 | 18,0 | 100,0 |
| % within ΦΥΛΟ | 40,0% | 42,0% | 18,0% | 100,0% |
| % within ΚΑΡΥΚΕΥΜΑ | 100,0% | 100,0% | 100,0% | 100,0% |
| % of Total | 40,0% | 42,0% | 18,0% | 100,0% |

|  |  |  |  |
| --- | --- | --- | --- |
| **Chi-Square Tests** | | | |
|  | Value | df | Asymptotic Significance (2-sided) |
| Pearson Chi-Square | 2,948a | 2 | ,229 |
| Likelihood Ratio | 2,971 | 2 | ,226 |
| Linear-by-Linear Association | 2,307 | 1 | ,129 |
| N of Valid Cases | 100 |  |  |
| a. 0 cells (0,0%) have expected count less than 5. The minimum expected count is 8,64. | | | |

1. Ποια τεχνική εφαρμόστηκε προκειμένου να ελεγχθεί η υπόθεση;
2. Πότε εφαρμόζεται η συγκεκριμένη τεχνική;
3. Ποιες είναι οι υποθέσεις;
4. Είναι αξιόπιστα τα αποτελέσματα;