At the 0.05 significance level, can we conclude that the image content distribution of Libai is different from Dufu in "Three Hundred Tang Poems"?

: The image distribution is the same of both poets.

: The distributions are different.

We select 25 samples poems of Libai from "Three Hundred Tang Poems":

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Proud & Ambitious | Sad & Melancholy | Noble & Loyalty | Parting Pain | Elegant & leisurely |
| Libai | 46 | 29 | 13 | 21 | 33 |

Total = 46 + 29 + 13 +21 + 33 = 142

And we select all Dufu’s poem from "Three Hundred Tang Poems":

We get the image content proportion distribution of Dufu.

Dufu:

Proud & Ambitious = 142 \* 30% = 42.6

Sad & Melancholy = 142 \* 29% = 41.18

Noble & Loyalty = 142 \* 10% = 14.2

Parting Pain = 142 \* 11% = 15.62

Elegant & leisurely = 142 \* 20% = 28.4

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Proud & Ambitious | Sad & Melancholy | Noble & Loyalty | Parting Pain | Elegant & leisurely |
| Libai | 46 | 29 | 13 | 21 | 33 |
| Dufu | 42.6 | 41.18 | 14.2 | 15.62 | 28.4 |

= ……+

≈ 0.2714 + 3.5491 + 0.1014 + 1.8530 + 0.7451

= 6.52

Therefore, according to the Chi-square table, α = 0.05, df = k–1 = 5–1 = 4, critical value = 9.48773.

In conclusion, = 6.52 < 9.48773, it cannot reject the null hypothesis, the sample shows no difference between the image content distribution of two poets.