|  |  |
| --- | --- |
| Table Comparison of AIC of ARIMA Models | |
| ARIMA Model | AIC |
| ARIMA(0,0,4)(0,1,1) | 4873.209 |
| ARIMA(0,0,3)(0,1,1) | 4871.259 |
| ARIMA(0,0,3)(1,1,1) | 4873.258 |
| ARIMA(1,0,3)(1,1,0) | 4866.440 |
| ARIMA(0,0,4)(1,1,0) | 4875.233 |

|  |  |
| --- | --- |
| **Regression Result** | |
|  | |
|  | *Dependent variable:* |
|  |  |
|  | log(number of passengers) |
|  | |
| Household deposable income | 3.3308\*\*\* |
| CPIH Deflator\* | -2.6118\*\*\* |
|  | |
| Observations | 38 |
| R2 | 0.9684 |
| Adjusted R2 | 0.9644 |
| Residual Std. Error | 0.09668 (df = 16) |
| F statistic | 244.8\*\*\*(df = 2;16) |
|  | |
| *Note:* | \*\*\*p<0.01  Consumer Price Index including owner occupiers' housing costs (CPIH) deflator and excluding council tax1 |

The general form of fixed effect regression model is:

where t indicates year. The τt is the intercept of year. is error term.

Stepwise Regression model is:

X1 is the average household deposable income variables. X2 is the Consumer Price Index variables. is 3.3308. is -2.6118.

Keeping X2 fixed, one percentage increase in X1 will result in a 3.3308 percentage increase in number of passengers for cruise. According to uk website[[1]](#footnote-1), the percentage increase in household income is 0.6% in 2019. Hence, we estimate there will be an 1.998% increase in number of passengers, keeping the effects from CPIH deflator fixed.

1. <https://www.statista.com/statistics/649906/real-household-disposable-income-yearly-change-forecast-united-kingdom/> [↑](#footnote-ref-1)