

THUNDER BAY INTERNATIONAL AIRPORT AUTHORITY BOARD OF DIRECTORS



*PRESIDENT & CEO, CHARLES CIRTWILL
RESEARCHER, CURTIS MCKNIGHT*

31 OCTOBER, 2017



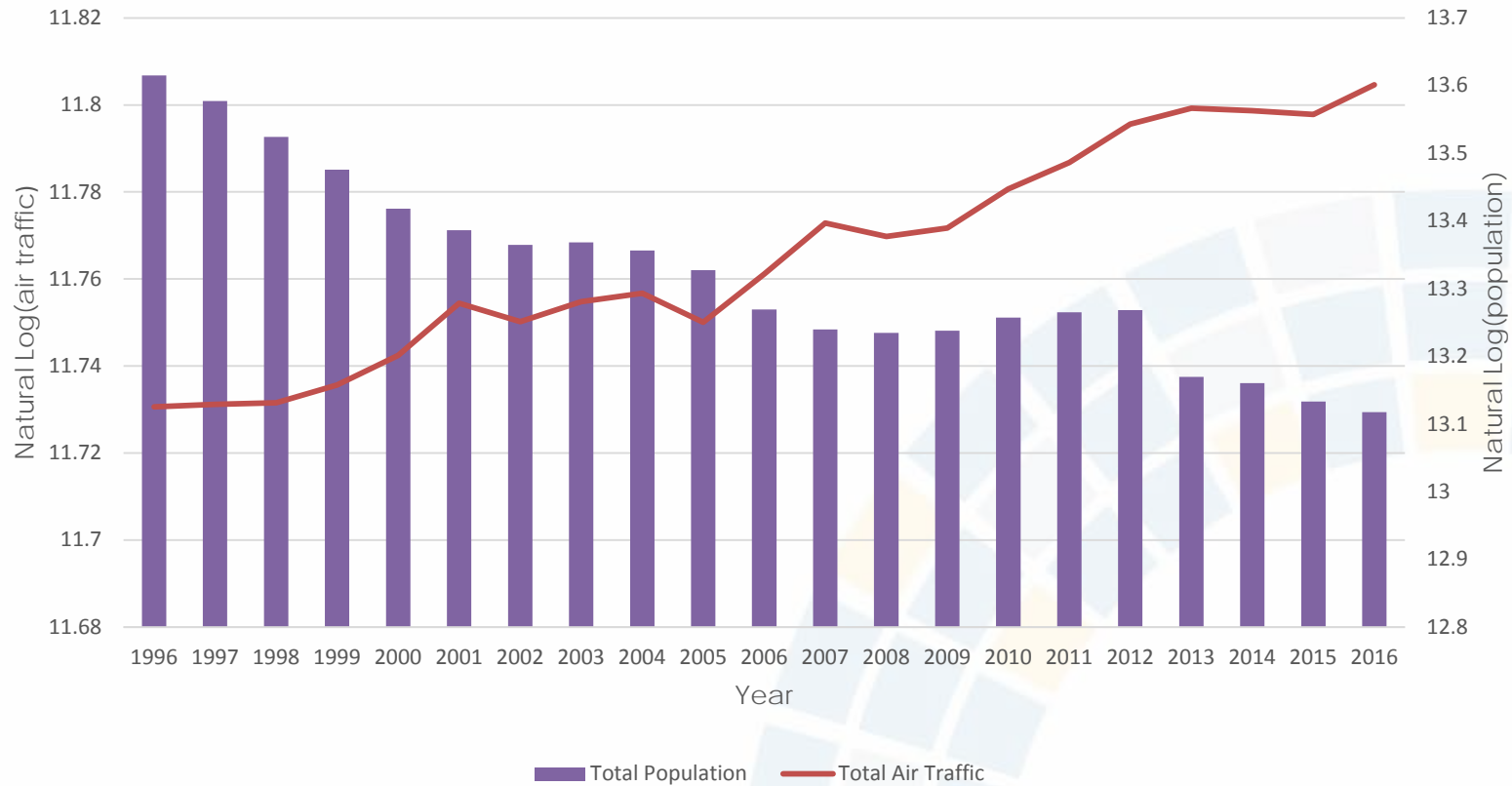
First - Definitions

- [Natural Logarithm](#)- A statistical transformation that allows very large numbers to be seen more easily on a graph. The trend lines and mathematical connections are unaffected by this scaling.
- [Elasticity of Demand](#)- The larger this number is, the stronger the apparent response is in one variable to a change in another. For example, -4 means that there is a large NEGATIVE correlation between population and air travel. Air travel is going up as population falls.
- [Correlation coefficient](#)- The closer this number is to 1 (positive or negative) the stronger the linkage between two variables are. For example, .01 is virtually no connection, .99 would be an almost perfect connection.
- [Statistical significance](#) – A relationship may be strong but it also must be statistically significant. 10% is considered the base threshold, 5% is very significant, 1% is even more so. All of the relationships found here were either significant or very significant, indicating the relationships shown can be relied on for analysis and direction.



A Disconnect

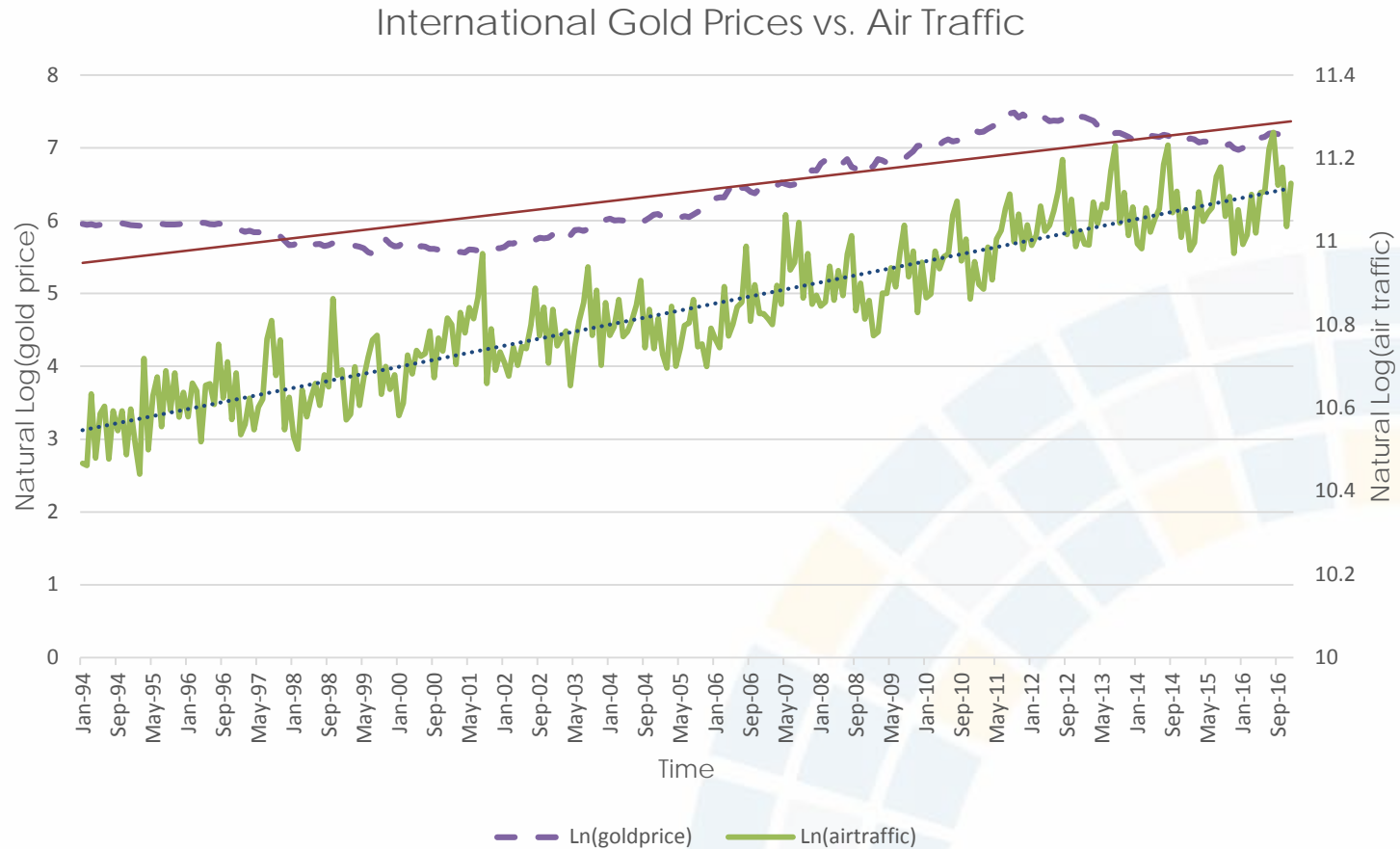
Thunder Bay Population vs. Air Traffic



OLS estimated coefficient= -4.361 (elasticity of demand)



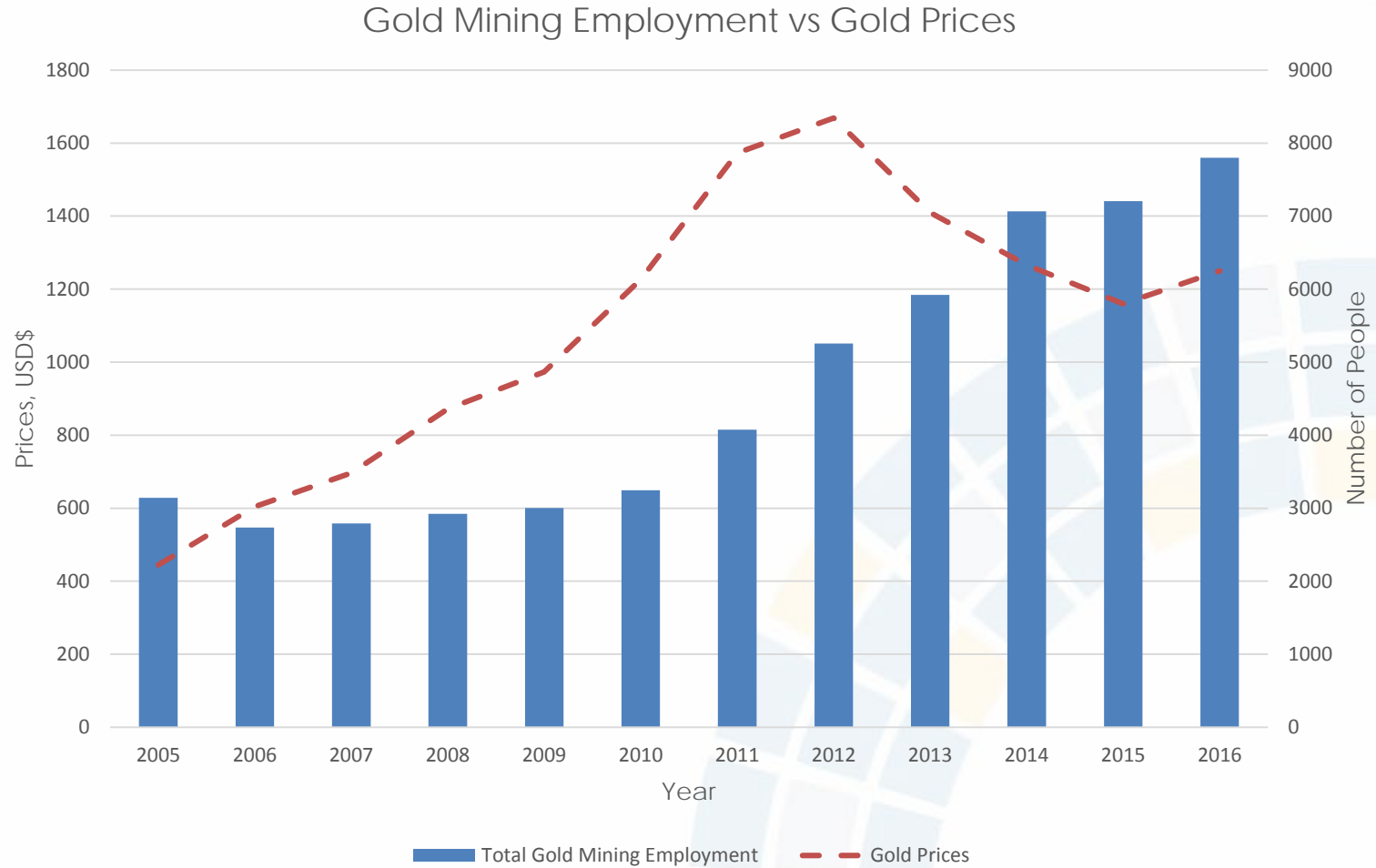
If population does not predict travel, what does?



OLS estimated coefficient= 0.114 (elasticity of demand)

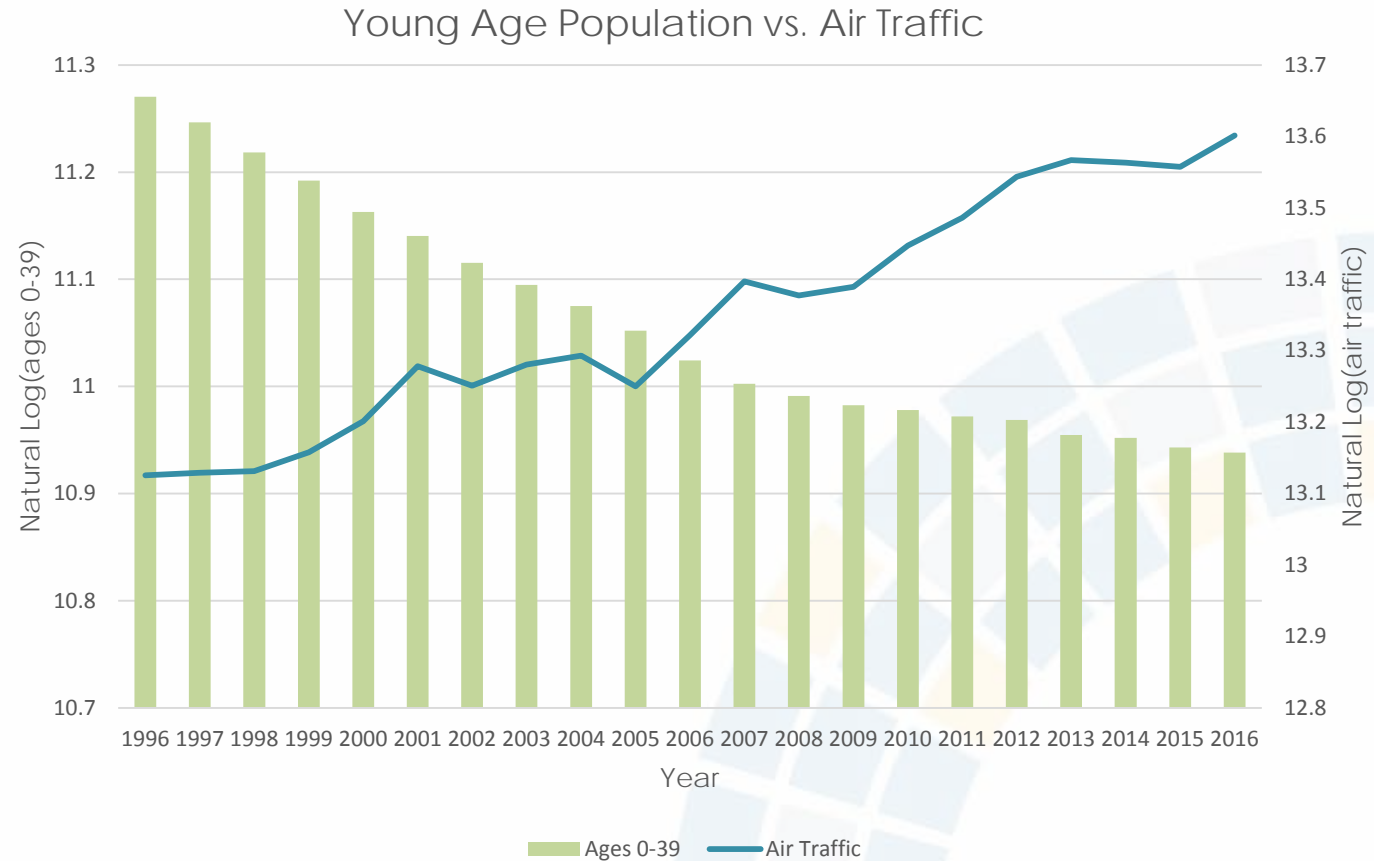


Makes Sense – Higher price = more workers





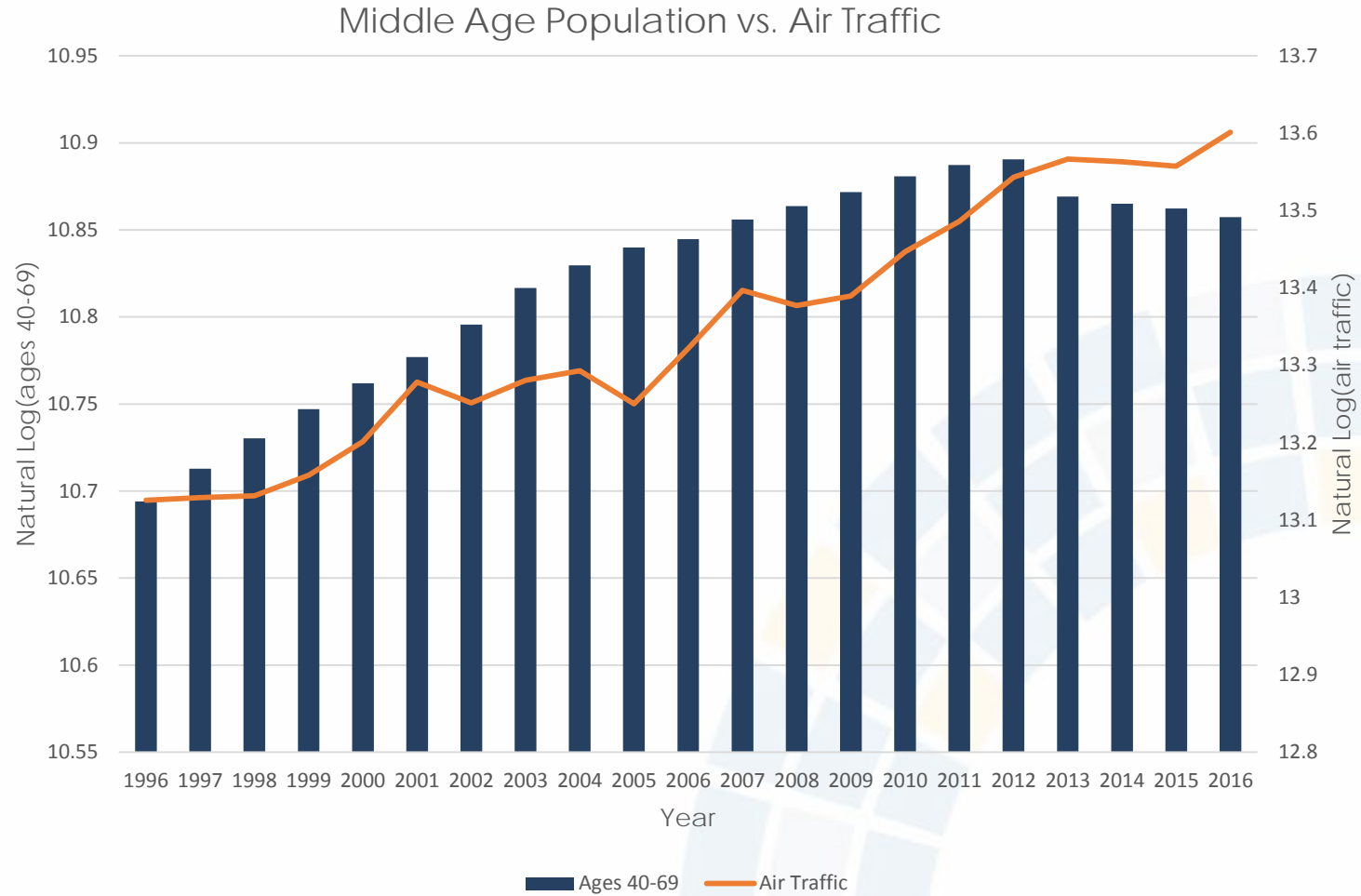
Another Disconnect



Correlation coefficient= -0.9378, significant at the one-percent level.



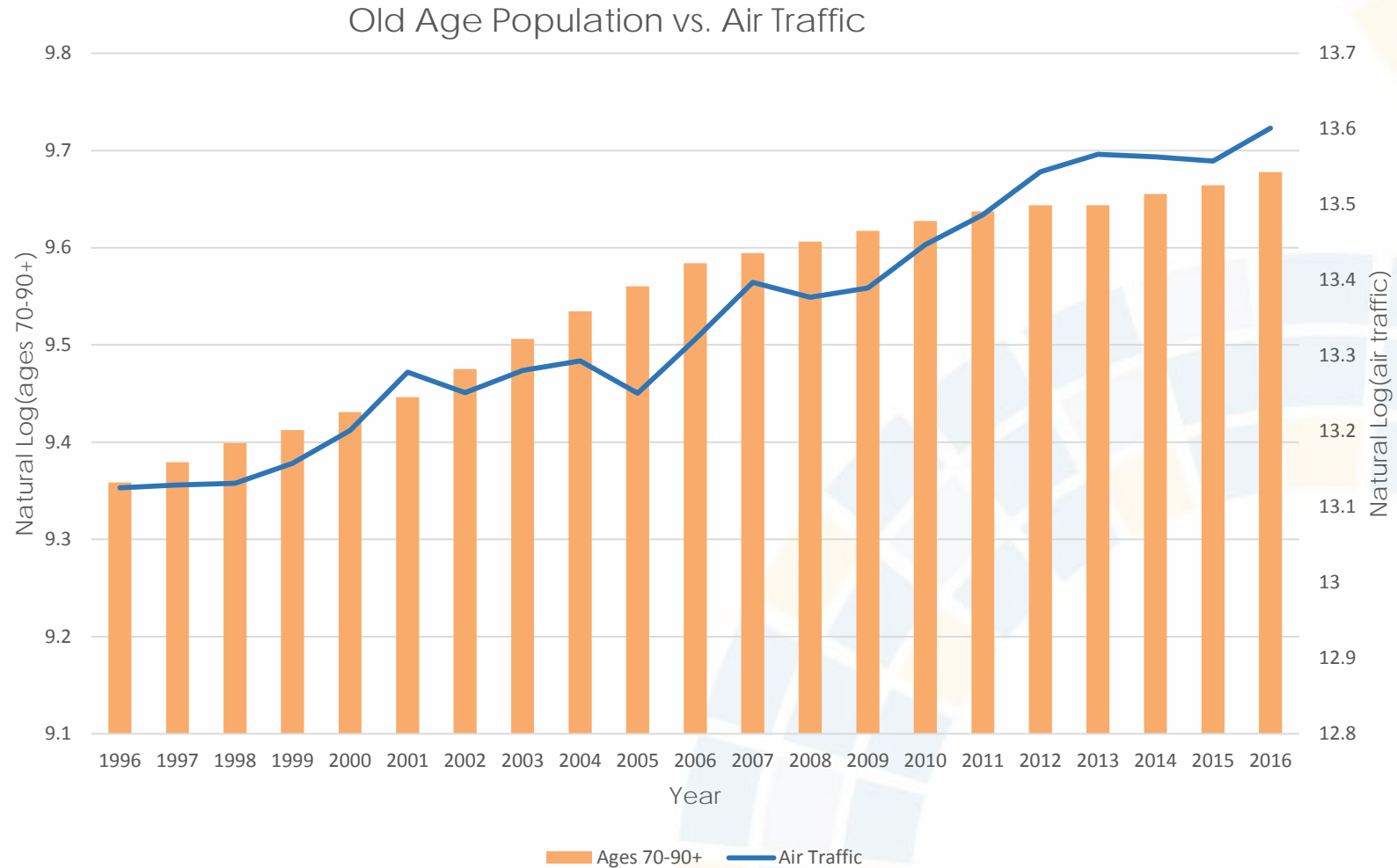
Maybe it is about ability to pay?



Correlation coefficient= 0.8687, significant at the one-percent level.



Or, availability of leisure time and having reasons to go



Correlation coefficient= 0.9430, significant at the one-percent level.



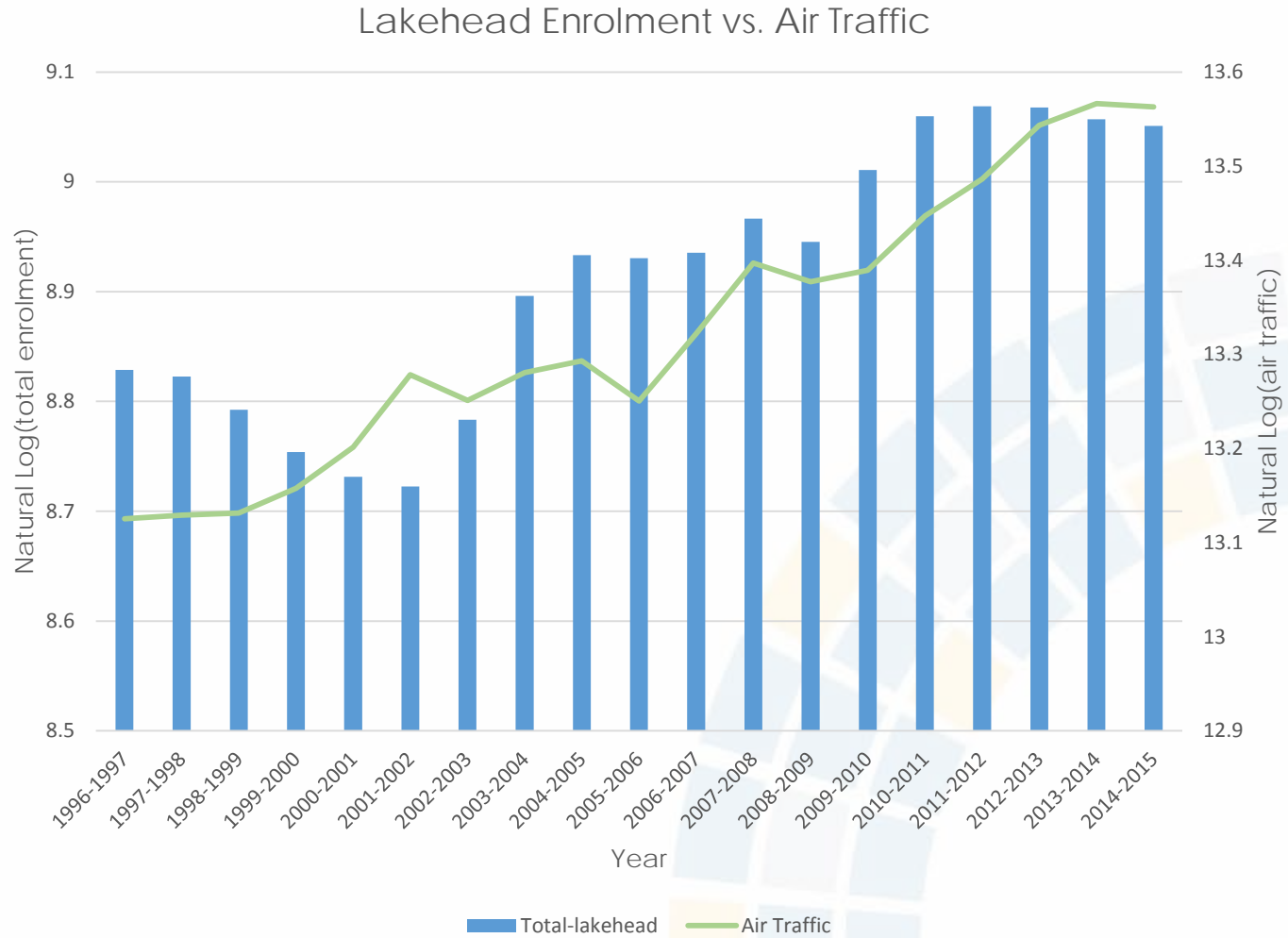
Having kids might not be good for travel, grandkids on the other hand...

| Age Group | OLS Estimated Coefficient | R-Squared |
|--------------|---------------------------|-----------|
| 0 to 9 | -0.9357495 | 0.8405 |
| 10 to 19 | -1.216682 | 0.9283 |
| 20 to 29 | 0.1025693 | 0.001 |
| 30 to 39 | -0.868882 | 0.8315 |
| 40 to 49 | -1.18399 | 0.7333 |
| 50 to 59 | 0.9429955 | 0.808 |
| 60 to 69 | 0.8676346 | 0.9038 |
| 70 to 79 | 4.133848 | 0.7247 |
| 80 to 89 | 0.6493861 | 0.7715 |
| 90 and above | 0.3920304 | 0.9395 |

All coefficients are significant at the point-one percent level, except for age category three.

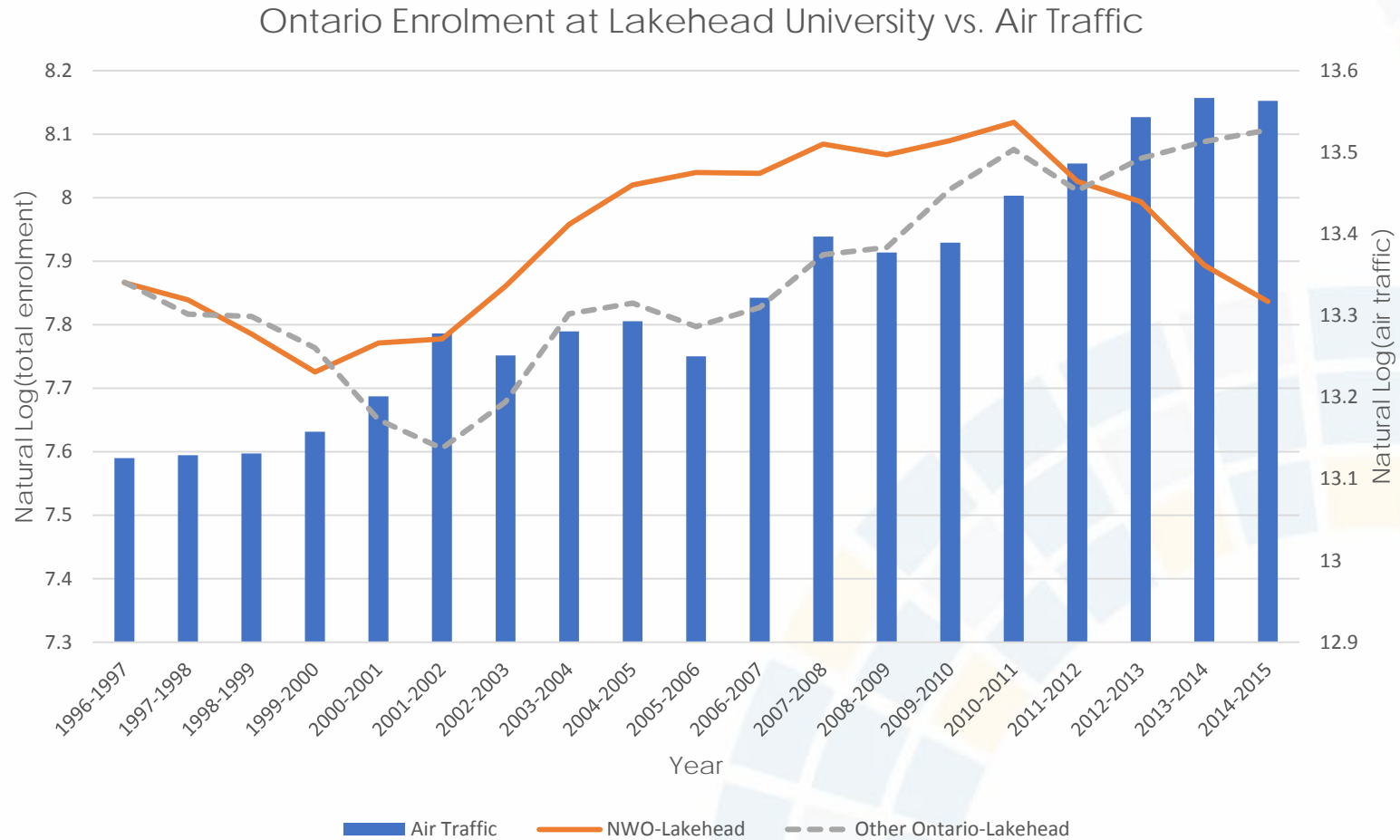


By the way, Post-secondary students drive air traffic too





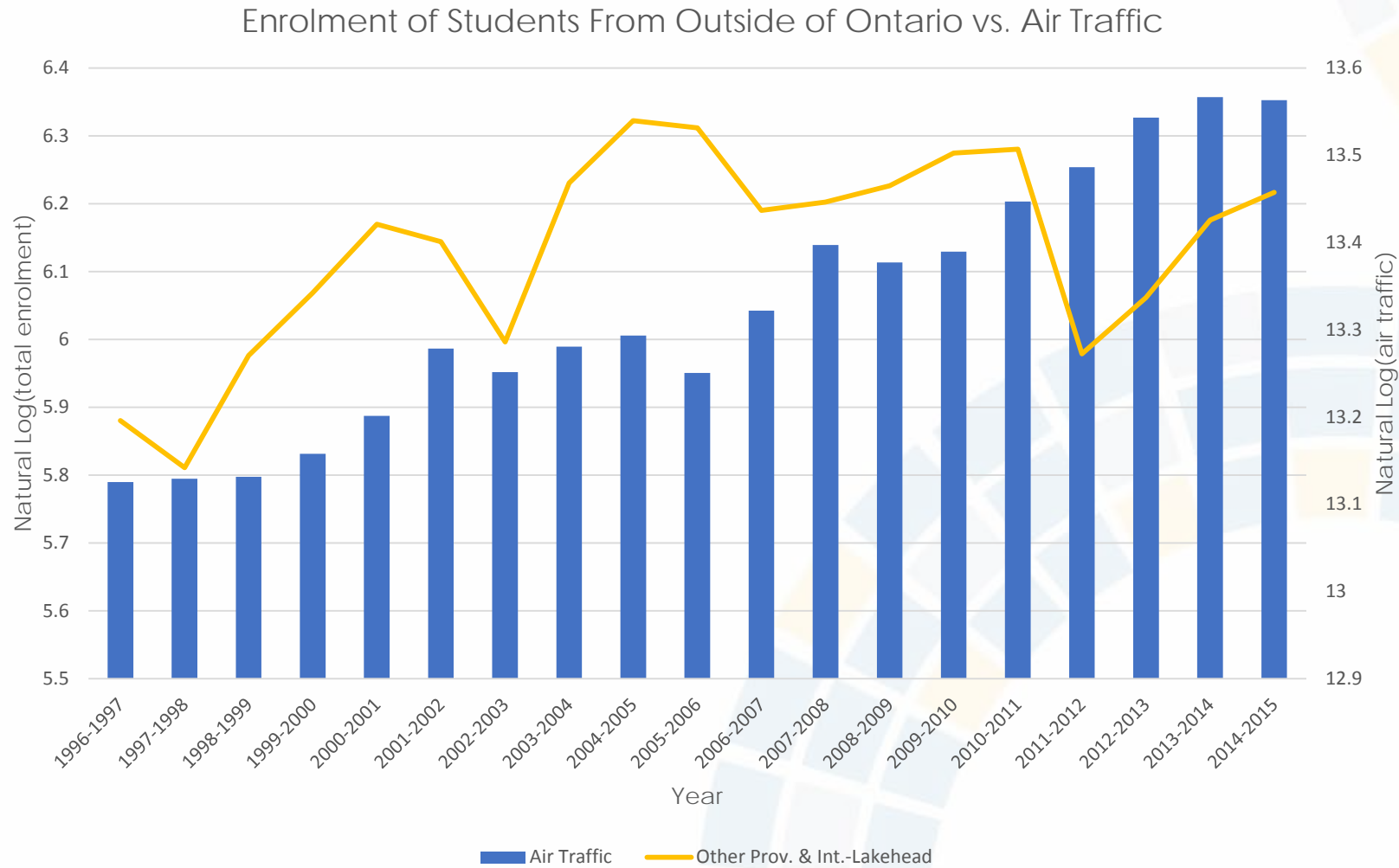
But not just ANY PSE Students



NWO correlation coefficient= 0.4824, significant at the five-percent level.
Other Ontario correlation coefficient= 0.7893, significant at the one-percent level.



And, not necessarily international or non-Ontario students

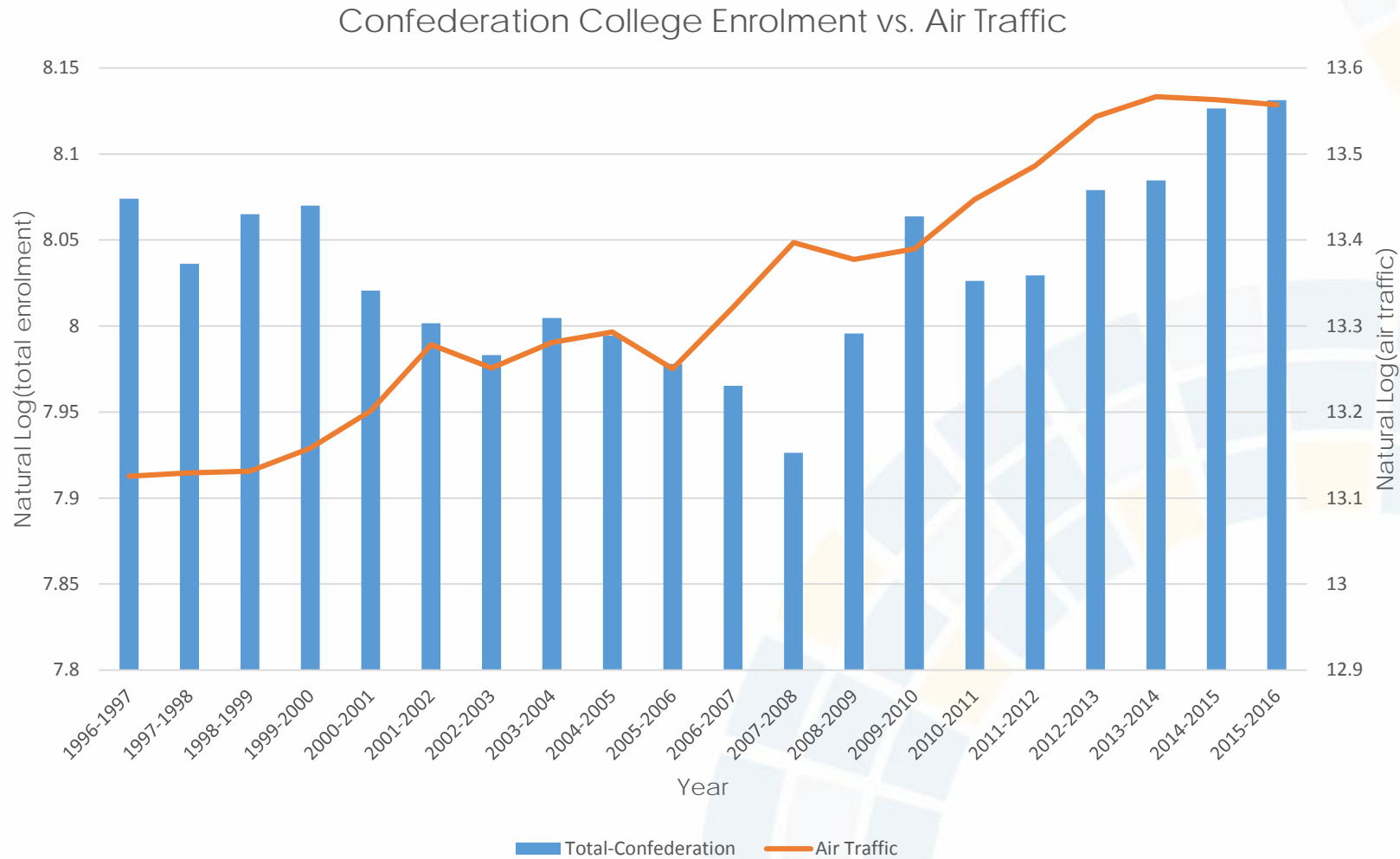


Correlation coefficient= 0.4163, significant at the ten-percent level.



PSE impact COULD include college too, but not yet...

(20-29 year olds don't appear to fly, and still not big non-region enrolment)



Correlation coefficient= 0.3276, not significant at the ten-percent level.

Thank You. Merci. Miigwech

QUESTIONS OR COMMENTS?

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