

Consumer Wealth as a Predictor of Plastic Surgery Volume

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Purpose: To estimate the relationship between consumer wealth and demand for common cosmetic and reconstructive plastic surgical procedures.

Methods: A retrospective analysis was performed comparing the five most common plastic surgery procedures across three categories (cosmetic surgical, cosmetic minimally invasive and reconstructive), with three potentially elective general surgery procedures (bariatric surgery, large and small bowel endoscopy). Annual time-series economic data were examined using regression and correlation analyses.^{1,2,3} Statistical significance of the regressions and parameter estimates were established at the 5% confidence level ($p=.05$) using t and F- tests. We also investigated income elasticity of demand for these procedures within the same time period.

Results: Three measures of consumer income/wealth are examined: the Nominal and Real house price indices and real disposable income. Depending on the time period and measure of income/wealth, cosmetic surgical procedures have an income elasticity of demand (IOD) ranging from 5.45 to -25.14; minimally invasive procedures' IODs ranged from 33.06 to -5.29; reconstructive procedures ranged from 10.58 to -15.88. Regression analysis revealed that the change in the demand for the Bariatric procedure is statistically significantly related to the change in the nominal house price index [$b = 4.32$ ($p=.027$), $R^2=0.29$] – a proxy for consumer wealth – thus implying a luxury good status. Conversely, small and large bowel endoscopy are statistically unrelated to changes in consumer wealth or income ($p=0.68$ and 0.85 , respectively).

Conclusions: Consumer wealth (i.e., the nominal house price index) is a better predictor of elective surgery demand than income. Income elasticity is extremely variable, depending on the time interval. We find the incongruous result that the same surgical procedure can be found to be either a luxury good (IOD>1) or an inferior good (IOD<0). Also, changes in nominal house prices are related to demand for specific surgical procedures and can perhaps aid in forecasting future demand.

References:

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