

Evolution in the Methods of Measuring Price Elasticity: An Illustrative Framework

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Abstract: Price elasticity of demand (E_d) quantifies the responsiveness of quantity demanded to price changes, assuming other factors remain constant. Traditional methods of calculating E_d , such as the percentage method and point method, often produce mathematically inconsistent results in the computation of marginal revenue (MR) and total revenue (TR) changes when analysed bidirectionally along the demand curve. This paper critically reviews exiting methods of calculating price elasticity of demand such as percentage method and point method with the help of illustrative explanation and highlights inconsistencies in them and to overcome these inconsistencies, the midpoint (arc elasticity) method is introduced, which employs the arithmetic mean of price and quantity between two points on the demand curve. Using geometric and algebraic analysis, the paper shows that this method ensures mathematically consistent and direction-independent calculation of E_d , MR and TR changes. The findings provide a more reliable framework for both theoretical modelling and applied economic analysis, enhancing the accuracy of revenue projections and pricing strategies.

Keywords: Price elasticity of demand

