**Monopoly, Oligopoly, Duopoly and Multi Product Quality**

**Abstract:**

This work investigates markets with vertical product differentiation, where qualities are represented by an interval.

Each firm has a convex production cost and can offer a multi-product strategy of quality-price pairs, and firms' profits are determined by the consumers' selection choice.

We show that under standard conditions on consumers' preferences:

1. In the case of a monopoly with a finite number of consumers - there will be market failure.
2. In the case of a monopoly with a continuum of consumers - when the market is fully served there will be no market failure.
3. In the case of an oligopoly with a finite number of consumers - in equilibrium, an endogenous monopoly will arise.
4. In the case of an oligopoly with a continuum of consumers - in equilibrium, an endogenous duopoly will arise.
5. In the case of a duopoly with a continuum of consumers - in equilibrium, each firm will offer an endogenous single pair.