Notizen zu den Statistischen Methoden II *

Contents

1 Grundlagen

Die Preiserhöhung eines Gutes hat zwei Effekte: Einen Einkommenseffekt und einen Substitutionseffekt.

$$
\begin{aligned}
\pi(p) &= D(p) \times p - D(p) \times c \\
\pi(p) &= 56p - 2p^2 - 224 + 8p \\
\text{Notw. Bed.} \quad \pi'(p) &= 56 - 4p + 8 \overset{!}{=} 0 \\
\iff 16 &= p
\end{aligned} \tag{1}
$$

Yes, a convex preference relation implies that the corresponding utility function is quasi-concave. Here's why:

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1. **Convex Preference Relation** A preference relation is convex if, for any two bundles x and y, and any $\lambda \in [0, 1]$, the following holds:

$$x \succeq y \quad \text{and} \quad y \succeq x \quad \Rightarrow \quad \lambda x + (1 - \lambda) y \succeq y.$$

This means that the consumer weakly prefers a convex combination of x and y to either x or y.

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2. **Quasi-Concave Utility Function** A utility function $u(x)$ is quasi-concave if, for any two bundles x and y, and any $\lambda \in [0, 1]$, the following holds:

$$u(\lambda x + (1 - \lambda) y) \geq \min(u(x), u(y)).$$

*Allgemeines, Beispiele, Nice to know

This means that the utility of the convex combination of x and y is at least as large as the smaller of the utilities of x and y.

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3. **Connection Between Convex Preferences and Quasi-Concave Utility** - If preferences are convex, then for any two bundles x and y with $u(x) \geq u(y)$, the convex combination $\lambda x + (1-\lambda)y$ is weakly preferred to y. This implies:

$$u(\lambda x + (1-\lambda)y) \geq u(y).$$

- Since $u(x) \geq u(y)$, this satisfies the definition of quasi-concavity:

$$u(\lambda x + (1-\lambda)y) \geq \min(u(x), u(y)).$$

2 Schätztheorie

Yes, a convex preference relation implies that the corresponding utility function is quasi-concave. Here's why: A preference relation is convex if, for any two bundles Yes, a convex preference relation implies that the corresponding utility function is quasi-concave. Here's why: A preference relation is convex if, for any two bundles

3 Testtheorie

4 Lineare Modelle