1 Strict Preference and Indifference

Weak preference relation $\succsim$

$$(2,1) \succsim (1,1)$$

$(2,1)$ is at least as good as $(1,1)$

$$(2,1) \succsim (1,1)$$

$$(1,1) \not\succsim (2,1)$$

We write:

$$(2,1) \succ (1,1)$$

$(2,1)$ is **strictly prefered to** $(1,1)$**.**

On the other hand, if we have:

$$(2,1) \succsim (1,2)$$

$$(1,2) \succsim (2,1)$$

Then we write:

$$(2,1) \sim (1,2)$$

The bundles are "indifferent".

1.1 Indifference Relation, Strict Preference Relation and Chain Notation

On the set $\{a, b, c, d\}$

$a \succsim a, b \succsim b, c \succsim c, d \succsim d$

$a \succsim b, a \succsim c, a \succsim d, b \succsim a, b \succsim c, b \succsim d, c \succsim d$

Turn the weak preference relation into the indifference relation.

Write every everything we can using the $\sim$.

The indifference relation is:

$$a \sim a, b \sim b, c \sim c, d \sim d, a \sim b$$

The strict preference relation is:

$$a \succ d, a \succ c, b \succ c, a \succ d, c \succ d$$

In chain notation:

$$a \sim b \succ c \succ d$$

2 Non-transitive relation

$a \succsim a, b \succsim b, c \succsim c, d \succsim d$

$a \succsim b, a \succsim d, b \succsim a, b \succsim c, b \succsim d, c \succsim d$

Find a counter-example that shows this is not a transitive relation.

$$a \succsim b, b \succsim c$$

However, it is not true that $a \succsim c$

3 Indifference Sets / Curves

How should we visualize the following preferences:

Finn likes any bowl of ice cream more if it has more total ice cream in it.

The **Indifference set** of a bundle is every bundle indifferent to it.

$$(2, 1) \sim (3, 0)$$

$$(2, 1) \sim (1, 2)$$

$$(2, 1) \sim (0, 3)$$

$$(2, 1) \sim (2.5, 0.5)$$

All of these bundles are part of the same indifference set.

The notation for the indifference set including the bundle $(2, 1)$ is

$$\sim (2, 1)$$

Indifference Curves are Indifference Sets. Set of bundles that are indifferent to eachother.

3.1 Marginal Rate of Substitution

The slope of an indifference curves tells us how much of the good on the vertical axis the consumer will give up to get one more unit of the good on the horizontal axis.

The slope of an indifference curve at a point is called the **marginal rate of substitution.**

How much x_2 you will give up to get one more x_1.

3.1.1 Perfect Complements

Only consume pies that consist of

2 **apples** (x_1)**.** 1 crust (x_2).

$(2, 1)$ produces 1 pie.

$(2, 2), (3, 1), (4, 1), (5, 1), (2, 5)$

3.2 Perfect Substitutes

Perfect Substitutes: When the indifference are straight lines then the consumer is always willing to give up a **fixed amount of** x_2 **to get one more** x_1**.**