

# How does Rational Addiction affect Consumption behaviour?

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## Abstract:

The purpose of this essay is to analyse the consumption behaviour of a consumer addicted to a harmful addictive substance in order to determine if rational addiction is a feasible concept and if utility can still be maximised despite the negative consequences the addiction may cause. This theory was explored by comparing the preference map and indifference curves of a consumer not addicted to alcohol to a consumer that is addicted to alcohol. It was found that an addict can still maximise their utility by rationally choosing to consume the addictive good only; however, it does not act in the accordance with the assumptions demonstrated in the standard well behaved preference map.

In today's modern society, harmful addictive substances are widely consumed, despite the numerous health warning campaigns launched by the government and the NHS. In contempt of these warnings, consumers rationally choose to continue to consume harmful addictive goods, regardless of the promised future health implications that may result. Throughout the average working day, people can be observed drinking alcohol and smoking cigarettes. Many observers dispute the legitimacy of the happiness and satisfaction that addicts claim they receive from their habit, since their addiction is essentially causing them health problems which may be painful and potentially life threatening. This phenomenon challenges the standard economic theory of consumption and utility. Therefore, the question arises of whether consuming harmful addictive goods is a rational choice, and if this consumption behaviour can maximise utility despite the potential personal and social consequences the addiction may cause (*Smith, 2007*). Can the oddity of addictive behaviour be explained in terms of preferences and utility? In order to answer these questions, we will discuss rational addiction, and explore the effect of addiction on a consumption preference map subject to a budget constraint, comparing it to that of a consumer without an addiction. In this essay we will examine alcohol as our addictive good since, despite its addictive trait, it is a widely consumed commodity.

When using economic consumer theory, we assume that consumers behave rationally when they aim to maximise utility (*Caulkins, 2012*). Some people may argue that addicts of harmful substances cannot maximise their utility, as their consumption behaviour results in various social and health issues, therefore it can be suggested that their choice to consume harmful addictive goods is not rational. However, it is considered that a rational choice is a product of "*a deliberate, conscious decision*" (*Smith, 2007*). With reference to this definition of rationality, it is argued that con-

sumers consciously choose to consume addictive substances. Becker develops this argument further by introducing the theory of adjacent complementarity (*Becker, 1988*). Adjacent complementarity is when “*past consumption of the good raises the marginal utility of present consumption*” (*Suranovic, 1999*). This is a fundamental element of rational addiction as it confirms that addicts have (or at least have done in the past) chosen to consume the addictive good with the motive of generating happiness and – simultaneously - utility (*Vuchinich, 2003*). Therefore the consumer is making a decision based on the belief that their choice will generate the maximum utility possible and is the best possible choice for them (*Becker, 1988*). Ultimately this suggests that rational addiction is a feasible concept, as it stems from a series of rational choices made by the consumer.

When discussing addictive goods, we must note that all consumers can consume addictive substances, but not all will become addicted (*Ferguson, B 2012*). This can be observed in terms of alcohol consumption. Many consumers choose to drink alcohol socially but do not become addicted to the substance, whilst other individuals may become dependent on the consumption of the good. Therefore, to create a comparison, we will initially consider the consumption behaviour of a consumer not addicted to the addictive good - in this example we will consider alcohol - using a standard economic well-behaved preference map (see *figure 1*) subject to a budget constraint ( $m$ ) and displaying possible indifference curves in order to illustrate the preferred consumption bundle of good X and good Y.

As we are regarding the preferences as well-behaved, the preference map satisfies the assumptions of completeness, convexity, reflectiveness, monotonicity and transitivity; all of which allow us to establish a preference ordering (*Chand, 2014*). *Figure 1* illustrates all of the consumer’s pos-

sible consumption bundles and their preference ordering in terms of the different indifference curves. When subject to a budget constraint, the maximum expenditure the consumer can afford on a combination of good X and good Y lies on  $I_2$ , determining that bundle Z is the most preferred affordable bundle. This shows that when the consumer is not addicted to alcohol, they are impartial to how much of each good to consume, so consuming the same quantity of crisps and alcohol achieves maximum utility.

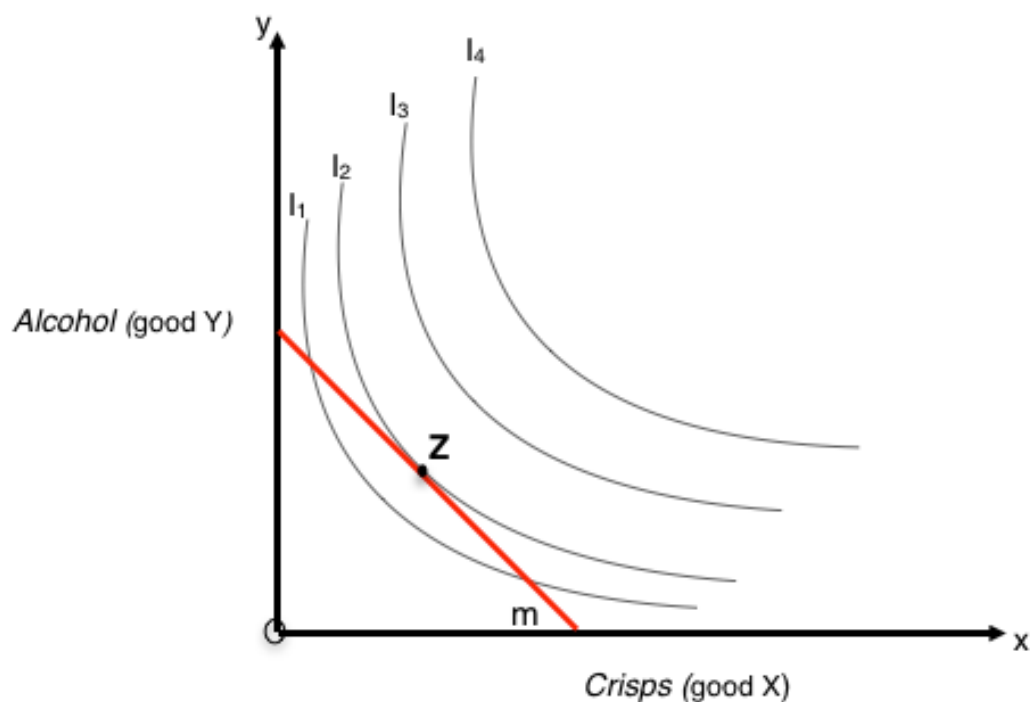


Figure 1: Preference map of consumer without an addiction to alcohol.

With the standard, well-behaved preference map in mind, economists continue to look into ways in which the model can be challenged. It has already been established that addicts are considered as rational consumers, regardless of their perceived unconventional behaviour. In this case, many

economists, led by the studies of Becker, have researched the consequences that addiction may have on a consumer's preference ordering and utility when subject to a budget constraint. In Becker's research, in order to establish his theory, he assumes that the function is strongly concave (Becker, 1988), which violates the standard assumption of convexity in preference maps mentioned earlier, indicating that preferences are not well behaved when addiction is concerned. In this case, we will use the "corner solution" (Hirshleifer, 2005) to explain the concave condition that addiction creates. In Figure 2, we now analyse the consumption behaviour of a consumer that experiences an addiction to alcohol. When adopting a corner solution, the consumer would use their entire available income to purchase one of the goods, resulting in consuming zero units of the other (Hirshleifer, 2005). This radical change in consumption behaviour has been particularly observed in heroin addicts. Heroin addicts will often allocate their budget to feed their habit, rather than to purchase vital food, resulting in health issues such as malnutrition (Web Appendix A, 2012). In a standard, well-behaved preference map, this "all or nothing" choice is very unusual; however, when applied to an addicted consumer, it is a logical result (Hirshleifer, 2005).

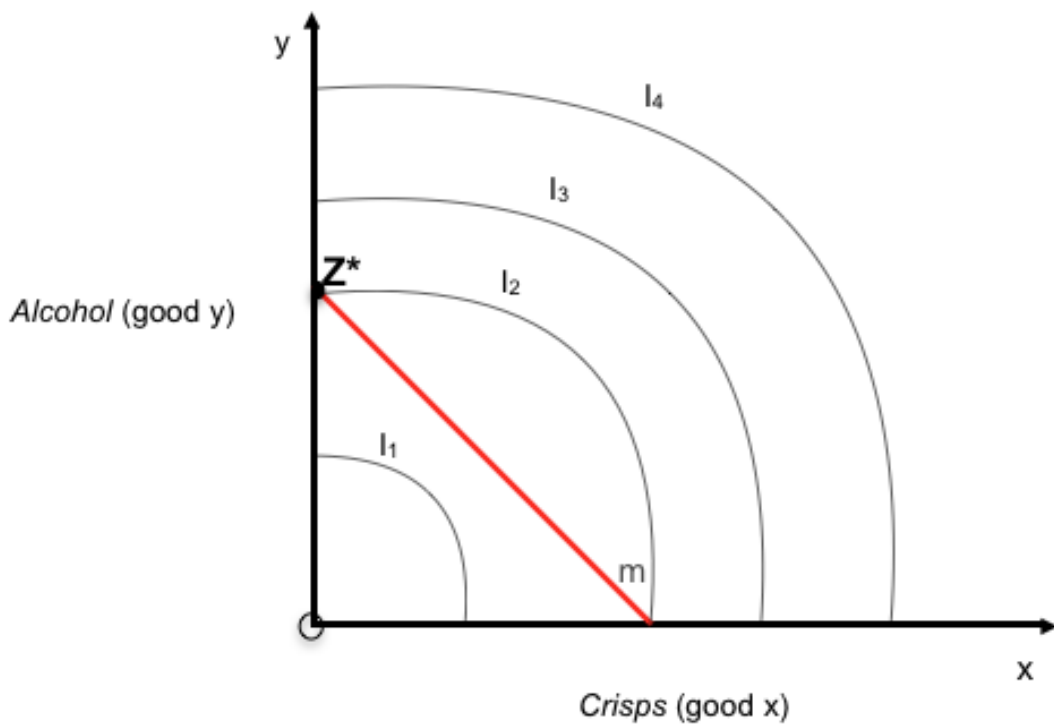


Figure 2: Preference map of a consumer with an addiction to alcohol

In *Figure 2*, we illustrate the situation of concave indifference curves subject to the same budget constraint present in *Figure 1* of a consumer with an addiction to alcohol. Using the corner solution, the most preferred affordable consumption bundle  $Z^*$  is located on the  $y$ - axis, illustrating that spending all available income on good  $X$  (alcohol) generates the maximum utility for the addicted consumer. Therefore this shows that rational addiction fundamentally alters an individual's consumption behaviour, but in a manner in which maximum utility is still achieved.

Throughout life we, as rational consumers, are faced with choices which we make by regarding any available relevant information in order to maximise our utility. Addicts are aware of the health risks associated with consuming the harmful addictive good, and still choose to consume the sub-

stance because - for them - that is what will maximise their utility. Therefore, this essay argues that addiction can achieve maximum utility despite the implicated health hazards; however, the preference map resembles differently shaped indifference curves when compared to the standard well-behaved preference model. To further analyse this theory, different degrees of addiction could be explored, ranging from hard-core addiction to a less inclined, occasional user of the addictive substance. For the purpose of this essay, only harmful addictive goods were examined; however non-harmful addictions could also be further explored such as addictions to work, exercising and - as it becomes increasingly more evident in today's modern society - technology. Therefore, rational addiction can radically alter an individual's consumption behaviour, while still achieving the rational consumer's aim of maximising utility whilst not strictly adhering to the standard economic consumer theory regarding consumption and utility.

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