

A4_18 Your Guests Are Thirsty

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Abstract

In *RollerCoaster Tycoon 2* it is possible to build stalls and set the prices for drinks and other consumables. This paper runs a simulation in one scenario to set multiple prices for drinks and then examine what the effect that this has on profits is over a four month period. It is found that the optimum price for drinks lies between £2.10 and £2.40.

Introduction

In *RollerCoaster Tycoon 2*, stalls can be built to furnish guests to your park with drinks, food and souvenirs [1]. Guests get both hungry and thirsty; however, this does not mean they will buy a drink if it is too expensive! This paper aims to examine the price that will maximise profits instead of proving too expensive for the guests.

Simulating the Problem

In this paper, a simulation is set up using a scenario called Barony Bridge (originally written for the first game) with a drinks stall being built in a specific place. This simulation is run multiple times from this identical saved state, starting on 1st April, Year 4 and being ended after a four month period in each case. Different prices p are set at the beginning of the period, at which the in-game 'Total Profit' value is £0.00. At the end of the period, the 'Total Profit' is read from the game and recorded.

The simulation is reset and re-run after every datum is recorded in order to minimise the variation of other factors. Each scenario is allowed to play out as the game sees fit with no human interference other than starting and stopping the simulation at the points mentioned above. The variables are kept as constant as possible, with the location of the stall being held constant between simulations and the simulation being run over periods of four months to attempt to eliminate the effect of weather and guest flow variations.

p	P	p	P
0.50	63.40	2.10	715.00
1.00	290.90	2.20	723.80
1.50	494.80	2.30	721.20
2.00	668.80	2.40	712.30
2.50	679.20		
3.00	517.90		
3.50	445.60		

Table 1: Total profits P compared to price of a drink p .

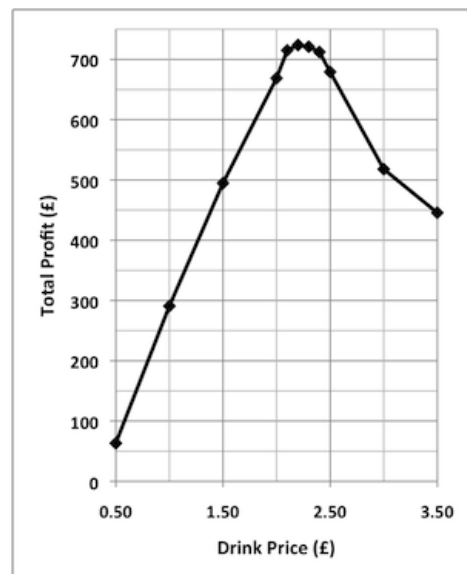


Fig. 1: Graph to show the price of a drink in pounds plotted against the total profit after four months in pounds.

Conclusion

The data obtained from running the model at various drink prices p are shown in Table 1 and Fig. 1. As can clearly be seen, there is a peak between $p = £2.00$ and $p = £2.50$ in the data. It can clearly be seen that in order to maximise profits, the value of a drink should be set between £2.10 and £2.40, as this is the range at which the highest profits may be achieved. The value that achieved the highest total profit recorded in this study was at £2.20, but due to the random fluctuations of guest flow through the park in the game, minor fluctuations may also occur in total profit at various price points - this hypothesis is left for further investigation.

REFERENCES

- [1] *RollerCoaster Tycoon 2* (Infogrames, 2002).