Legend

Variable Cost	Approximated Amount ($)	
Cashier*	100	per day
Service Crew *	80	per day
Electricity Cost*	50	per day
Rejected Customer cost ^	12.80	per customer
Cost for an extra table	1000	
Cost price for food	5	per customer
Cost price for drinks	3	per customer
Variable Revenue	**Revenue ($)**	**Profit ($)**
Customers - Food	15	10
Customers – Food + Drinks	25	17
Time		
10 sec in simulation time	simulates	1 day in real time
5 mins (300 secs) in sim time	simulates	1 month in real time

Note: ^Rejected Customer cost denotes the estimated opportunity cost for each rejected customer (with a weightage of 40% of the customers orders food with drinks)

*Variable cost are obtained using the monthly wages and utility bill of restaurant

Profit Analysis

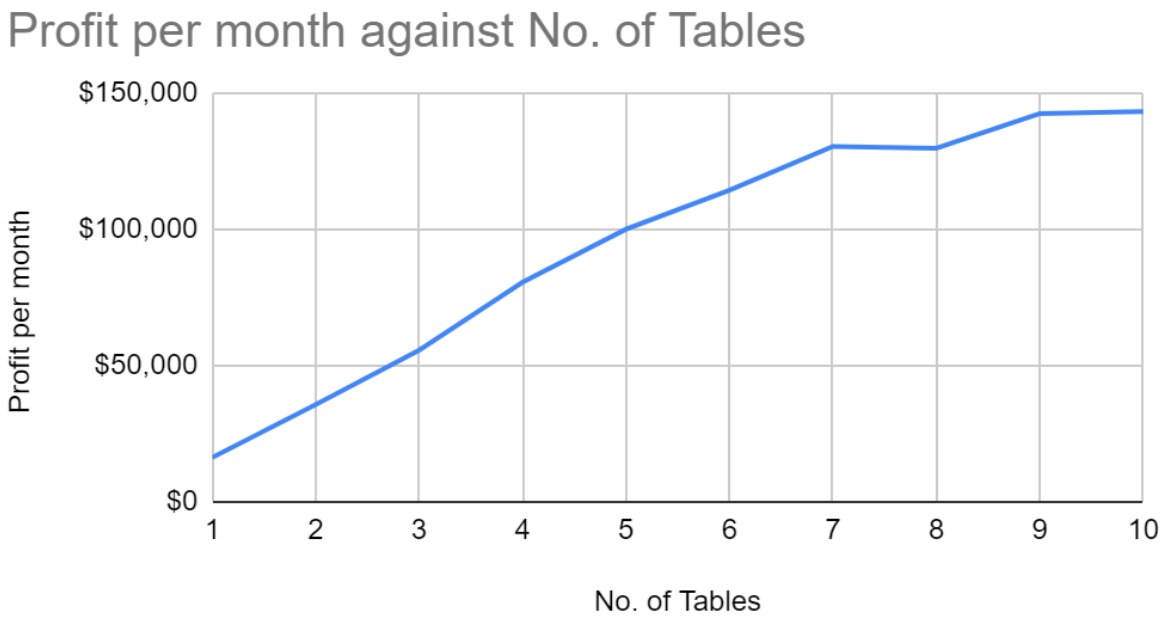
No. of Tables	Average No. of Customers	no of NoDrink customers	no of Drink customers	Revenue per month	Revenue per day
1	1875	1125	750	$24,000	$800
2	3658	2194.8	1463.2	$46,822	$1,561
3	5487	3292.2	2194.8	$70,234	$2,341
4	7709	4625.4	3083.6	$98,675	$3,289
5	9499	5699.4	3799.6	$121,587	$4,053
6	10881	6528.6	4352.4	$139,277	$4,643
7	12404	7442.4	4961.6	$158,771	$5,292
8	12619	7571.4	5047.6	$161,523	$5,384
9	13880	8328	5552	$177,664	$5,922
10	14202	8521.2	5680.8	$181,786	$6,060

No. of Tables	Rejection rate	Opportunity Cost for one month	Cost per month	Cost per day
1	0.7658	78476.52	$7,900	$230
2	0.5665	61187.75	$11,300	$310
3	0.3854	44041.70	$14,700	$390
4	0.2362	30514.64	$18,100	$470
5	0.1304	18232.49	$21,500	$550
6	0.0692	10354.48	$24,900	$630
7	0.0262	4271.72	$28,300	$710
8	0.0072	1171.40	$31,700	$790
9	0.0016	284.72	$35,100	$870
10	0.0001	18.18	$38,500	$950

Note: Opportunity cost = $12.80 x (No. of rejected customer)

$$\text{No. of rejected customers} = \text{Average no. of customers x } \frac{\text{Rejection Rate}}{1-\text{Rejection Rate}}$$

Graph



Note: Profit is derived using (Revenue per month – Cost per month)

Conclusion

- Judging from the graph, profits increases almost linearly from 1 table to 7 tables
- Marginal profits decrease to a near plateau state at 10 tables
- Opportunity Cost is almost minimised at having 10 tables (due to near zero rejection rate)
- Since our upper limit for the simulation run is 10 tables due to the space constraint in the restaurant, the restaurant is currently operating at max capacity (unless there is room for expansion)
- Thus, our recommendation is that Crooked Cooks to implement 10 tables within their restaurant for optimal revenue