Modeling dating apps

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Simple scenario: simulation 1

Disclaimer: works only for male-female pairs !!!

- 500 male, 500 female users
- every user sees 100 other users per day
- every user likes around ¼ users
- male and female users have similar behaviour!

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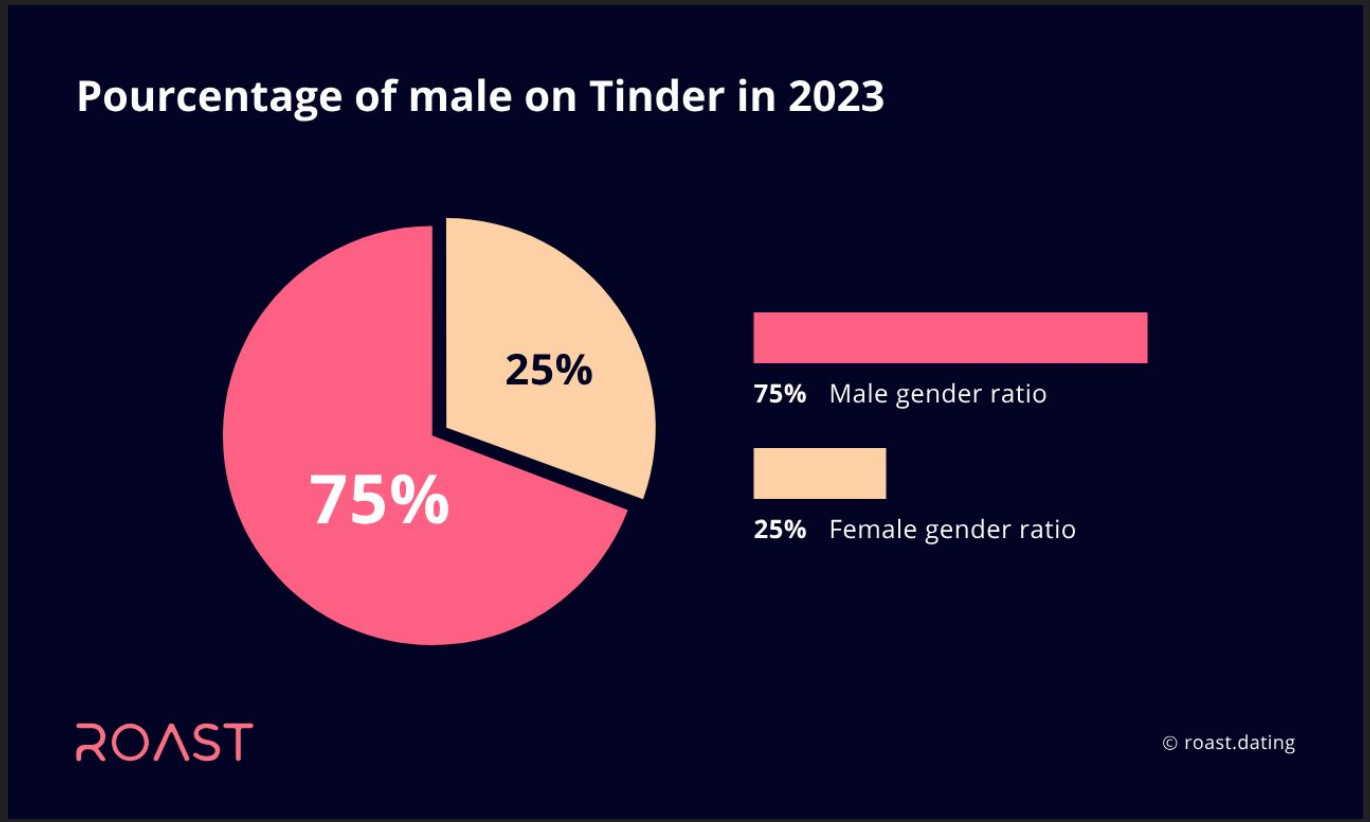
Gender	Likes	Matches
Female	25	6.25
Male	25	6.25

More real-world data



Simulation 2

- 667 male, 333 female users
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Gender	Likes	Matches
Female	50	6.25
Male	12.5	3.125

How to increase a chance to get a match?

More likes - more chances :D

Simulation 3

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- female users like 14% of male users

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Gender	Likes	Matches
Female	92.1	6.4
Male	6.4	3.2

How do we model attractiveness?

Real-world data:

- 25% of females get 50% of the likes
- 15% of males get 50% of the likes

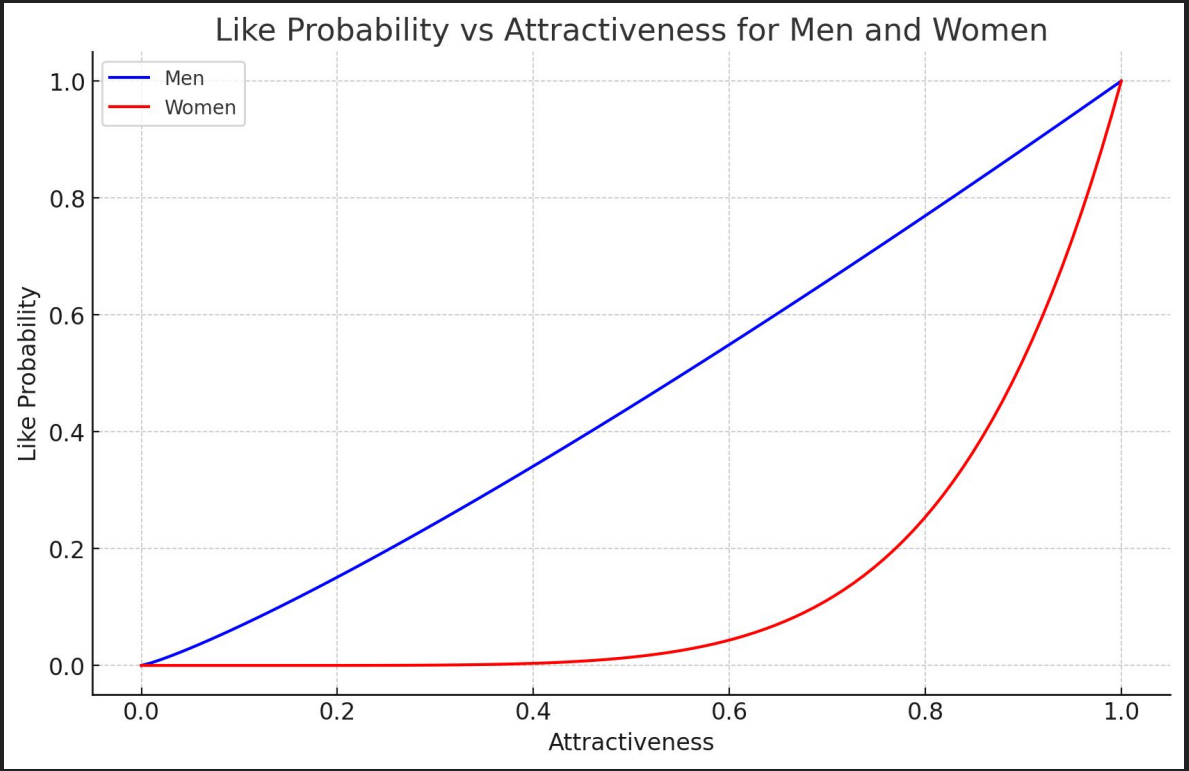
The like-disbalance based on attractiveness is “exponential”

Let’s assign a “attractiveness” score between 0 and 1 to each user

The final formula will be the following:

$$like\_prob = attractiveness^{(1/like\_percentage - 1)}$$

Like probability formula



Simulation 4

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- most attractive users get exponentially more likes

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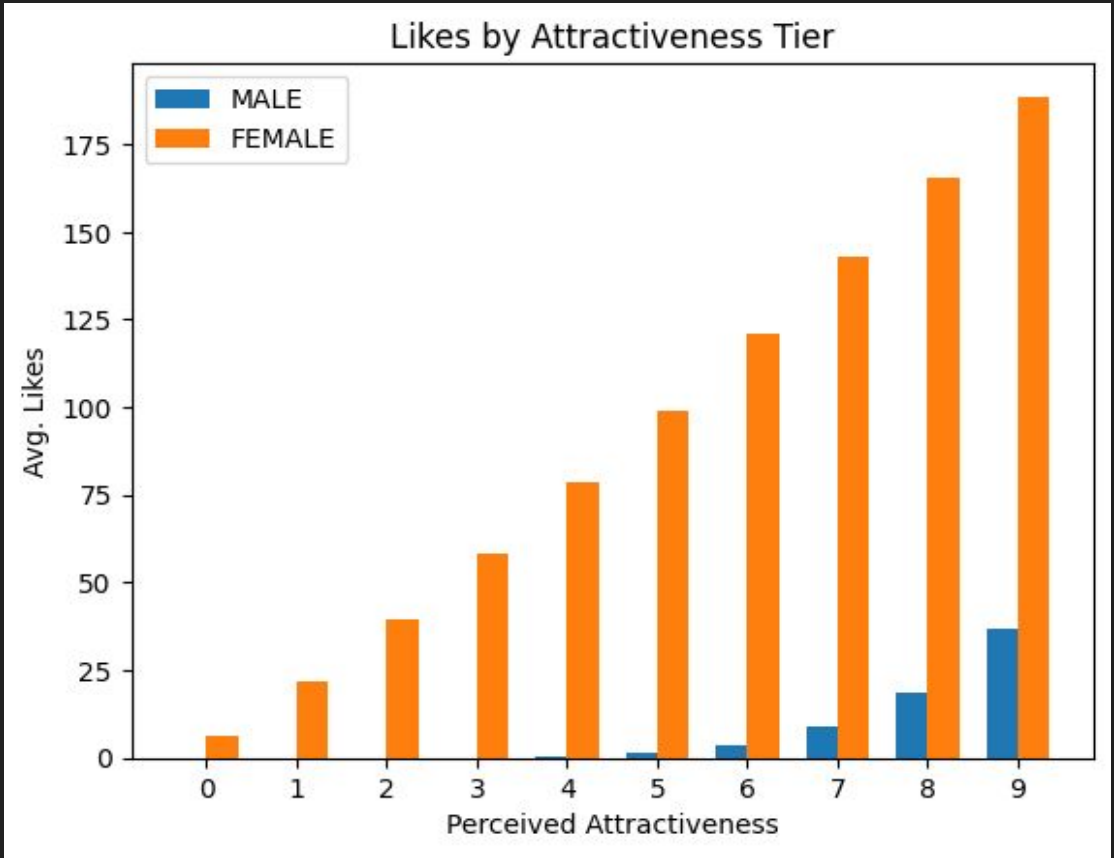
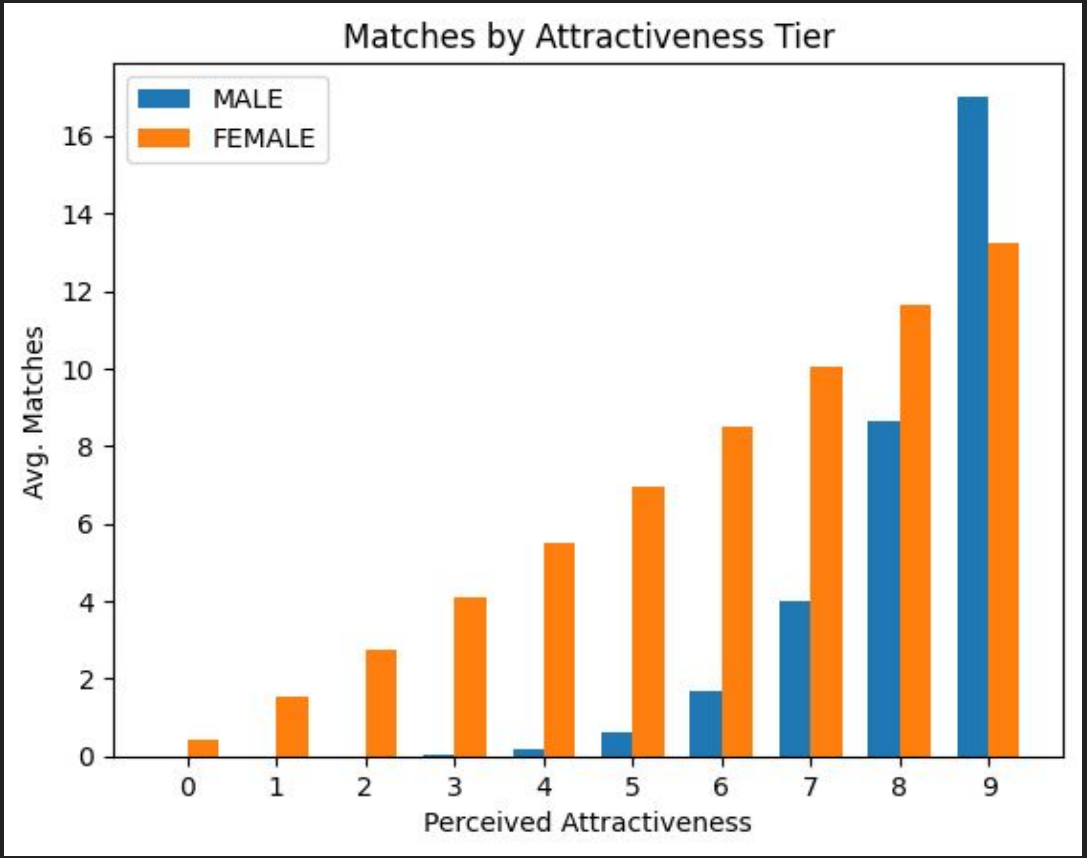
- most attractive users get exponentially more likes

Gender	Likes (average)	Likes (median)	Matches (average)	Matches (median)
Female	92.1	89	6.4	6
Male	6.4	1	3.2	0

Likes by attractiveness tier



Matches by attractiveness tier



Final results

While adding more and more realism into this model, the amount of likes of average male user progresses this way: 25 -> 12 -> 6 -> 1

And here we don’t include the factors such as specific algorithms, subscriptions, fake accounts, and other factors