Counter claim:
Mathematical models are simplifications and can't fully represent reality.

Evidence:
* The model assumes all riders share equally which may not be true.
* It ignores real world variables (traffic, weather, human behavior)
* if assumptions change, the model becomes inaccurate

ToK link:
Knowledge depends on assumptions and context, math is interpreted by humans.

Claim:
Mathematical models provide reliable and objective knowledge about the world.

Evidence:
* Rational function gives precise numerical predictions.
* Business successfully use such models for pricing and planning.
* math is based on logic and proof making it consistent across cultures.

TOK link:
Math reduces bias and emotion, making knowledge more objective.

A rider sharing company models the average cost per rider using a rational function

$$C(x) = \frac{300 + 15x}{x}$$

Where   C(x) = average cost per ride
x = Number of riders sharing the trip
300 = Fixed cost (fuel + Base fee)
15x = Variable cost per rider.

ToK Reflection
Who decides whether a model is valid?
Model validity is usually decided by community of knowers (mathematicians, economist...etc) using criteria such as logical consistency, predictive accuracy, claim with evidence.

Tok link: Knowledge validation is a social process influenced by expertise, evidence and context.

Conclusion: Mathematical models can be reliable because they use logical structures and data to make consistent predictions about real situations. However, they are based on assumptions and simplifications, so they can't capture all real world complexity. Therefore they are reliable to useful but limited extent, depending on context and how well their assumptions match reality.