Reputation Mechanisms

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Activity #1: What car should I buy?
What car should I buy?

Experts

www.edmunds.com

www.consumerreports.com

Economy Car: 1997-2001 Honda Civic

For years, it's been the Civic and Toyota's Corolla fighting for the title of best economy car. Both are wise choices from a strictly utilitarian point of view; they're frugal with fuel, require minimal maintenance and are reliable. That said, the Civic gets our vote because it offers a few things that the Corolla line lacks: a sportier driving feel, a coupe body style in addition to a sedan and, in 1999 and 2000, an Si version of the coupe that boasts a zesty 160-horsepower inline four and a taut handling biased suspension.

Find Honda Listings


Midsize Car: 1997-2001 Toyota Camry

Fine build quality, legendary reliability and aushed ride characterize the Camry. Though the arch rival Honda Accord may offer a more sporting drive, we picked the Camry based on its more serene cabin and compliant ride, qualities that are typically more appreciated in a family midsize car than apex-shattering proficiency. Furthermore, the Camry was redesigned in 1997 and this generation lasted through the 2001 model year, meaning all of these years are equally strong picks.

RELIABILITY RISKS

These cars have shown several years of much-worse-than-average overall reliability. AWD stands for all-wheel drive; 4WD, for four-wheel drive. Listed alphabetically.

Acura Integra
Acura RL
Acura TL
Ford Escort
Ford Expedition
Ford Focus
Honda Accord
Honda Civic
Honda CR-V
Honda Odyssey
Infiniti Q45
Infiniti QX4
Isuzu Oasis
Lexus ES300
Lexus GS300/400, GS430
Lexus LS400, LS430
Lexus RX300
Mazda 626
Mazda Miata
Mazda Millenia
Mitsubishi Galant
Nissan Altima
Nissan Maxima
Nissan Pathfinder
Oldsmobile Aurora
Oldsmobile Bravada
Oldsmobile Cutlass
Plymouth Grand Voyager
Plymouth Neon
Porsche 911
Saab 9-5
Saab 9-6
Toyota Camry
Toyota Celica
Toyota Corolla
Toyota Crown
Toyota Land Cruiser
Toyota Tundra
Volkswagen Jetta
Volvo"
### What car should I buy?

Visit [www.epinions.com](http://www.epinions.com) for expert reviews, consumer aggregates, and friends' experiences.

<table>
<thead>
<tr>
<th>PRODUCT OVERVIEW</th>
<th>2001 Toyota Corolla</th>
<th>2001 Ford Focus</th>
<th>2001 Plymouth Neon</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Overall User Rating</strong></td>
<td>60% Recommended (24 reviews)</td>
<td>79% Recommended (65 reviews)</td>
<td>0% Recommended (1 review)</td>
</tr>
<tr>
<td><strong>Pricing</strong></td>
<td>Est Price: $10,300</td>
<td>Est Price: $9,824</td>
<td>Est Price: $8,181</td>
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#### USER RATING DETAILS

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<thead>
<tr>
<th>Reliability</th>
<th>5.0</th>
<th>4.0</th>
<th>3.0</th>
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<tbody>
<tr>
<td>Seat Comfort</td>
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<td>4.0</td>
<td>5.0</td>
</tr>
<tr>
<td>Quality and Craftsmanship</td>
<td>4.0</td>
<td>4.0</td>
<td>4.0</td>
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<tr>
<td>Roominess</td>
<td>3.5</td>
<td>4.0</td>
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</table>

#### SPECIFICATIONS

<table>
<thead>
<tr>
<th>Age</th>
<th>Used</th>
<th>Used</th>
<th>Used</th>
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<tbody>
<tr>
<td>Available Engines</td>
<td>1.8 L 4 cyl.</td>
<td>2.0 L 4 cyl.</td>
<td>2.0 L 4 cyl.</td>
</tr>
<tr>
<td>Estimated Price</td>
<td>Under $10,000</td>
<td>Under $10,000</td>
<td>Under $10,000</td>
</tr>
<tr>
<td>Estimated Retail Price</td>
<td>$9,857 - $10,307</td>
<td>$8,155 - $9,780</td>
<td>$7,433</td>
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<tr>
<td>Estimated Wholesale Price</td>
<td>$6,465 - $6,963</td>
<td>$5,328 - $6,561</td>
<td>$4,776</td>
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<tr>
<td>Miles per Gallon</td>
<td>28/41</td>
<td>25/31</td>
<td>28/36</td>
</tr>
<tr>
<td>Model Year</td>
<td>2001</td>
<td>2001</td>
<td>2001</td>
</tr>
<tr>
<td>Models</td>
<td>Corolla</td>
<td>Focus</td>
<td>Neon</td>
</tr>
<tr>
<td>More Information</td>
<td>Compare all 2001 Toyota Corolla models</td>
<td>Compare all 2001 Ford Focus models</td>
<td>View full spec</td>
</tr>
<tr>
<td>Original List Price</td>
<td>$12,568 - $15,383</td>
<td>$12,125 - $16,255</td>
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<tr>
<td>Seating Capacity</td>
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<td>5</td>
<td>5</td>
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<tr>
<td>Type</td>
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<td>Passenger Cars</td>
<td>Passenger Cars</td>
</tr>
<tr>
<td>Fuel Type</td>
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<td>Gasoline</td>
<td>Gasoline</td>
</tr>
</tbody>
</table>
What car should I buy?

My father says, “Always stick with Toyotas.”

My friend says, “You should buy a Ford.”
What car should I buy?

Last time, I bought a Ford, and it broke down.
How much can I trust the recommenders?

Edmunds  
Consumer Reports  
Epinions

My Experience  
My Friend  
My Father
Assessing trustworthiness of recommenders

- Define trust:
  - “The estimated likelihood that an entity will fulfill expectations”
  - Is this a good definition?
  - Problems can arise when there are differences in expectations between the truster and the trustee

- Define reputation:
  - “An estimate of the amount of trust a group has in an entity.”
  - Is this a good definition?

- Anytime a reputation is based on what others recommend, trustworthiness of recommenders must also be evaluated
  - Can we ever assume that a recommender is telling the truth?

- Modeling the trustworthiness of all players quickly gets complicated
Humans and Agents Modeling Trust

- Are humans good at modeling trustworthiness?
  - Humans can capture a lot of information easily (“I have a bad feeling about…”)
  - Sometimes assessments are not rational (“Once I had a bad experience…”)

- Should agents be designed to model trustworthiness exactly the same way humans do?

- What are the benefits/problems with the following human tendencies?
  - Gossiping
  - Stereotypes/Prejudices
  - Forgiveness
  - Risk Sensitivity based on Emotion
Activity #2: The Market for Candy Bars

- **Rules of the game:**
  - Seller past behavior is indicative of future behavior (assume WF1)
  - Seller never under-advertises
  - First-price, sealed bid auction
  - Buyers will bid for a candy bar based on seller advertised price and seller reputation (if it exists)
  - Winning bid gets the candy bar
  - Winner publicly (and truthfully) rates the seller in terms of actual value minus advertised value ($q_r - q_a$)
The Market for Candy Bars

- **Round 1:**
  - **Seller A’s profile**
    - Reputation: $q_r - q_a = 0$
    - Number of ratings: 1,000
    - Candy bar advertised value: $10
  - **Place your bids!**
    - Seller’s new reputation ($q_r - q_a$): ________
    - Seller’s profit/loss ($q_c - q_r$): ________
The Market for Candy Bars

- **Round 2:**
  - **Seller B’s profile**
    - Reputation: ???
    - Number of ratings: 0
    - Candy bar advertised value: $10
  - **Place your bids!**
    - Seller’s new reputation ($q_r - q_a$): ________
    - Seller’s profit/loss ($q_c - q_r$): ________
The Market for Candy Bars

- **Round 3:**
  - **Seller C’s profile**
    - Reputation: ???
    - Number of ratings: 0
    - Candy bar advertised value: $10
  - **Place your bids!**
    - Seller’s new reputation ($q_r - q_a$): ________
    - Seller’s profit/loss ($q_c - q_r$): ________
The Market for Candy Bars

- **Round 4:**
  - **Seller D’s profile**
    - Reputation: ???
    - Number of ratings: 0
    - Candy bar advertised value: $10
  - **Place your bids!**
    - Seller’s new reputation ($q_r - q_a$): ________
    - Seller’s profit/loss ($q_c - q_r$): ________
Market Entry

■ What happens to reliable sellers when they enter a market?
  ■ Unfair losses

■ What happens to unreliable sellers when they enter a market?
  ■ Unfair gains

■ Under the assumptions of this game, how can we calculate the first-transaction unfair loss of a reliable market entrant?

\[ \text{Loss} = (P(\text{Reliable}) \times q_{r,\text{reliable}} + P(\text{Unreliable}) \times q_{r,\text{unreliable}}) \]
Unfair Losses and Gains

- How will reliable and unreliable sellers behave if they are subject to unfair losses and gains?
  - Unreliable sellers exit and reenter the market
  - Reliable sellers are disadvantaged to enter the market

- What are some solutions?
  - Require “permanent” identities
  - Require all entrants to start out with very low reputation
  - Attempt to assess initial reputation based on reputations of similar sellers
Questions

- What is the advantage of a long-standing reputation in a market?
  - Can charge a premium price for same quality goods
  - The extra premium due to the high reputation is the economic value of the reputation

- What would have happened if we had played the game with no public reputations?

- What unrealistic assumptions did our game make?

- Was our reputation measure a good one?

- Is the reputation mechanism we used well-functioning?
Questions

- What are the pros and cons of the e-Bay style reputation model?
- Why do “theoretically-flawed” reputation work so well in practice?
- What are strategies that sellers can use to beat the reputation mechanism?
- What are advantages/disadvantages of centralized vs. localized maintenance of trust models?