Individual Judgment and Trust Formation: An Experimental Investigation of Online Financial Advice

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Outline for the Presentation

- Our Research Team

- Motivation

- Research Questions

- Background Research

- Research Design

- Results

- Conclusions and Public Policy Implications

Interdisciplinary Team

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Design and Analysis of Choice Experiments, Choice-based Measurement, Judgment & Decision Processes

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Personal Motivation

Motivation-
Increased Consumer Financial Responsibility

- "Do-it-yourself" finance is a catchphrase to describe the increased role U.S. consumers face in financial decision-making (Ryan et al. 2010)

- New credit, mortgage and investment products force individuals to make complex decisions on their own

  - A new generation of young and financially inexperienced consumers face mounting student loan debt

- This is an issue globally with pensions shifting to defined contribution arrangements

Motivation-
Financial Mistakes & Low Financial Literacy

- Growing literature documents frequent mistakes made by investors (Campbell et al. 2011; Agarwal et al 2009; BarGill and Warren 2008; Campbell 2006, Calvet et al 2007, 2009)

- Studies from around the world highlight low financial literacy among consumers (Lusardi and Mitchell 2011, FLat World Project)

- Large evidence that individuals are susceptible to behavioral biases in financial decision-making (Agnew 2010)

Investment Heuristics and Biases

- ❑ Status Quo Bias
- ❑ Default Bias
- ❑ 1/n Heuristic
- ❑ Excessive Extrapolation
- ❑ Mental Accounting

- ❑ Familiarity Bias
- ❑ Trust
- ❑ Naïve Learning Heuristic
- ❑ Choice Overload
- ❑ Endorsement Effect

Financial Decision Making = Anxiety

"I feel like him – if I make the wrong choice, I'm going to be hurting myself, cutting myself, losing a lot. But I can't tell which choices are right and which are wrong. It's very scary. I'd like to be able to understand what's going on but I just don't."

What Can Be Done?

- Current research examines approaches including:
  - financial education,
  - regulation,
  - communication methods,
  - retirement plan design, and
  - behavioral interventions

  (for example, Benartzi and Thaler 2004; Campbell 2011; Hershfield et al. 2011: Lusardi et al. 2008; Goldstein et al. 2008)

- U.S. Consumer Financial Protection Board, U.K. Financial Conduct Authority, Australia's Future of Finance Advice reforms

Another Solution: Financial Advice?

- Positive: Advisers can provide clients benefits from economies of scale in information acquisition

- Negative: Several theoretical pieces suggest the downside of advice and the potential for biased advice or exploitation of the less financially literate

  (For example, Hackethal and Inderst 2012, Inderst and Ottaviani 2012, Inderst and Ottaviani 2009)

Troubling Research

- Evidence from the ASIC (Australian Securities and Investment Commission) 'shadow shopping' report suggests that quality should be a focus

- The study found 86% of clients thought they received 'good' advice, while ASIC found only 6% of advice was 'good'

- Furthermore, 81% trusted the advice they received from their adviser 'a lot'

U.S. Empirical Studies

- Audit study of financial advice in greater Boston area shows advisers fail to de-bias clients and often reinforce biases in their own interest (Mullainathan, Noeth and Schoar 2012)
  - Advisers encourage returns-chasing behavior
  - Push for actively managed funds with higher fees even if client has a well-diversified, low-fee portfolio

- Study of broker-sold funds find they underperform those sold through direct channels on a risk-adjusted basis (Bergstresser, Chalmers and Tufano 2009)

- The average broker clients' portfolio underperforms self-directed retirement portfolios. Clients would have been better off in a default target date fund (Chalmers and Reuter 2013)

Not All News is Bad

- Study analyzed the effects of unbiased computer generated advice on a random sample of 8,000 German brokerage clients (Bhattacharya et al. 2012)

- Found that individuals who used the advice improved their portfolio's efficiency

- The caveat is only 5% of customers contacted used the advice and less acted

Research Questions

- How well do individuals evaluate the quality of the advice they receive from financial advisers?

- Can signals based on adviser attributes influence judgments?

- How do advisers maintain good reputations despite giving bad advice to clients?

- How well do people learn?

Video Experimental Task

- Using an online survey, subjects viewed video advice from **2** different advisers related to **4** financial topics

- For _each_ topic, one adviser presented the **good** advice and the other presented the **bad** advice

  - Whether the advice given by a specific advisor was good or bad varied across topics by treatment

- The attributes of the financial advisers varied between subjects (**male/female; young/old; certification/not**)

- After the advice for each topic was given, subjects were asked **"Whose advice would you be most likely to follow?"**

- Subjects were incentivized to choose the correct advice

More on Adviser Attributes

- **Age**- Motivated by research indicating that individuals are more responsive to advice from people who are older (Feng and MacGeorge 2006)

- **Gender**- Survey of the Australian financial adviser marketing materials revealed women often portrayed as advisers

- **Certification**-Research suggests that individuals are less likely to discount advice from people who are perceived experts or who have experience (Feng and MacGeorge 2006, Harvey and Fischer 1997, Nadler et al. 2003)
  - In the U.S., over 100 designations exist that are difficult to tell apart
  - Designations can have varying requirements and standards of care (Bromberg and Cackley 2012)
  - Consumers unaware of different standards of care (Hung and Yoong 2013, Hung et al 2008, Infogroup 2010)

- Conducted **substantial** pretesting of actors

Example of Video Advice

David Forbes, No Certification

Good Advice

Claire Harris, Certified Financial Planner

Bad Advice

Whose advice would you be most likely to follow?

○ **Financial Advisor A**   ○ **Financial Advisor B**

4 'Actor' Financial Advisers
Chosen (and Named) Following Pre-Tests

Financial Topics

- Topics had to have one clear 'right' answer for all people

- Identified issues that are commonly faced around the world and have been studied in prior literature

  ① Management fees in index funds
  ② Retirement account consolidation
  ③ Investment diversification
  ④ Debt

Further Advice Relevance

- U.S. Department of Labor issued final participant advice guidelines in 2011

- Discussed 5 distinct investment errors people make:
  1. **payment of inefficiently high investment fees**
  2. poor trading strategies
  3. **inadequate diversification**
  4. inappropriate risk
  5. payment of excess tax

- 3 of our 4 advice topics relate to the two bolded errors

Source: Vanguard Regulatory Brief: DOL issues final participant advice regulations

Management Fee Advice

Both Advisers Say:

I understand you need help regarding your choice of share index fund. Did you know that all share index funds invest with the aim of matching the overall share market return? These various share index funds provide an almost identical product …

Good Advice: … so why pay a fund manager more than the others for the same thing? Therefore, I recommend that you **_choose_** the share index fund with the **_lowest_** management fees.

Bad Advice: … but some fund managers have better reputations than others and you get what you pay for. Therefore, I recommend that you **_avoid_** the share index funds with **_low_** management fees.

Other Topic Recommendations

Diversification	**Good:** Therefore, I recommend that you **_spread_** your **_money across a variety_** of shares in different types of companies and industries.
	Bad: Therefore, I recommend that you **_invest_** your money in **_one_** blue chip company.
Debt	**Good:** Therefore, I recommend you **_pay off_** your credit card debt to eliminate the high interest charges.
	Bad: Therefore, I recommend you **_ignore_** your credit card debt for now and put your inheritance in a separate savings account.
Account Consolidation: 'Super'	**Good:** As a result, I recommend that you **_roll all_** of these accounts **_together_** so you are not paying extra fees.
	Bad: Despite that, I recommend that you **_not roll all_** of these accounts together so you are **_diversified across different_** superannuation funds.

Online Survey Outline-1,280 Surveyed

- **Survey questions**
  - Financial competence & numeracy
  - Financial products – knowledge, awareness, interest
  - Trust in financial advisers; experience with financial advisers; from whom would seek financial advice and for what?
- **Experimental task**
  - Task introduction *and* topic intro by 'trusted' non-adviser
  - Video advice from 'financial advisers' (4 topics x advice type(good/bad) x 2 advisors)
  - Whose advice would you be most likely to follow?
- **Survey questions**
  - Demographics; personality traits; risk attitudes; past experience with advice decisions
  - Debriefing - explaining which advice was best for each topic

WHAT PREDICTS THE CHOICE OF GOOD ADVICE?

What Predicts Choice of Good Advice?

Logit Estimation   **Sample:** First Decision
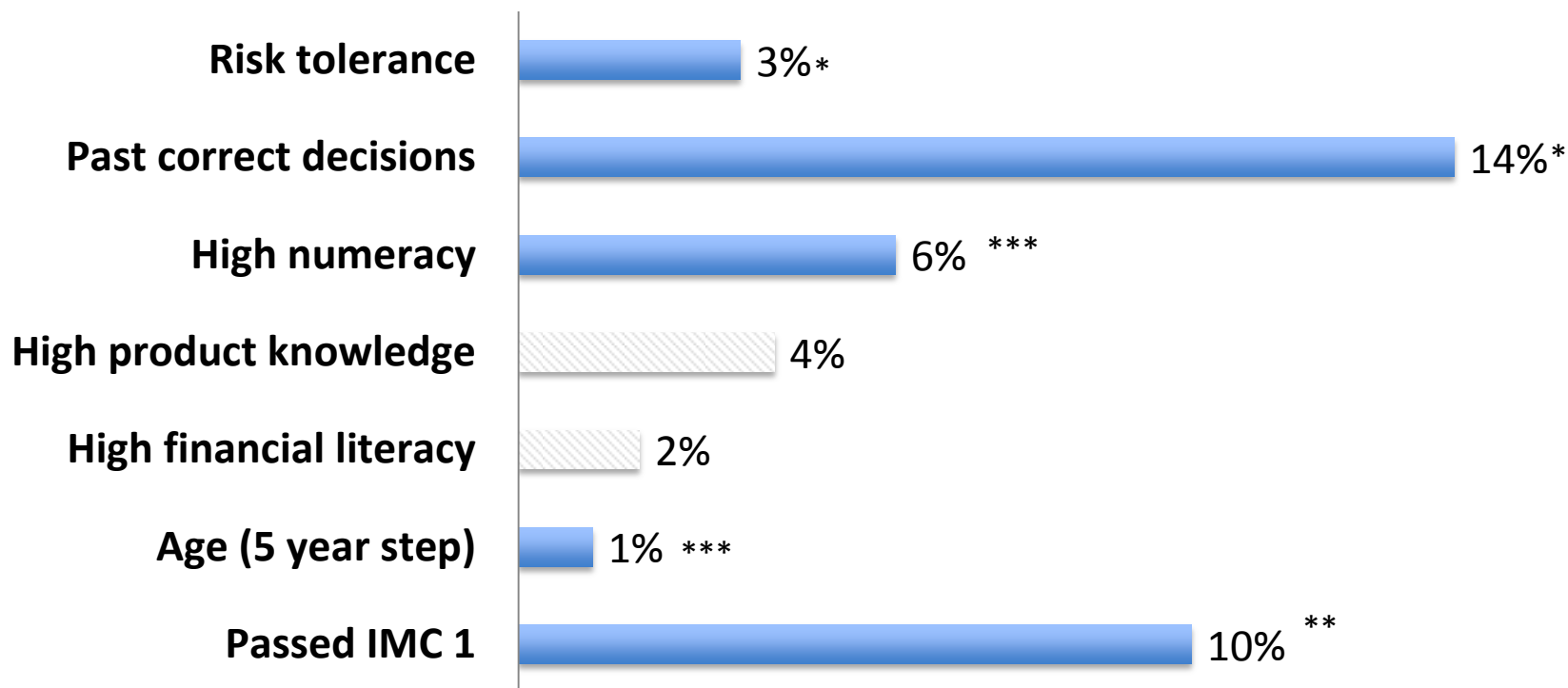
Dependent Variable: Correct Advice Choice

Independent Variables:

- *Respondent characteristics*: gender, age, financial literacy, product knowledge, numeracy, conscientiousness, impulsiveness, past correct decisions, risk tolerance
- *Advice characteristics:* advice viewed first, advice topic
- *Adviser characteristics:* gender, age, not certified
- *Interactions:* complete set of interactions between adviser characteristics & advice chosen first; complete set of interactions between all topics & respondent characteristics

What Predicts Choice of Good Advice?
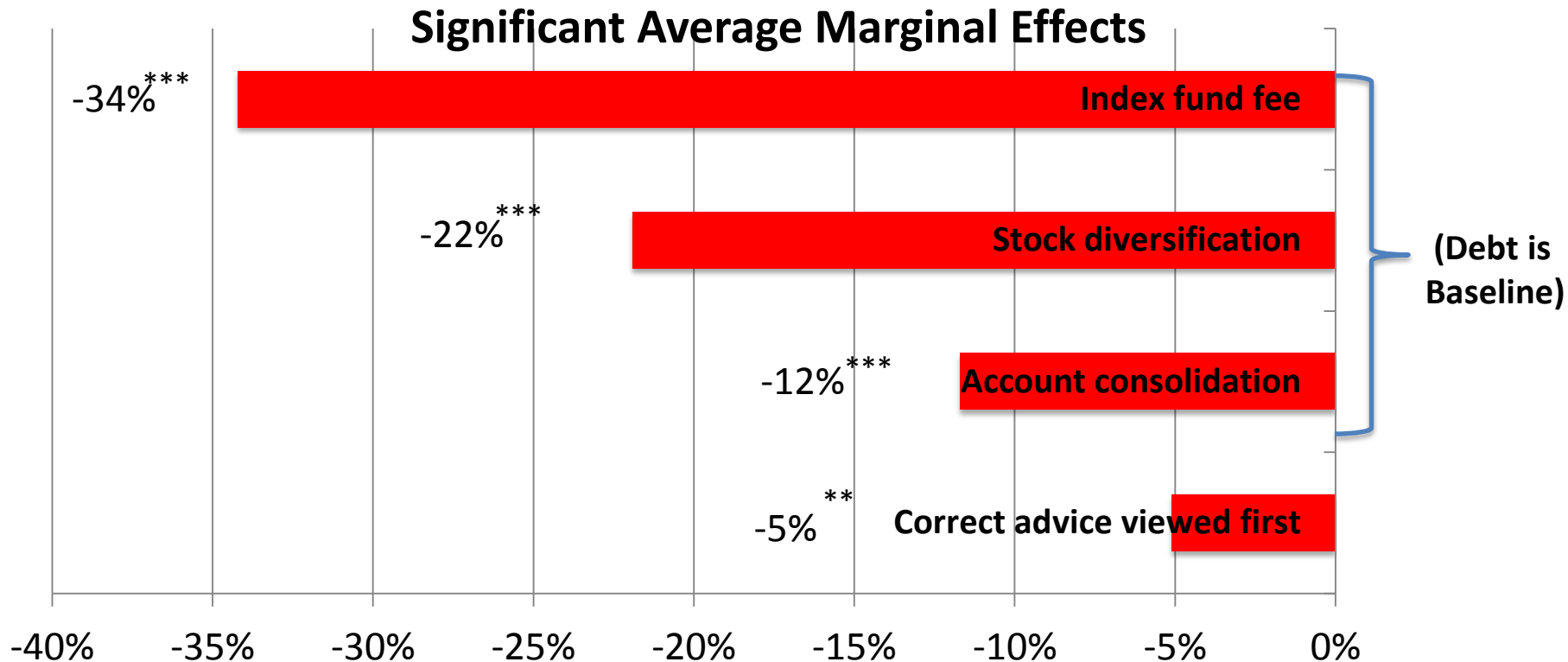## Respondent Characteristics

Significant Average Marginal Effects

Characteristic	Effect
Risk tolerance	3%*
Past correct decisions	14%*
High numeracy	6% ***
High product knowledge	4%
High financial literacy	2%
Age (5 year step)	1% ***
Passed IMC 1	10% **

- **Older, more numerate, experienced and attentive respondents more likely to choose good advice**

What Predicts Choice of Good Advice?
# Advice Characteristics

Significant Average Marginal Effects

-34%*** — Index fund fee

-22%*** — Stock diversification

-12%*** — Account consolidation

-5%** — Correct advice viewed first

(Debt is Baseline)

-40% -35% -30% -25% -20% -15% -10% -5% 0%

- **Certain topics were more difficult that others**
- **Less likely to choose the first advice seen**

What Predicts Choice of Good Advice?
Adviser Characteristics

Significant Average Marginal Effects

Female — 3%

Not certified — *-5%

Older — ***-6%

(Horizontal axis: -8%, -6%, -4%, -2%, 0%, 2%, 4%)
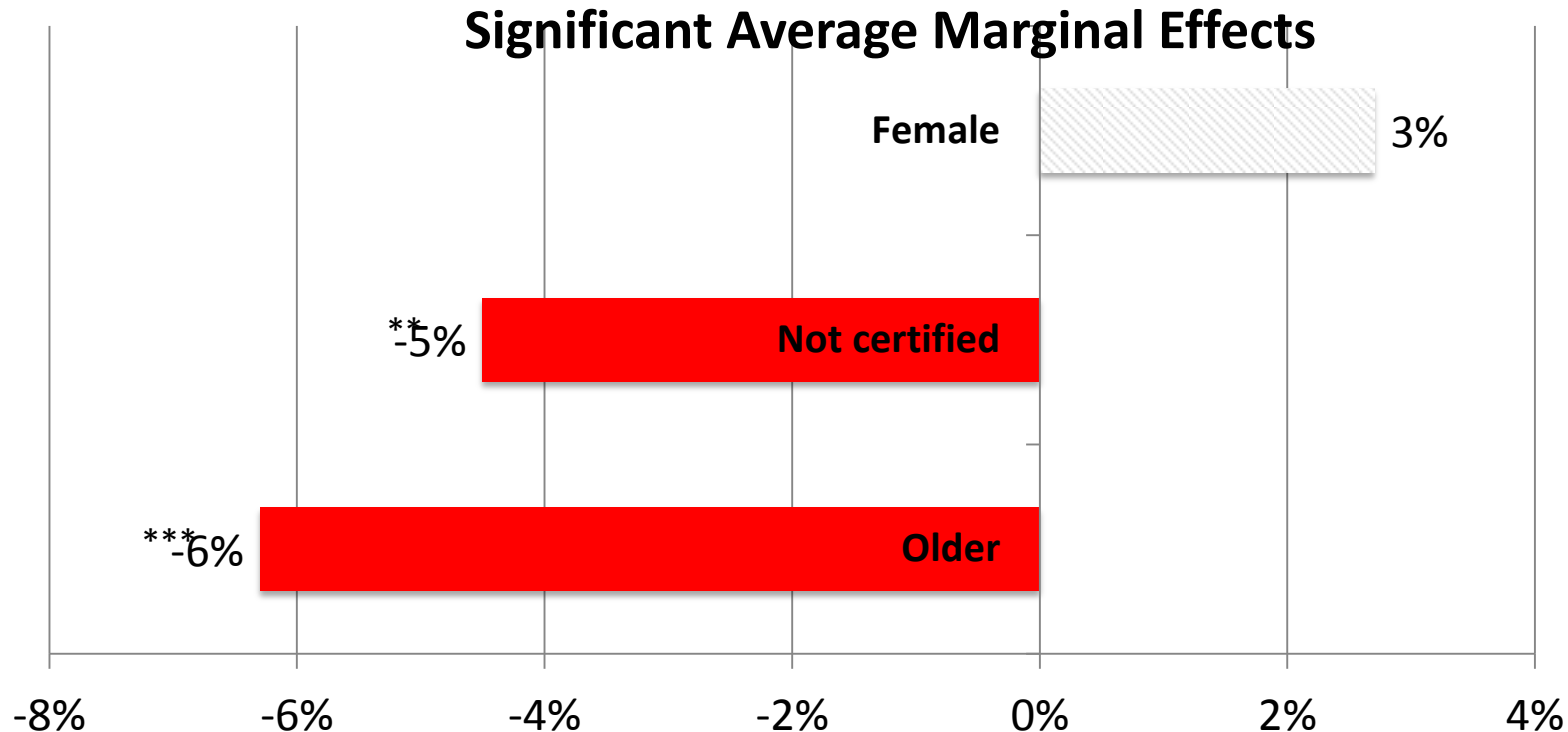
- **Younger advisers preferred**
- **Certified advisers preferred (Pretesting showed respondents had trouble discerning real certifications from fake)**

DO RESPONDENTS STICK WITH THEIR PRIOR ADVISER?

Do Respondents Stick with Prior Adviser?

Logit Estimation   **Sample:** One Estimation for Each Decision (Choice 1, Choice 2, Choice 3 and Choice 4)

Dependent Variable: Chose the 'Left' Adviser

Independent Variables:

- *Respondent characteristics*: gender, age, financial literacy, product knowledge, numeracy, conscientiousness, impulsiveness, past correct decisions, risk tolerance
- *Advice characteristics:* ~~advice viewed first~~, advice topic, wrong advice
- *Left Adviser characteristics:* gender, age, not certified
- Past advice decision: Indicator if adviser chosen preceding topic
- *Interactions:* Complete set of interactions between adviser characteristics & respondent characteristics; complete set of interactions between previous chosen adviser & all variables

Example of Video Advice

David Forbes, No Certification

Claire Harris, Certified Financial Planner

Bad Advice

'LEFT' ADVISER

Whose advice would you be most likely to follow?

⭕ **Financial Advisor A**   ⭕ **Financial Advisor B**

Persistency?
Probability of Choosing 'Left' Adviser

Significant Average Marginal Effects from Four Models

Wrong advice

Choice 4, -72% ***
Choice 3, -65% ***
Choice 2, -65% ***
Choice 1, -63% ***

Chosen in preceding topic

Choice 4, 9%***
Choice 3, 6%***
Choice 2, 4% **
Choice 1, NA

-90%   -70%   -50%   -30%   -10%   10%   30%
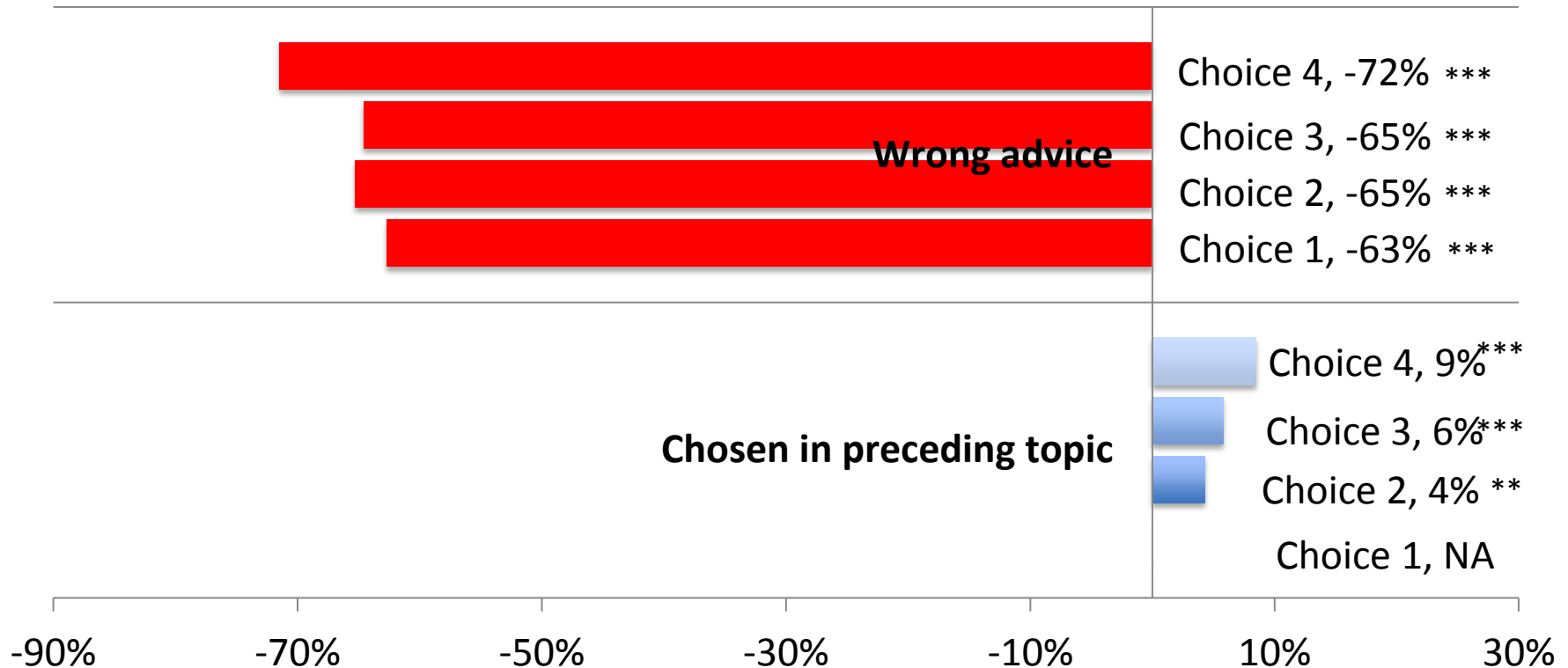
- **May stay with adviser even when advice is not always good**

HOW CAN INDIVIDUALS FAVORABLY VIEW ADVISERS WHEN THEY GIVE BAD ADVICE?

Theory

- We use a variation of a simple Bayesian updating model with ambiguous information (Fryers, Harms, and Jackson 2013)

- Model requires updating as each signal arrives

- Signals can be clear or ambiguous

Easy Topic and Good Advice First

- The model predicts if the topic is easy then the respondent can judge the quality and form an opinion about the adviser
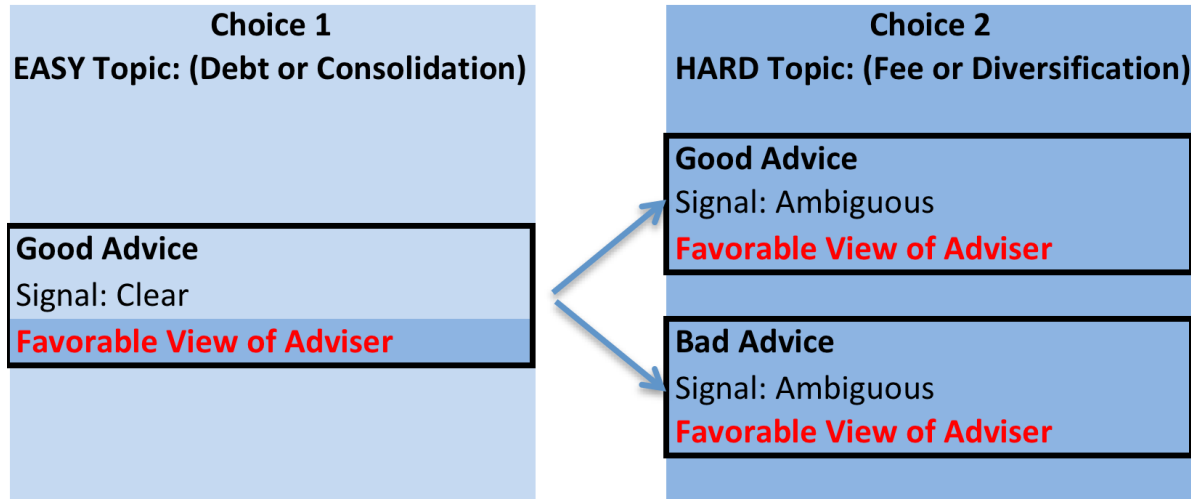
Choice 1

EASY Topic: (Debt or Consolidation)

Good Advice

Signal: Clear

Favorable View of Adviser

- When the advise on an easy topic is good, the respondent should view that adviser favorably
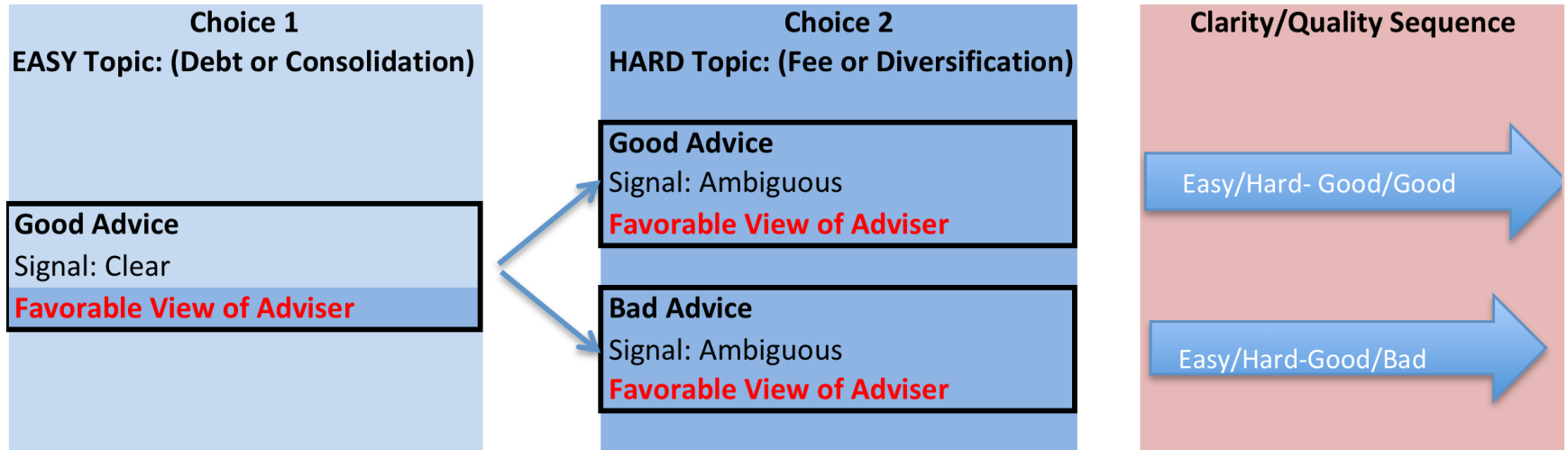
Easy Topic and Good Advice First

- The model predicts if the next topic is hard then the respondent will have difficulty judging the quality of the advice given

Choice 1	Choice 2
EASY Topic: (Debt or Consolidation)	**HARD Topic: (Fee or Diversification)**

Choice 1 — EASY Topic: (Debt or Consolidation)

Good Advice
Signal: Clear
Favorable View of Adviser

Choice 2 — HARD Topic: (Fee or Diversification)

Good Advice
Signal: Ambiguous
Favorable View of Adviser

Bad Advice
Signal: Ambiguous
Favorable View of Adviser

- The model predicts that after Choice 2 the respondent will fall back on their Choice 1 evaluation of the adviser

Easy Topic and Good Advice First

- This example demonstrates an 'Easy-Hard' clarity sequence
- This example demonstrates 2 quality sequences: 'Good-Good' and 'Good-Bad'

Choice 1
EASY Topic: (Debt or Consolidation)

Good Advice
Signal: Clear
Favorable View of Adviser

Choice 2
HARD Topic: (Fee or Diversification)

Good Advice
Signal: Ambiguous
Favorable View of Adviser

Bad Advice
Signal: Ambiguous
Favorable View of Adviser

Clarity/Quality Sequence

Easy/Hard- Good/Good

Easy/Hard-Good/Bad

Easy Topic and Bad Advice First

- The model predicts if the topic is easy then the respondent can judge the quality and form an opinion about the adviser

Choice 1
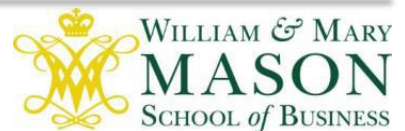
Bad Advice
Signal: Clear
Poor View of Adviser

- When the advise on an good topic is bad, the respondent should view that adviser _less_ favorably
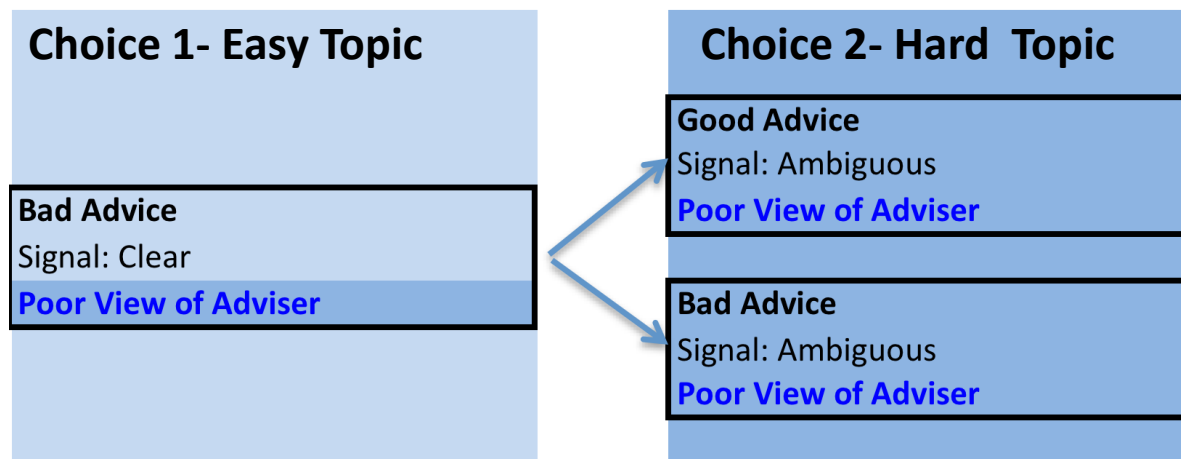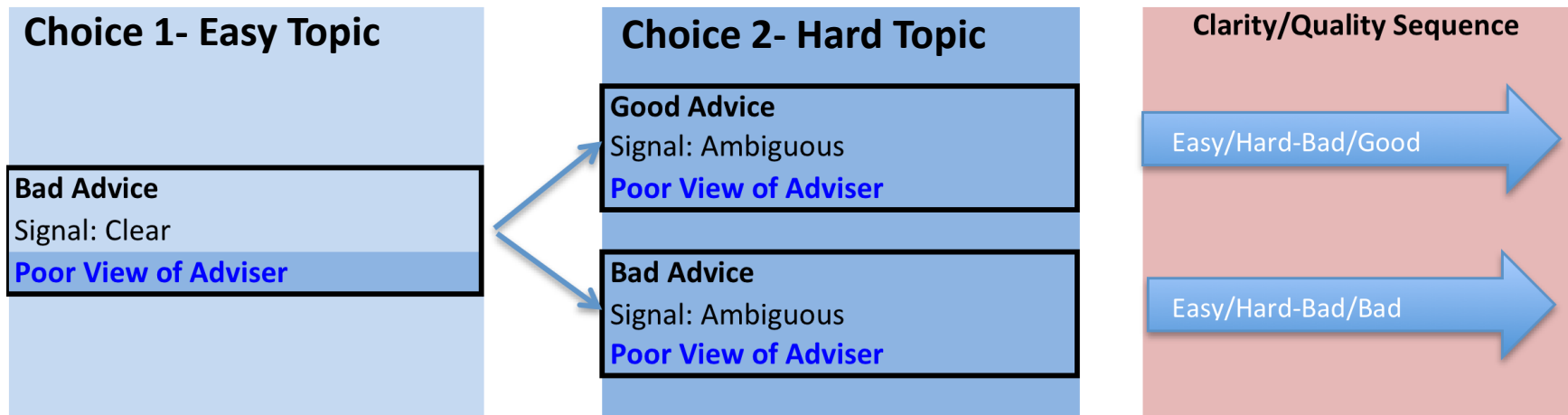
Easy Topic and Bad Advice First

- The model predicts if the next topic is hard then the respondent will have difficulty judging the quality of the advice given

Choice 1- Easy Topic

Bad Advice
Signal: Clear
Poor View of Adviser

Choice 2- Hard Topic

Good Advice
Signal: Ambiguous
Poor View of Adviser

Bad Advice
Signal: Ambiguous
Poor View of Adviser

- The model predicts that after Choice 2 the respondent will fall back on their Choice 1 evaluation of the adviser

Easy Topic and Bad Advice First

- This example demonstrates an 'Easy-Hard' clarity sequence
- This example demonstrates 2 quality sequences: 'Bad-Good' and 'Bad-Bad'

Choice 1- Easy Topic

Bad Advice
Signal: Clear
Poor View of Adviser

Choice 2- Hard Topic

Good Advice
Signal: Ambiguous
Poor View of Adviser

Bad Advice
Signal: Ambiguous
Poor View of Adviser

Clarity/Quality Sequence

Easy/Hard-Bad/Good

Easy/Hard-Bad/Bad

The Same Adviser Can Be Perceived Differently Depending on the Clarity/Quality Sequence
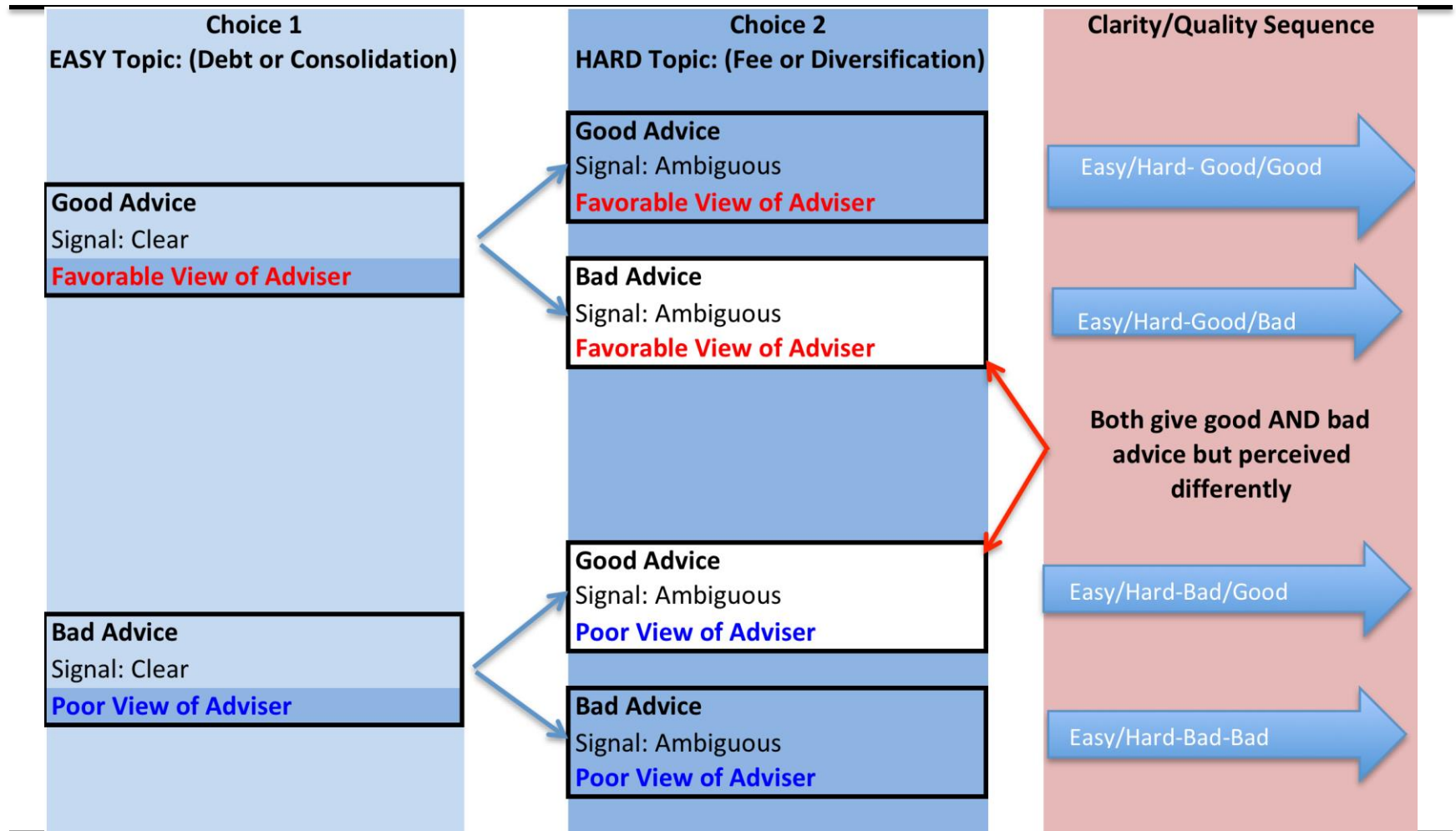
Our Experiment Provides Many More Clarity/Quality Sequences

Two Clarity Sequences

① Easy-Hard-Hard-Easy

② Hard-Easy-Easy-Hard

Eight Quality Sequences

① Bad-Bad-Bad-Bad (BBBB)

② Bad-Bad-Good-Good (BBGG)

③ Bad-Good-Bad-Good (BGBG)

④ Bad-Good-Good-Bad (BGGB)

⑤ Good-Bad-Bad-Good (GBBG)

⑥ Good-Bad-Good-Bad (GBGB)

⑦ Good-Good-Bad-Bad (GGBB)

⑧ Good-Good-Good-Good (GGGG)

Clear Predictions from Certain Combination of Sequences

Two Clarity Sequences

① Easy-Hard-Hard-Easy
② Hard-Easy-Easy-Hard

Eight Quality Sequences

① Bad-Bad-Bad-Bad (BBBB)
② Bad-Bad-Good-Good (BBGG)
③ Bad-Good-Bad-Good (BGBG)
④ Bad-Good-Good-Bad (BGGB)
⑤ Good-Bad-Bad-Good (GBBG)
⑥ Good-Bad-Good-Bad (GBGB)
⑦ Good-Good-Bad-Bad (GGBB)
⑧ Good-Good-Good-Good (GGGG)

Example 1: <u>Same</u> Quality Sequence- BGGB/ Different Clarity Sequence

Scenario	Sequence	Choice 1	Choice 2	Choice 3	Choice 4
Scenario 1	Clarity	Easy	Hard	Hard	Easy
	Quality	Bad	Good	Good	Bad
Scenario 2	Clarity	Hard	Easy	Easy	Hard
	Quality	Bad	Good	Good	Bad

Example 1: Prediction

Scenario	Sequence	Choice 1	Choice 2	Choice 3	Choice 4
Scenario 1	Clarity	Easy	Hard	Hard	Easy
	Quality	Bad	Good	Good	Bad

In scenario 1, the respondent hears **bad** advice associated with **easy** topic

Scenario	Sequence	Choice 1	Choice 2	Choice 3	Choice 4
Scenario 2	Clarity	Hard	Easy	Easy	Hard
	Quality	Bad	Good	Good	Bad

In scenario 2, the respondent hears **good** advice associated with **easy** topics

Prediction: The <u>same</u> adviser would be viewed more favorably in scenario 2

Example 2: Same Quality Sequence-GBBG/ Different Clarity Sequence

Scenario	Sequence	Choice 1	Choice 2	Choice 3	Choice 4
Scenario 3	Clarity	Easy	Hard	Hard	Easy
	Quality	Good	Bad	Bad	Good
Scenario 4	Clarity	Hard	Easy	Easy	Hard
	Quality	Good	Bad	Bad	Good

Example 2: <u>Same</u> Quality Sequence- **GBBG**/ Different Clarity Sequence

Scenario	Sequence	Choice 1	Choice 2	Choice 3	Choice 4
Scenario 3	Clarity	Easy	Hard	Hard	Easy
	Quality	Good	Bad	Bad	Good

In scenario 3, the respondent hears **good** advice associated with **easy** topic

Scenario	Sequence	Choice 1	Choice 2	Choice 3	Choice 4
Scenario 4	Clarity	Hard	Easy	Easy	Hard
	Quality	Good	Bad	Bad	Good

In scenario 4, the respondent hears **bad** advice associated with **easy** topics

Prediction: The <u>same</u> adviser would be viewed more favorably in scenario 3

Adviser Characteristics

- After making the four choices, the respondents compared their two advisers
- The respondents could rate either adviser as highest on each characteristics or the same on both
- An indicator variable was created to equal 1 if the respondent rated the adviser as MOST displaying the characteristic or at least as good as the other adviser, and zero otherwise

Characteristics

Trustworthiness   *Professionalism*   *Understanding*

Competence   *Attractiveness*   *Genuineness*

Persuasiveness

How Do Respondent Judge Adviser Characteristics?

Logit Estimation for Each Characteristic

Dependent Variables: Indicator variable for characteristic rating
Independent Variables:

- *Adviser characteristics:* gender, age, not certified
- *Quality Sequences:* indicator variables for 7 of the 8 sequences
- *Clarity Sequence:* one indicator for HEEH sequence
- *Interactions:* Quality Sequences X Indicator for Clarity Sequence

Trustworthiness- Predictive Margins

Sequence of advice quality

▨ topic sequence: easy-hard-hard-easy   ▮ topic sequence: hard-easy-easy-hard
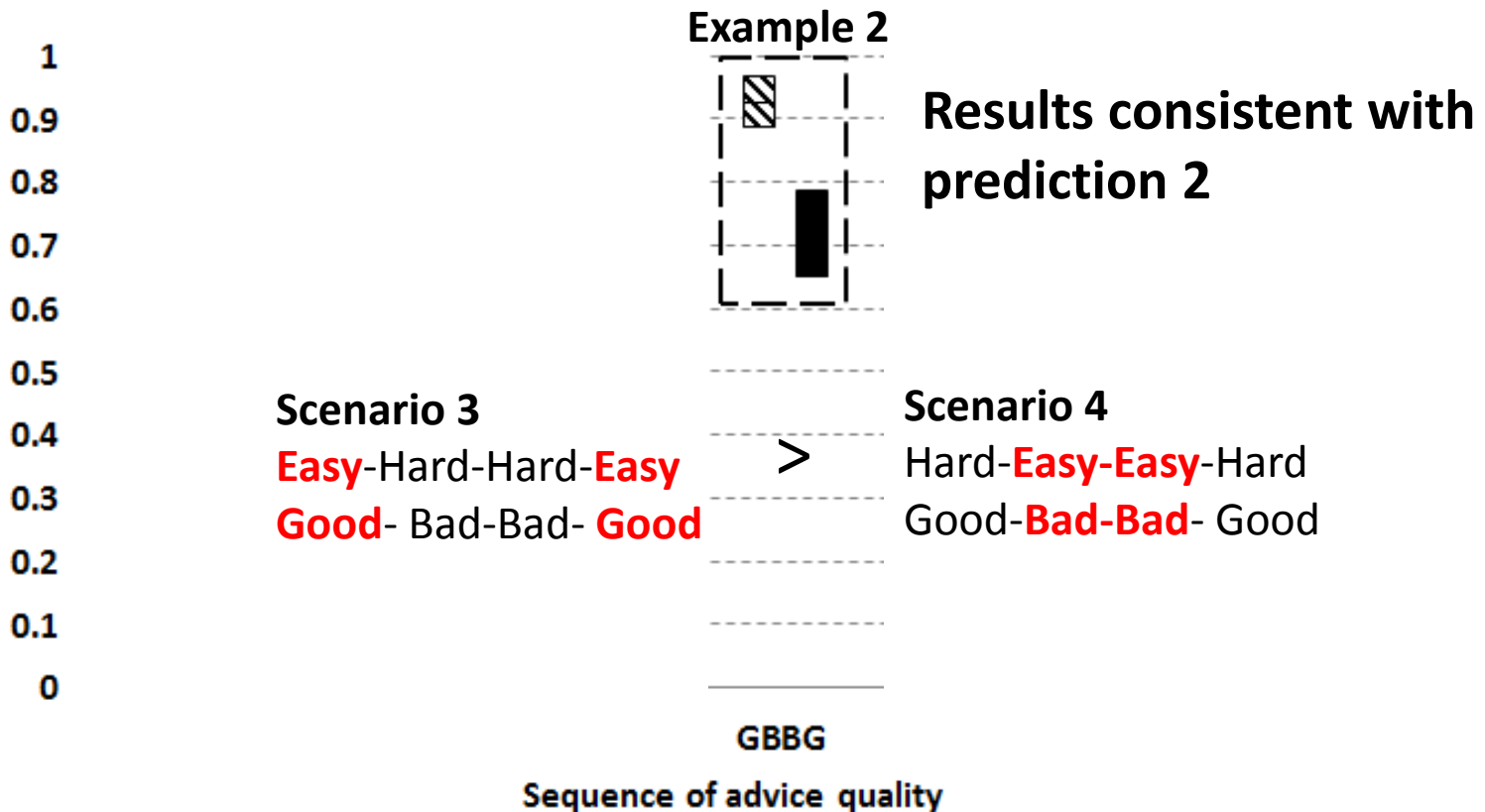
Trustworthiness- Predictive Margins

- An adviser that gives all good advice is ranked significantly more trustworthy than the same adviser that gives all bad advice

- The quality of the advice influences opinions on characteristics

Sequence of advice quality

▨ topic sequence: easy-hard-hard-easy   ■ topic sequence: hard-easy-easy-hard

Trustworthiness- Predictive Margins

Example 1

Results are consistent with prediction 1

Easy-Hard-Hard-**Easy**
Bad- Good-Good-**Bad**

<

Hard-**Easy-Easy**- Hard
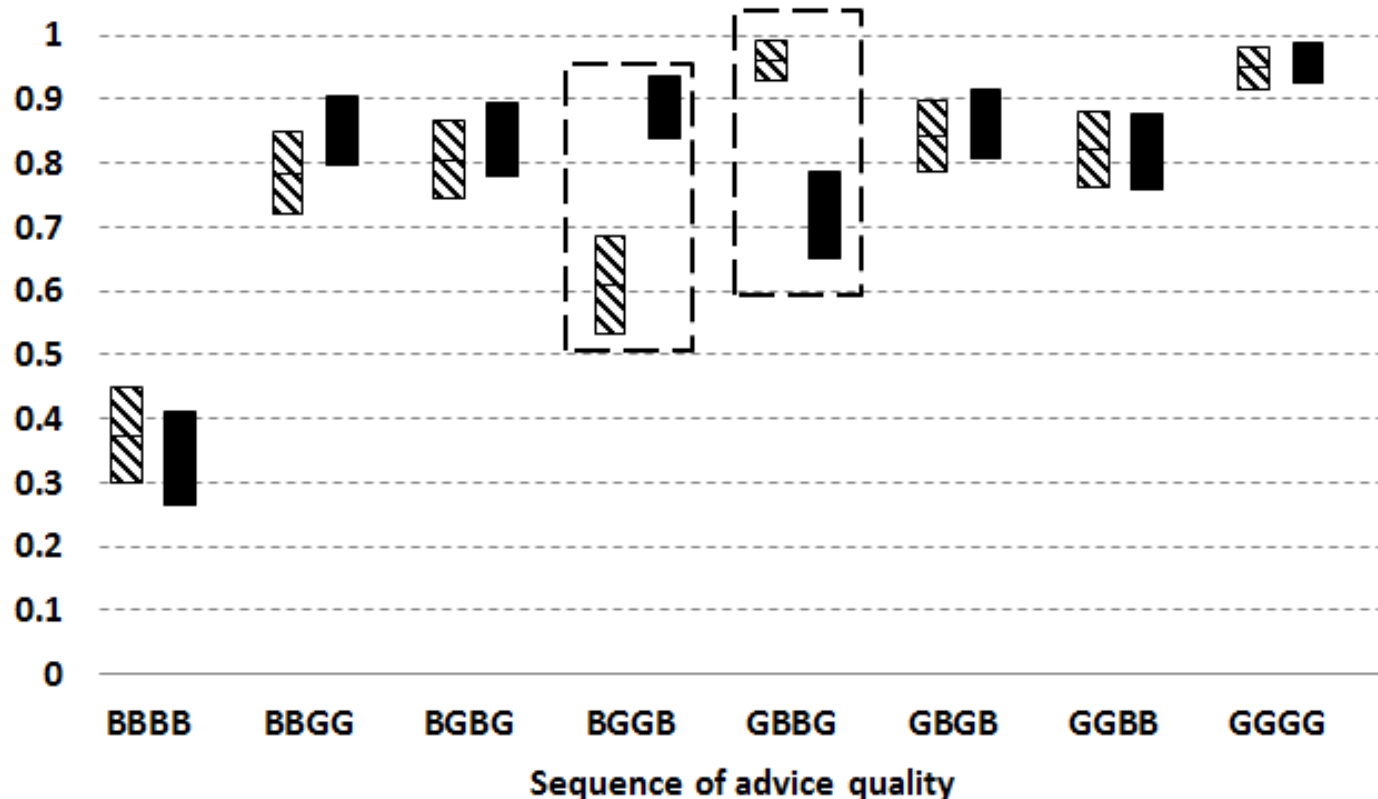Bad -**Good-Good**-Bad

BGGB

Sequence of advice quality

topic sequence: easy-hard-hard-easy   topic sequence: hard-easy-easy-hard

Trustworthiness- Predictive Margins

Example 1

Easy-Hard-Hard-**Easy**
Bad- Good-Good-**Bad**

<

Hard-**Easy-Easy**- Hard
Bad -**Good-Good**-Bad

BGGB

GGGG

Sequence of advice quality

▨ topic sequence: easy-hard-hard-easy   ▪ topic sequence: hard-easy-easy-hard

Trustworthiness- Predictive Margins

Example 1

Easy-Hard-Hard-Easy
Bad- Good-Good-Bad

<

Hard-Easy-Easy- Hard
Bad -Good-Good-Bad

Sequence of advice quality

⬚ topic sequence: easy-hard-hard-easy   ■ topic sequence: hard-easy-easy-hard

Trustworthiness- Predictive Margins

Example 2

Results consistent with prediction 2

Scenario 3
Easy-Hard-Hard-**Easy**
Good- Bad-Bad- **Good**

\>

Scenario 4
Hard-**Easy-Easy**-Hard
Good-**Bad-Bad**- Good

GBBG

Sequence of advice quality

[hatched] topic sequence: easy-hard-hard-easy [solid] topic sequence: hard-easy-easy-hard

Competence- Predictive Margins

Sequence of advice quality

▨ topic sequence: easy-hard-hard-easy   ■ topic sequence: hard-easy-easy-hard

Professionalism-Predictive Margins
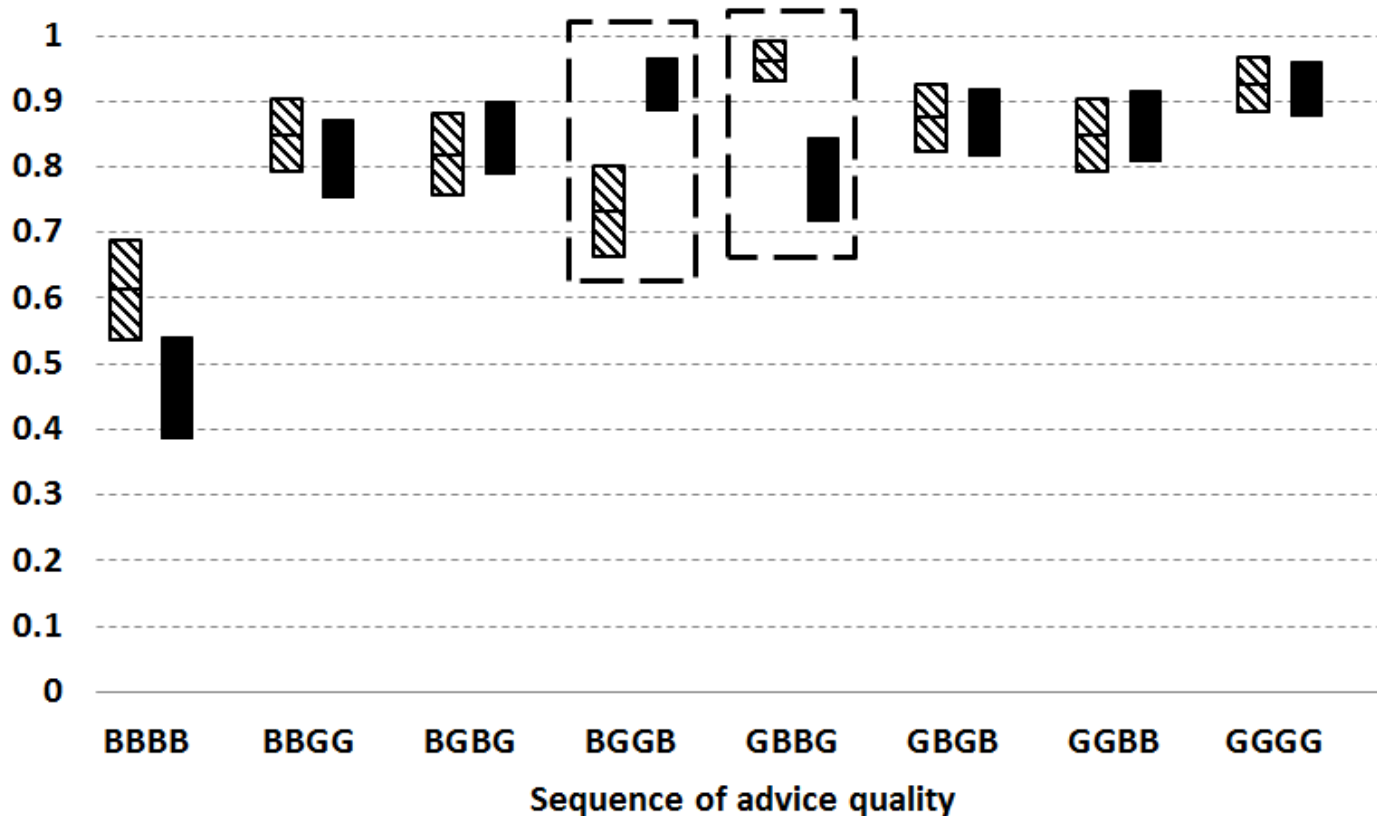
Attractiveness- Predictive Margins
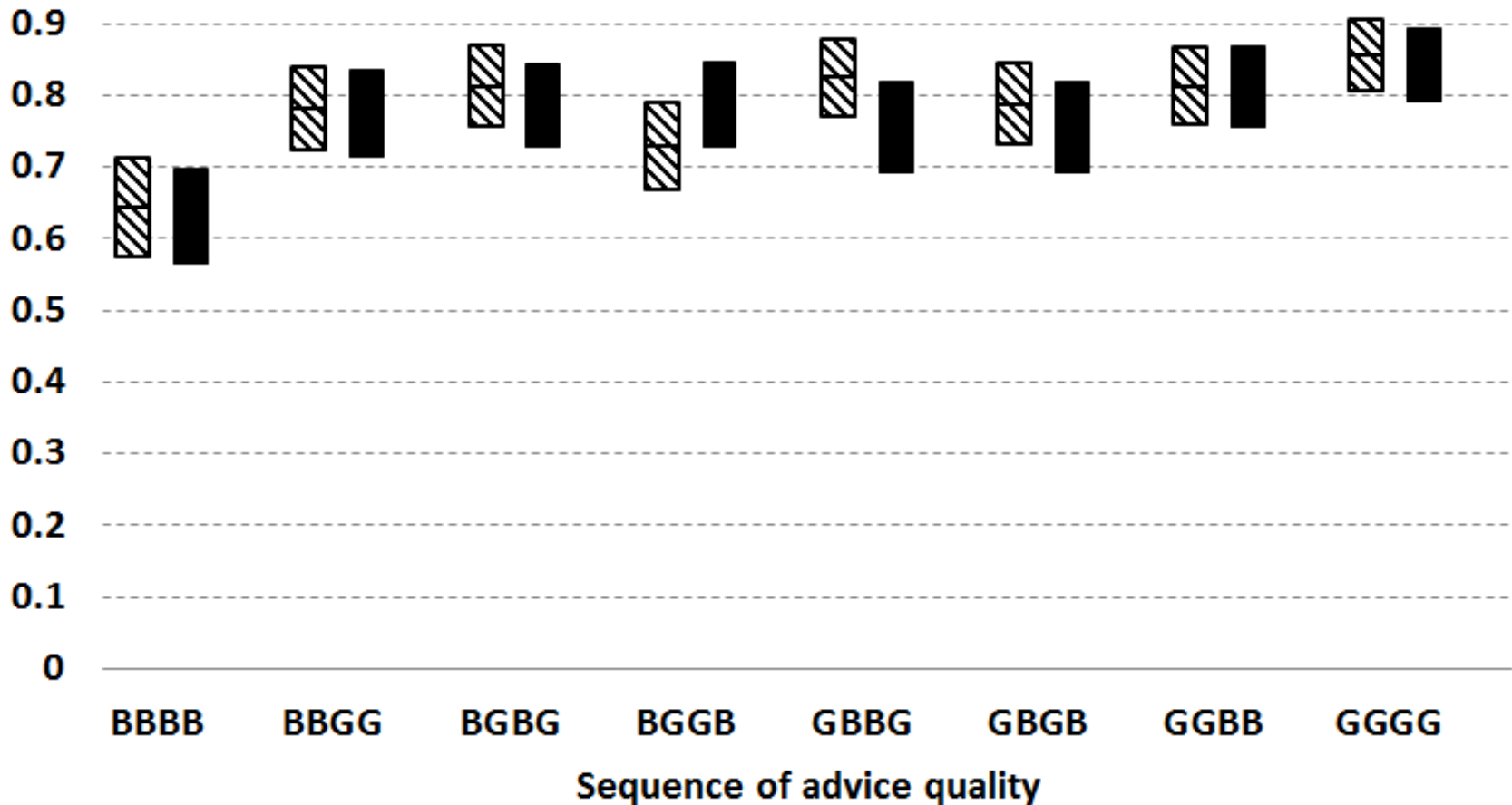
# LEARNING-PRELIMINARY RESULTS

Learning

- The more people know, the more likely they are to detect a poor quality adviser in a consultation
- Two opportunities to learn in the experiment
  - Video experiment
  - Debriefing
- Monetary incentive to learn in both parts
- Can model as a two-stage Markov Chain for each topic
- Preliminary Highlights
  - It appears that financial literacy in some topics may help learning (fees)

Learning Debt
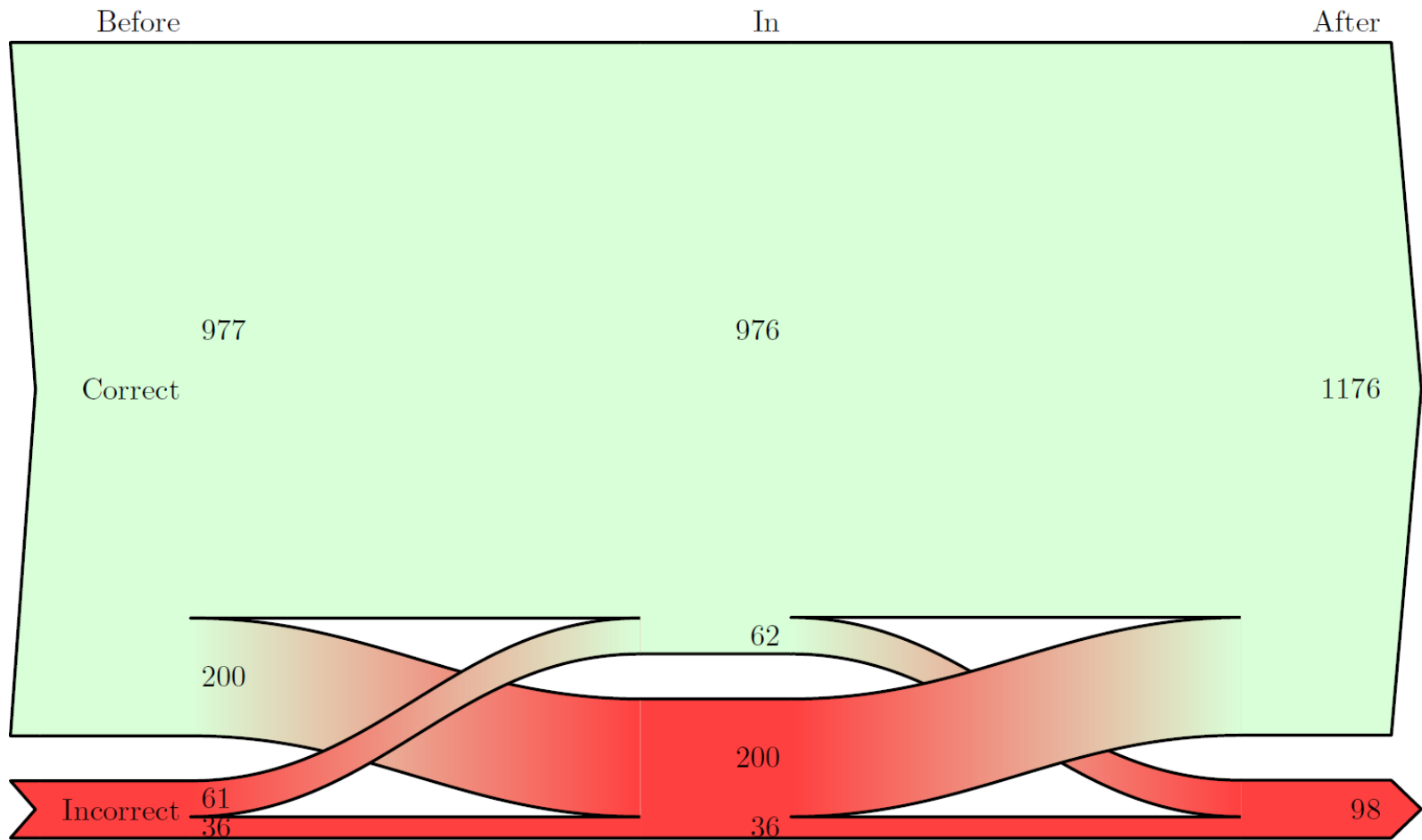
Learning Index Fees
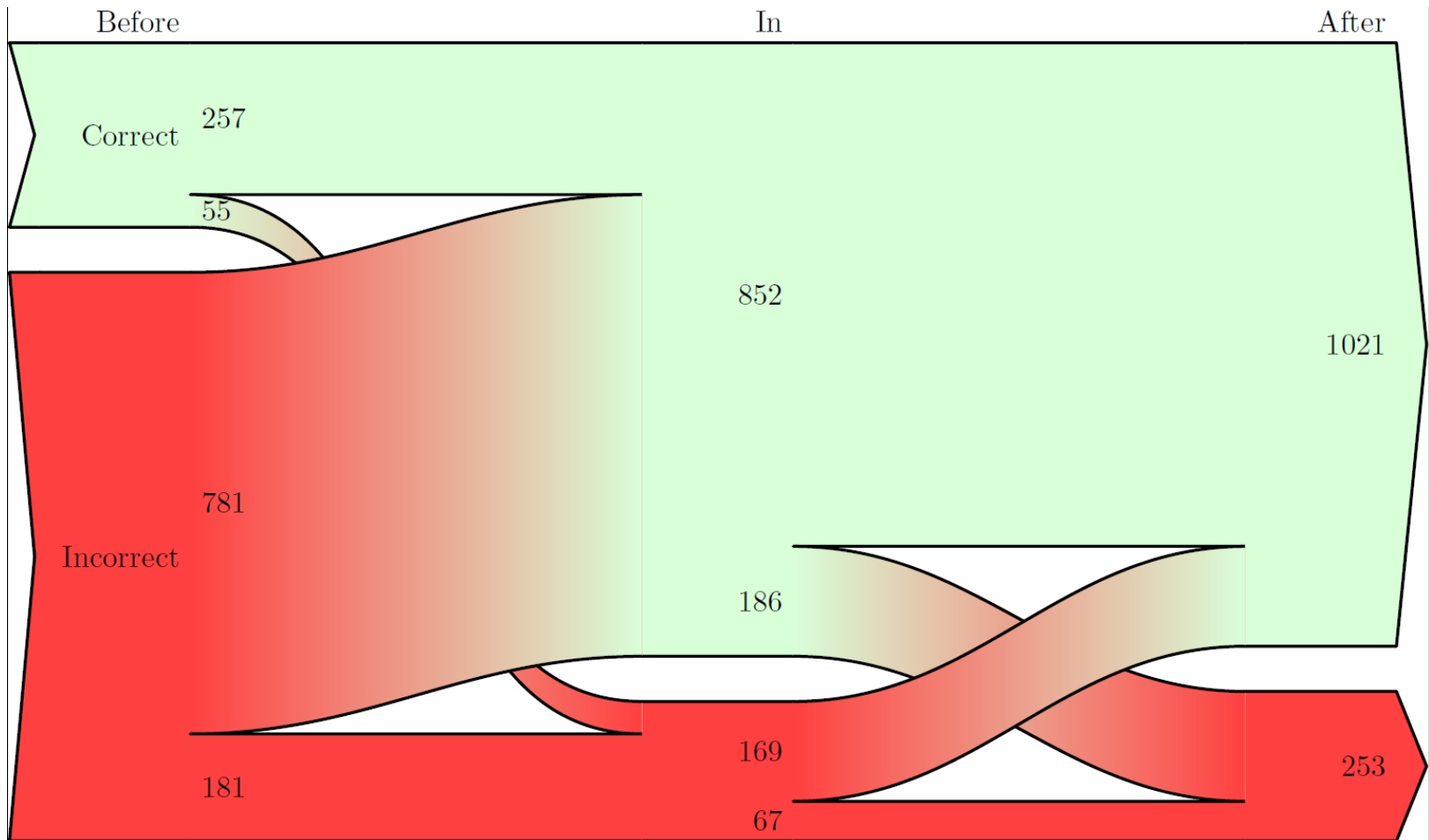
Public Policy Implications

- Results demonstrate that individuals struggle with answers to complicated but common issues and can trust an adviser that provides bad advice
  - Consumers need more assistance choosing advisers
- Certifications can influence choice
  - This can be good or bad depending on the certification
  - Need to endorse one qualification with rigorous and repeated examinations, frequent training, must uphold highest standard of care
  - Why don't advisers need to take the equivalent of a medical board exam or the bar?
  - Remuneration strategies should align adviser and client incentives

Implications for Consumers

- Consumers must educate themselves on
  - the regulated standards of care
  - how their adviser is paid
  - understand what their adviser's certification means in terms of supervision, required training and testing
- This will require a significant time investment and personal motivation on the part of everyday consumers to follow
- Is this too much to expect?