

# Would You Sell Your Mother's Data?

## Personal Data Disclosure in a Simulated Credit Card Application

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## Background

- Lenders assess risk of applicants defaulting
- Personal data collected and fed to credit scoring algorithms
- Credit scoring is not perfect
- Lenders want to improve credit scoring accuracy
- One way is to collect and use different data items
  - E.g. bill and tax payments, employer recommendations, social relationships

# Hypotheses

- H1:** Proportion of participants disclosing each data item correlates with the **sensitivity** of the data items
- H2:** Participants will disclose more data when a **reason** for the data request is given, compared to when no reason is given
- H3:** **Privacy fundamentalists** will disclose less data than privacy unconcerned or privacy pragmatists

## Study 1 - Survey

- 285 participants - UK nat. rep. sample
- 53 items potentially relevant for creditworthiness
  - “internet payment history”
  - “insurance claims”
  - “list of friends from your social networking sites”
- 5-point comfort scale
  - To what extent are you comfortable disclosing this item to a lender?

## Study 1 - Results

- Least comfortable disclosing:
  - Friends' profiles from social network sites
  - List of friends from social networking sites
  - Your mobile phone contact list
  - Names, addresses and phone numbers of friends
- Most comfortable disclosing:
  - Highest level of education
  - Council tax, TV license, electricity, and gas payment history

## Study 2 - Experiment

- 48 participants
  - average age: 20 years old
  - 1 non-student
- Test the acceptability of application process for a new “Super Credit Card”
- Can only be offered to very reliable people
- Novel financial responsibility assessment process
- Participants told that data would be validated

# Study 2 - Experiment Items

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## Items

1. Full name
  2. Gender
  3. Date of birth
  4. Current Home Address
  5. Mobile phone number
  6. Home phone number
  7. Nationality
  8. Employment status
  9. Have you had a credit card before?
  10. What is the name of your bank?
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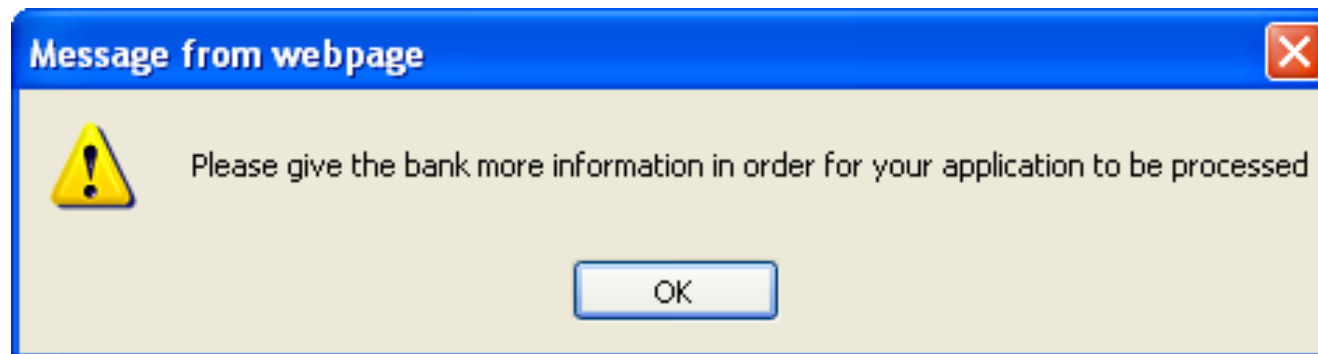
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## Items

1. Did any of your loved ones die while you were growing up? Please give their relation to you (e.g. mother, brother, friend, etc.)
  2. Do you suffer from any medical conditions? Please list...
  3. Did you live with both your mother and father while you were growing up?
  4. Could you list the names and either phone numbers or email addresses of three of your closest friends?
  5. Do you give us permission to contact your local council to get a copy of your council tax payment history?
  6. Do you give us permission to obtain a copy of your TV licence payment history?
  7. Do you give us permission to obtain a copy of your gas or electricity payment history?
  8. Please provide the name and address (or other contact details) of a previous employer so that we can request a copy of the last recommendation from him / her about you...
  9. What is the job of your partner / spouse? Please describe...
  10. What are the names of 3 people that you are friends with on a social networking site (facebook, twitter) whose profiles you would be happy share with us? Please list...
  11. What are the names of 3 people that you are friends with on a professional networking site (LinkedIn, Orkut) whose profiles you would be happy share with us? Please list...
  12. Will you allow us to measure the typical number and length of messages between you and your friends on social networking sites?
  13. What is the length of the longest relationship you have had with a partner / spouse? (years/ months/ weeks)
  14. May we obtain a copy of your insurance claims (e.g. car, house)?
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## Study 2 - Experiment

Form completion:  80%





## Study 2 - Experiment

- £5 (approx. \$8) regardless of submission
- £50 (approx. \$80) for most creditworthy participant
  - real trade-off between disclosing personal data and obtaining economic benefit
- Study conducted “double-blind”
  - Experimenters told the same story as participants
  - Prevent bias

## Study 2 - Experiment

- Explanations provided for questions vs. no explanations
  - Q: *“Did any of your loved ones die while you were growing up?”*
  - E: *“We need this information to help judge how your early experiences might shape your behavior as an adult – early loss has been related to later financial behavior.”*
- Normal order vs. reverse order
- Westin’s privacy segmentation
- Follow-up interview

## Study 2 - Results

### Response Rates

- 28 (58.3%) participants submitted the form
- 99% average response rate for Basic items
- 85% average response rate for Novel items

## Study 2 - Results

- H1: Proportion of participants disclosing each data item correlates with the sensitivity of the data items**
- % participants who answered an item **correlates** with the sensitivity of that item  $\rho = 0.624, p < 0.01$ .

## Study 2 - Results

- H2: Participants will disclose more data when a reason for the data request is given, compared to when no reason is given**
- **No association** between explanations and
    - whether participants submitted the form
    - number of questions answered
    - whether participants answered a particular question

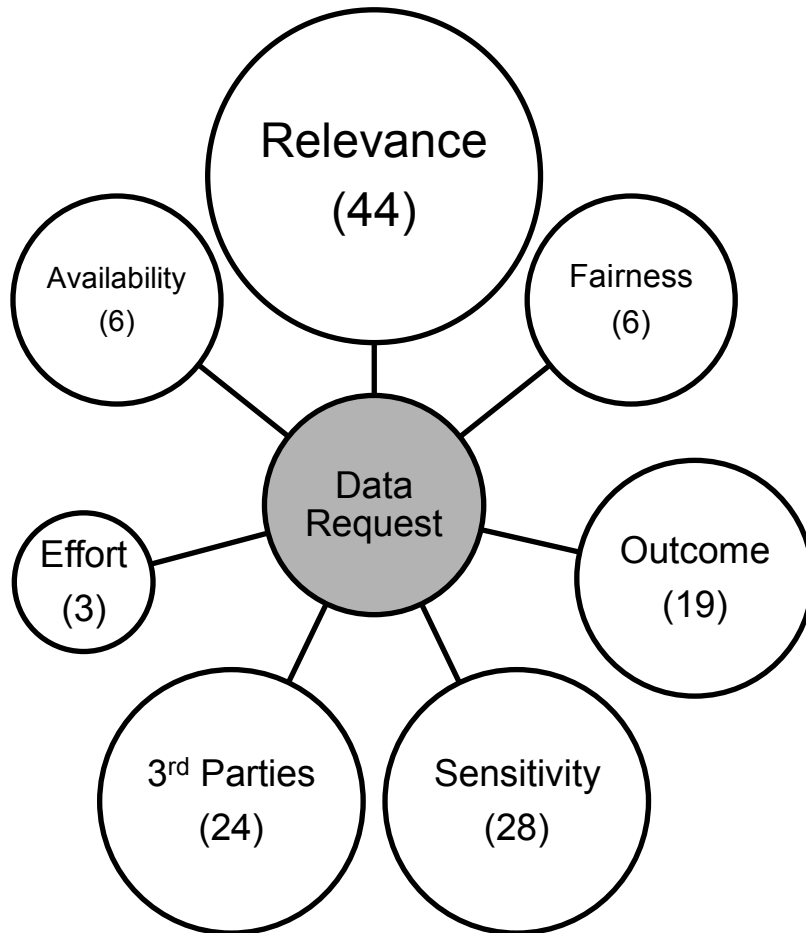
## Study 2 - Results

**H3: Privacy fundamentalists will disclose less data than privacy unconcerned or privacy pragmatists**

- **Significant association** between (not) being *privacy fundamentalist* and (not) submitting form  
 $\chi^2(1) = 4.39, p < 0.05$
- *Non-fundamentalists* **5.6 times** more likely to submit form

# Study 2 - Results

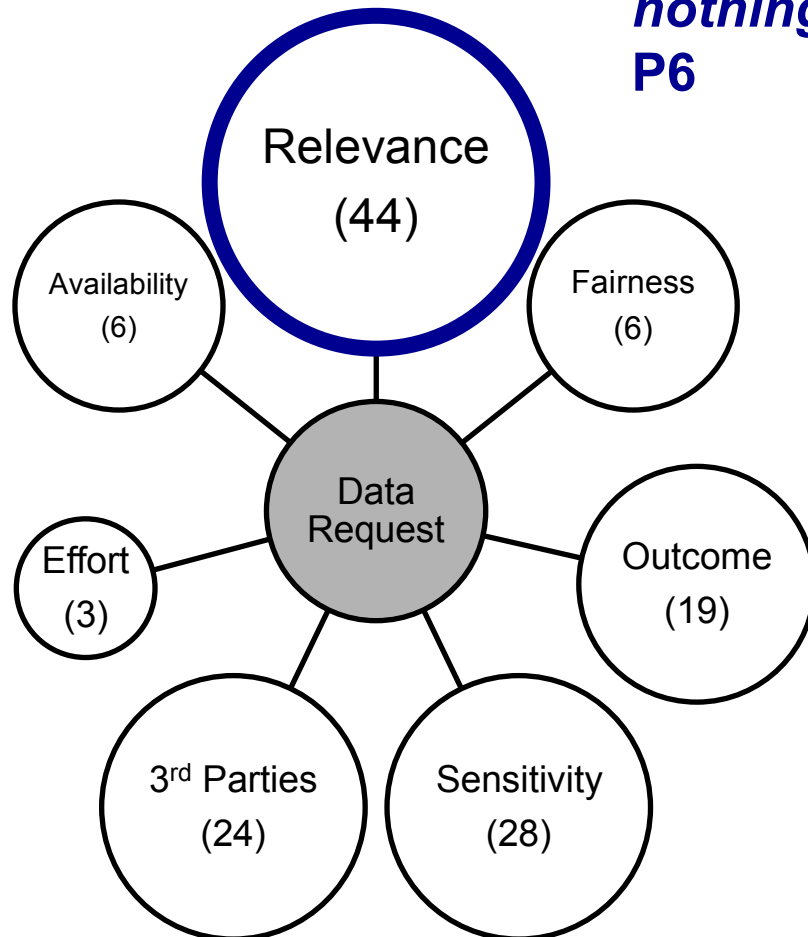
## Interviews



# Study 2 - Results

## Interviews

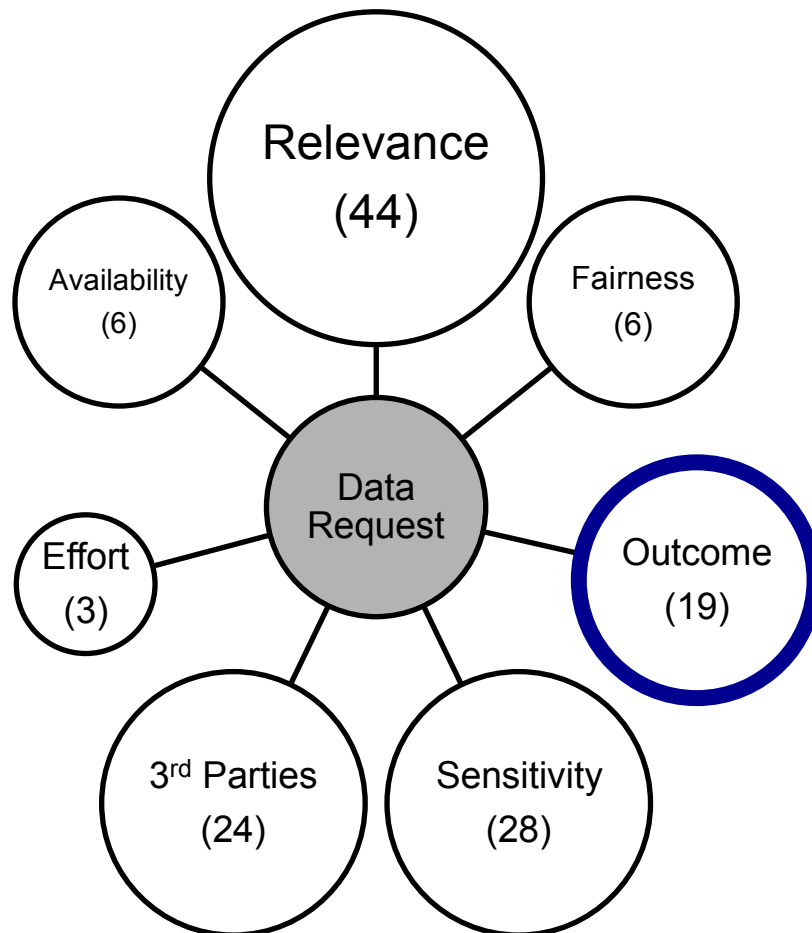
*“I don’t think it’s acceptable, it’s got nothing to do with my credit status”*  
**P6**





# Study 2 - Results

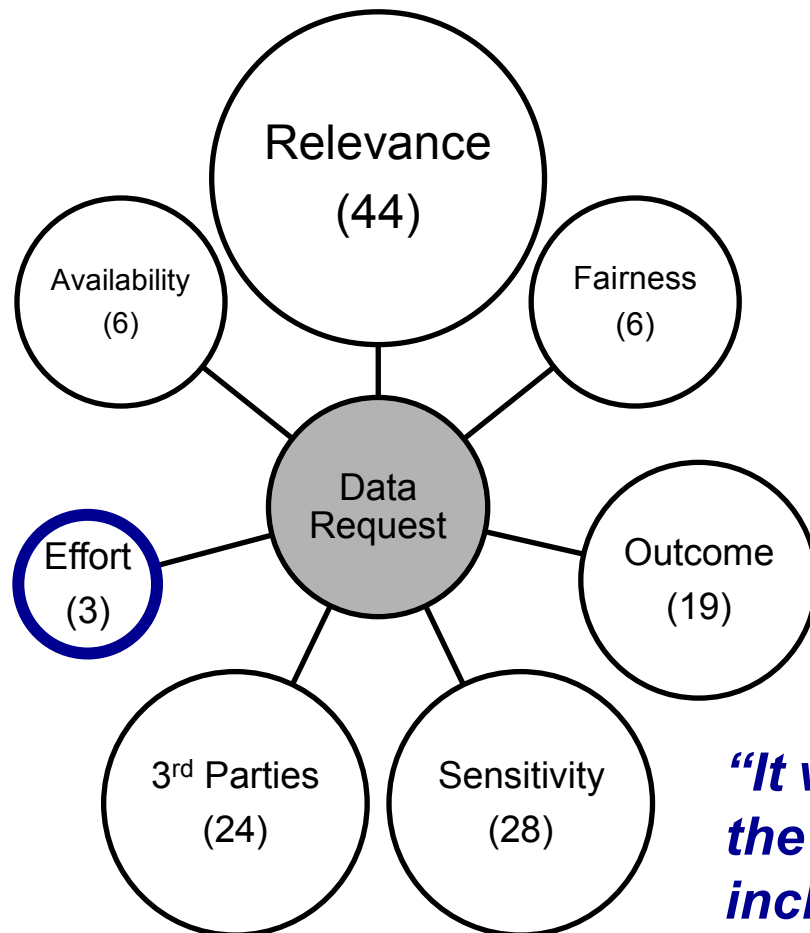
## Interviews



***“I know that because I have medical conditions it could be used to discriminate against me.”***  
**P40**

# Study 2 - Results

## Interviews



***“It would be difficult to get hold of the information, so again I was less inclined to provide it.” P30***

## Study 2 - Results

### Acceptability vs. Disclosure

- Association between participants finding an item acceptable and disclosing it was only significant for 3 questions
- Reasons given for discrepancy:
  - on reflection, they did not mind disclosing the data (14)
  - generally unacceptable, but ok in their case (10)
  - wanted to complete form (5)

# Conclusions

- More sensitive items more likely to be withheld
- Providing justification for question may not help
- Acceptability and disclosure not related
- Use of indices of social capital as signs of creditworthiness may currently not be acceptable
- Items such as TV license and council tax payment history could be used for credit scoring when applicants have “thin” credit histories.