ADDRESSING EMPIRICAL CHALLENGES RELATED TO THE INCENTIVE COMPATIBILITY OF STATED PREFERENCE METHODS

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Stated preference methods

- Used to determine public's preferences, especially towards non-market goods
- Important for effective allocation and management of resources
- Survey-based – in specially designed surveys respondents state what they would do.
- A flexible method – it enables valuation of hypothetical states.

A crucial question:

Do people answer truthfully in stated preference surveys?

Conditions for incentive compatibility

(Carson and Groves, 2007)

Incentive compatibility = Revealing true preferences is the respondent's optimal strategy.

1. Respondents understand and answer the question being asked.
2. The survey is seen as a take-it-or-leave-it offer.
3. The survey format is a single binary question with a "status quo" option (the Gibbard-Satterthwaite theorem).
4. The payment mechanism is coercive.
5. Respondents believe that every response in favour of the proposed policy increases chances of its implementation (policy consequentiality).

EXISTING EVIDENCE ON

the role of consequentiality for stated preferences

- Studies that exogenously vary **communicated consequentiality** (defined by a researcher)
  - Manipulate the probability of a voting being binding (Carson, Groves and List, 2014; Cummings and Taylor, 1998; Landry and List, 2007)
  - Assign various weights to respondents' votes in determining the final action (Vossler and Evans, 2009)

  A consequential context fosters truthful preference revelation.

- Studies that control respondents' beliefs in policy consequentiality (**stated consequentiality**)
  - Measured through respondents' self-reports to a direct question, e.g., „Do you believe that your votes will be taken into account by policy makers?"
  - Response scale:
    - Binary – yes/no (Broadbent, 2012)
    - Likert scale (Herriges et al., 2010; Vossler et al., 2012; Vossler et al., 2013)

  Respondents believing in the survey's consequentiality answer truthfully.

Our research questions

1) How to **design survey scripts** to induce respondents to believe in consequentiality?

   "The effect of consequentiality scripts in stated preference surveys is in its infancy." (Kling, Phaneuf and Zhao, 2012)

2) How to appropriately include measures of unobservable beliefs about consequentiality in **econometric models** of stated preferences?

   We propose a Hybrid Mixed Logit model – a comprehensive framework:
   - to identify effects of unobservable beliefs on stated preferences,
   - whilst incorporating observable measures of these beliefs.

Study design

- Discrete Choice Experiment; CAWI; A representative sample of 1,700 citizens of Warsaw
- Hypothetical scenario: Cheap tickets to municipal theatres in Warsaw, Poland

	Alternative A	**Alternative B** Continuation of the current policy	**Attribute levels**
Entertainment theatres	No change	No change	Tickets for 5 PLN, No change
Drama repertory theatres	Tickets for 5 PLN	No change	
Children's theatres	No change	No change	
Experimental theatres	Tickets for 5 PLN	No change	
Annual cost for you (tax)	100 PLN	0 PLN	10, 20, 50, 100 PLN
Your choice	□	□	

- 12 choice tasks per respondent
- Design optimised for Bayesian D-efficiency

Study design

- Stated consequentiality
  - A follow-up question: "Do you think that your choices in the survey will influence future decisions regarding financing municipal theatres in Warsaw?"
  - Five-degree Likert scale (1 – definitely no, …, 5 – definitely yes)

- Communicated consequentiality
  - Exposition of actual consequences following from the survey
  - 4 treatments (split-sample):

    1 –> **no particular information** about future consequences

    2 –> **at the beginning** the survey states that the respondents' choices might influence future policies

    3 –> Treatment 2 + **reminders in two more places** about possible ties to actual policy

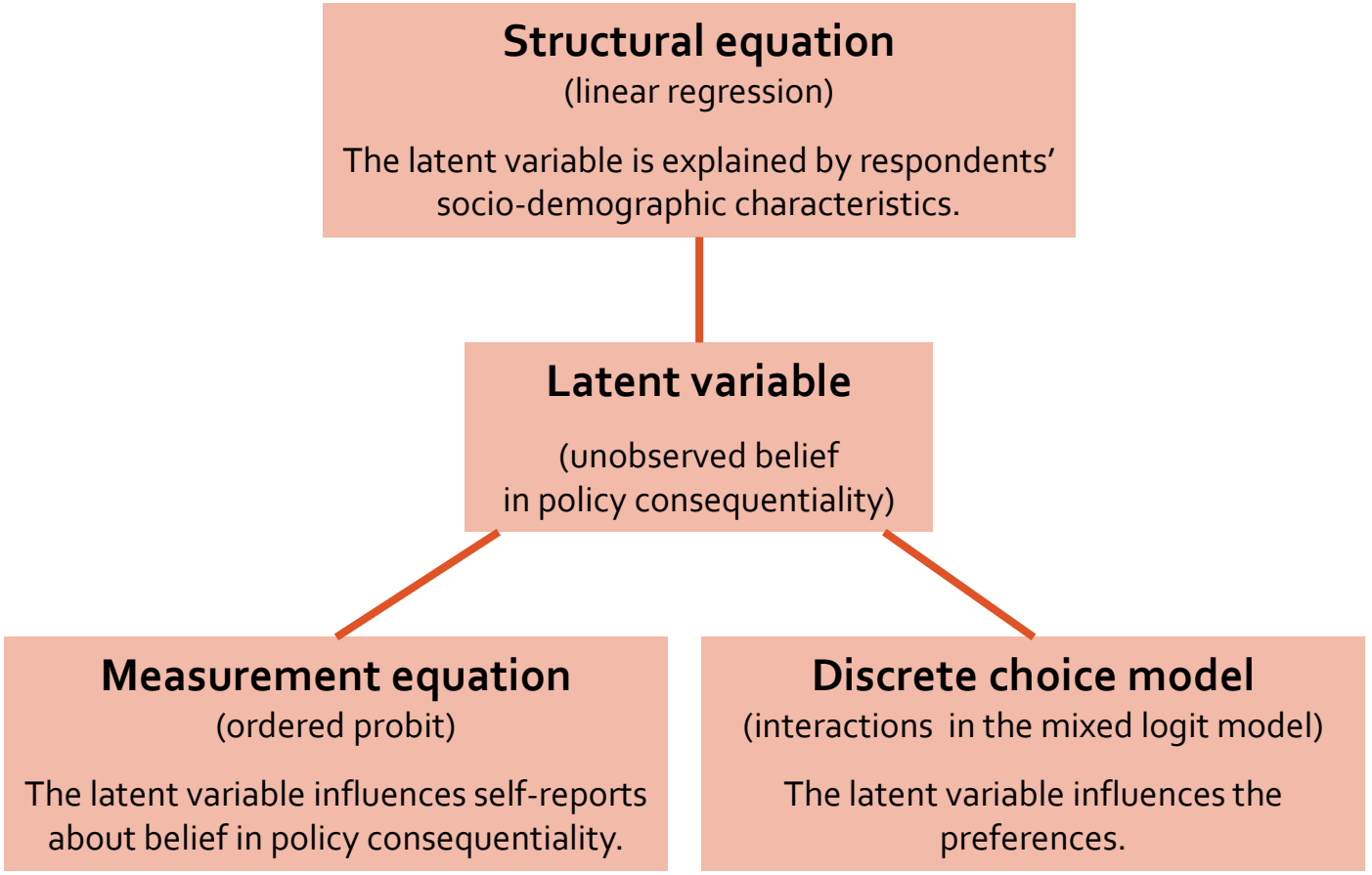
    4 –> Treatment 3 + **a highlighted reminder** about potential actual consequences right before choice tasks

Typical for valuation surveys

Econometric approach

Hybrid Choice Model

- Incorporate **perceptions**, psychological factors into the random utility model
- **Avoid endogeneity**
- Enable to **model explicitly** the effect of an experimental condition on respondents' perceptions, and the effect of the perceptions on their (observed) choices
- A psychological factor – beliefs about policy consequentiality



Measurement equation

Dependent variable:
Indicator of the belief in consequentiality (self-reported)

Latent variable	**0.1756*** [0.0361]**
Communicated consequentiality	**-0.0280 [0.0268]**
Threshold 1	-1.6178*** [0.0512]
Threshold 2	-0.7368*** [0.041]
Threshold 3	0.6210*** [0.0448]
Threshold 4	1.5962*** [0.0546]

*** - Significance at the 1% level.
Standard errors are given in brackets.

- Latent beliefs in consequentiality are positively correlated with self-reported measures of the beliefs.
- No significant relationship between stated and communicated consequentiality (the chi-square test shows no significant relationship).

Structural equation

Dependent variable:
Belief in consequentiality (latent variable, LV)

Female	0.2992***
	[0.0615]
Age	-0.0037**
	[0.0019]
High school degree	0.1531*
	[0.0896]
University degree	-0.0300
	[0.0896]
Household income	0.1272***
	[0.0312]
Children	0.0142
	[0.0442]

***, **, * - Significance at the 1% , 5% and 10% level, respectively.
Standard errors are given in brackets.

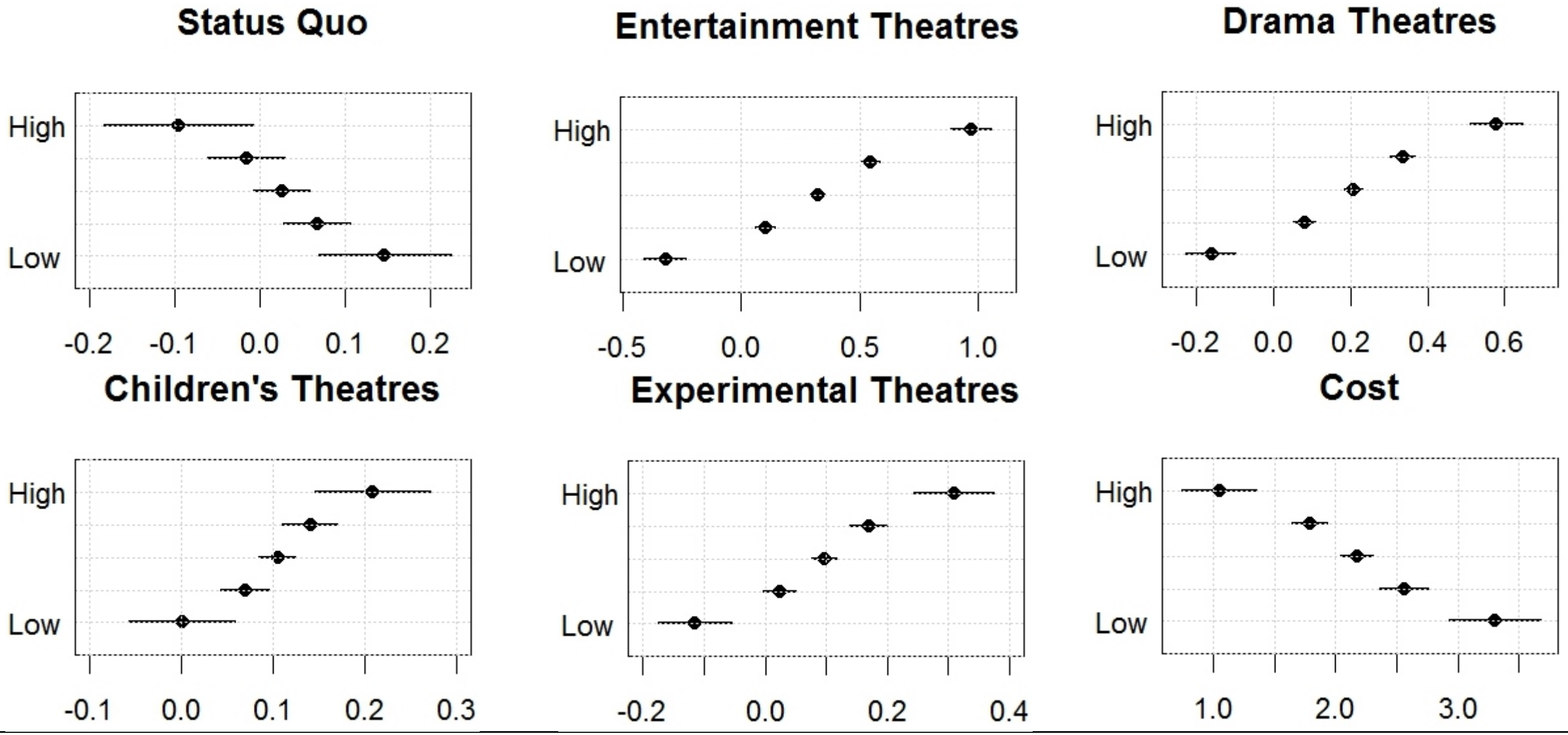
Individual socio-demographic characteristics influence latent beliefs in consequentiality.

Discrete Choice Experiment (WTP-space, in 100 PLN)

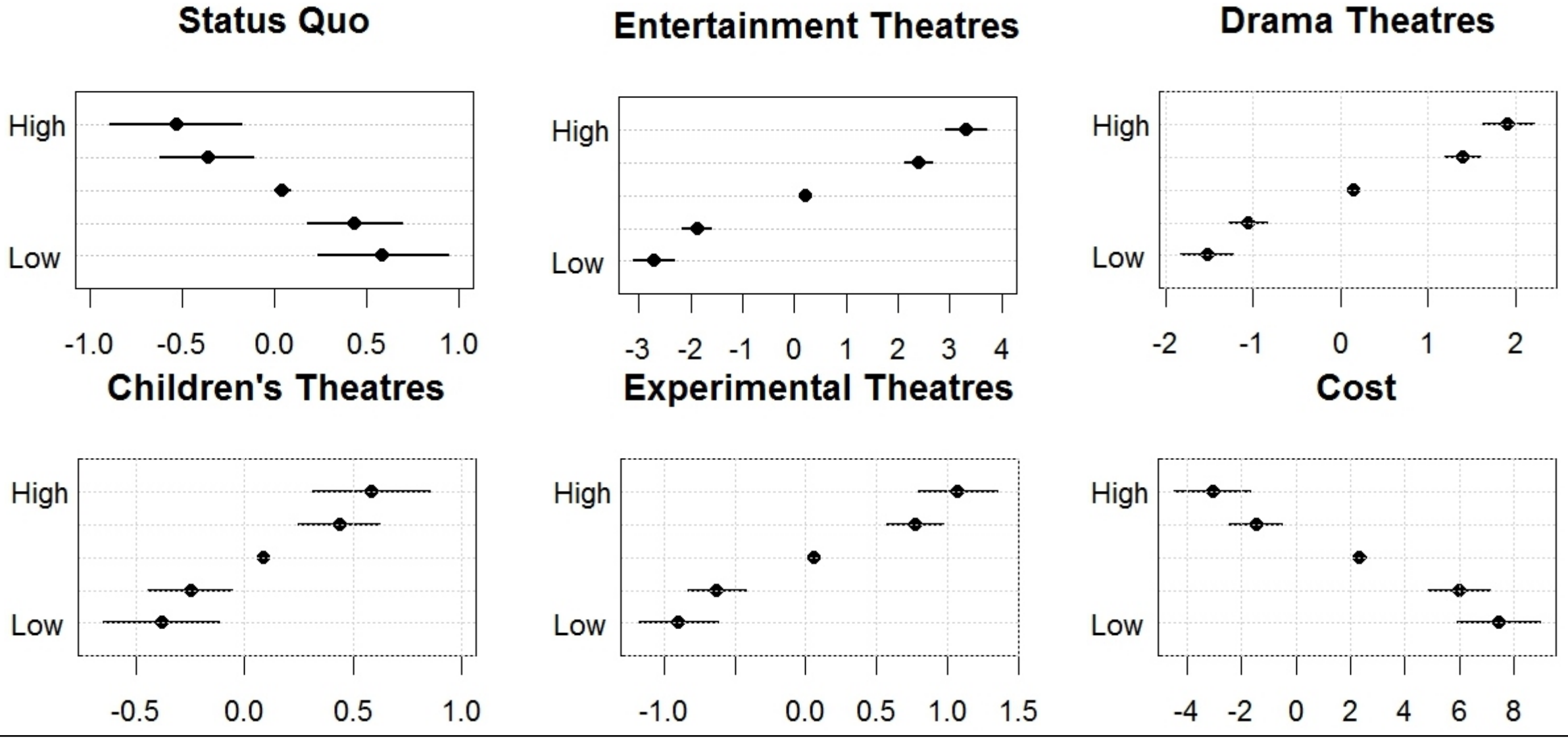
	Means	St. Dev.	Interactions with LV	Interactions with treatment
Status Quo	0.0255 [0.0164]	0.4377*** [0.0151]	-0.0615*** [0.0194]	0.0105 [0.0142]
Entertainment theatres	0.3256*** [0.0127]	0.0549 [0.0435]	0.3292*** [0.0183]	0.0397*** [0.0119]
Drama repertory theatres	0.2089*** [0.0103]	0.1163*** [0.0161]	0.1882*** [0.0149]	0.0348*** [0.0100]
Children's theatres	0.1051*** [0.0097]	0.1539*** [0.0127]	0.0529*** [0.0146]	0.0048 [0.0095]
Experimental theatres	0.0974*** [0.0096]	0.1609*** [0.0127]	0.1078*** [0.0149]	-0.0012 [0.0091]
Cost	2.1776*** [0.0670]	1.0708*** [0.0702]	-0.5728*** [0.0783]	-0.1678*** [0.0453]

*** - Significance at the 1% level.
Standard errors are given in brackets.

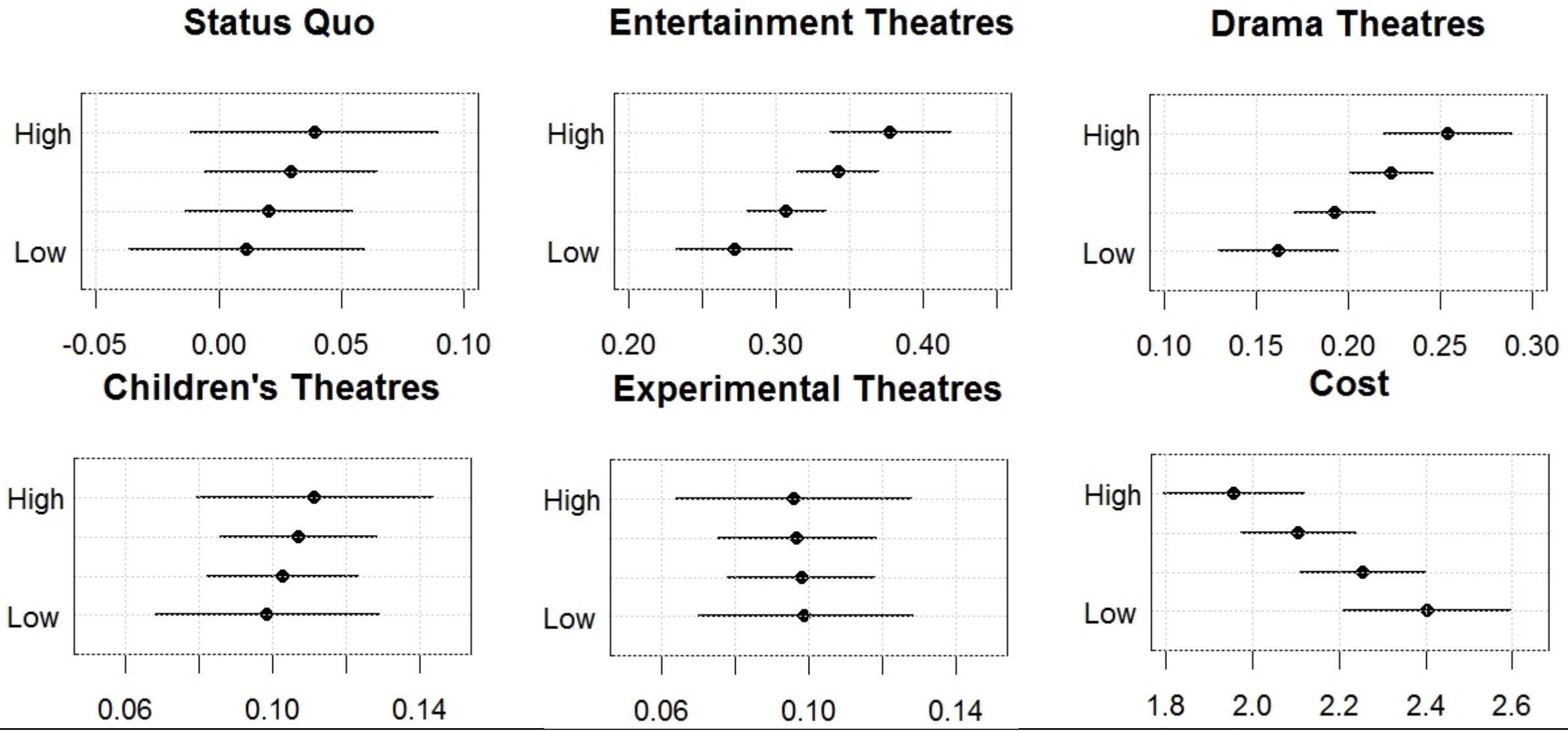
Influence of latent beliefs on WTP



Influence of stated consequentiality on WTP



Influence of communicated consequentiality on WTP



Conclusions

- Latent beliefs about consequentiality have a significant effect on WTP.
- Communicated consequentiality significantly influences WTP.

The importance of the theoretical assumption on policy consequentiality is empirically confirmed.

- Communicated consequentiality has no significant effect on stated consequentiality
  - Need to develop other / more precise follow-up questions?
  - Need to develop more convincing consequentiality scripts?
- Overall, we propose the econometric framework for the analysis of links between:
  - stated consequentiality,
  - communicated consequentiality,
  - respondents' preferences,
  - their socio-demographic characteristics.

Thank you

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