



Expectations-based reference dependence and consumer demand for fish food safety certification: Experimental evidence from Nigeria

Kelvin Mashisia Shikuku¹, Erwin Bulte², Carl Johan Lagerkvist³, Nhuong Tran¹

¹WorldFish; ²Wageningen University; ³Swedish University of Agricultural Sciences

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Introduction

- Minimizing potential health hazards within food-producing sectors is crucial for human nutrition security.
- Low-and-middle-income countries in South Asia, and sub-Saharan Africa account for the largest share of FBD-related deaths (Jaffee et al., 2019).
- Interventions targeted to these regions are required for reduced vulnerability to FDBs.
- Certification for food safety is one such promising intervention (Hoffmann et al., 2019).
- However, consumers' demand for food safety certification in developing countries domestic markets is not well known.

Objectives

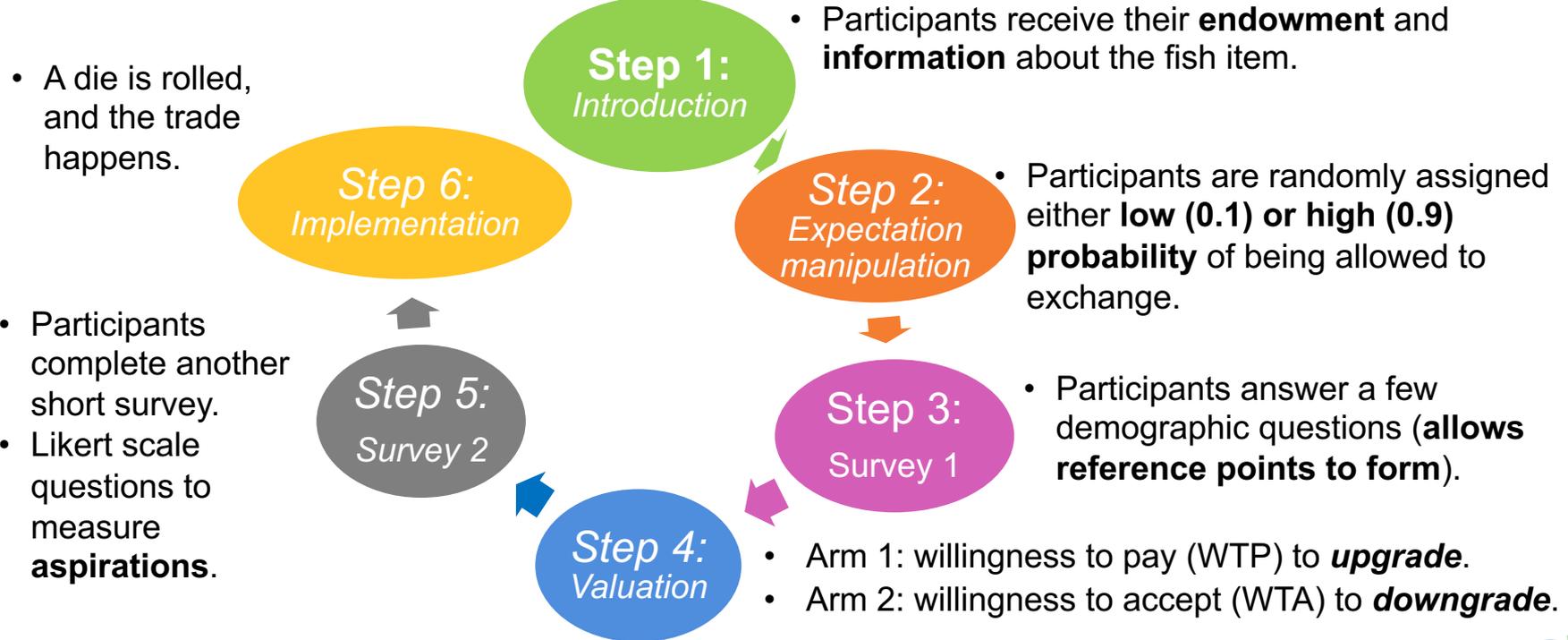
- Assess the effect of endowments as reference points on consumer valuation of fish food safety certification.
- Assess the effect of expectations on consumer valuation of fish food safety certification.

Experiment design: randomization

- We implement a factorial design in Nigeria's fish markets.

	<i>LOW</i> <i>PROBABILITY of</i> <i>being allowed to</i> <i>trade (0.1)</i>	<i>HIGH</i> <i>PROBABILITY</i> <i>of being allowed</i> <i>to trade (0.9)</i>
<i>Participants received 500g of</i> <i>UNCERTIFIED live catfish (Arm 1)</i>	Group 1 (N ₁ =111)	Group 2 (N ₂ =89)
<i>Participants received 500g of</i> <i>CERTIFIED fish (Arm 2)</i>	Group 3 (N ₃ =105)	Group 4 (N ₄ =95)

Experiment design: 6 steps



The experiment in practice



FOR CARD H

These balls represent chance of being able to exchange or chance of not being able to exchange [white ball (chance of being able to exchange) and a black ball (no chance of being able to exchange)].

Chance of being able to exchange	<input type="radio"/>	<input checked="" type="radio"/>	No chance of being able to exchange
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Your CARD H means that your chance of being able to exchange the non-certified fish for the certified fish, if you would be willing to do so, is like this.

Balls combination	<input type="radio"/> <input checked="" type="radio"/>
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FOR CARD L

These balls represent chance of being able to exchange or chance of not being able to exchange [white ball (chance of being able to exchange) and a black ball (no chance of being able to exchange)].

Chance of being able to exchange	<input type="radio"/>	<input checked="" type="radio"/>	No chance of being able to exchange
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Your CARD L means that your chance of being able to exchange the non-certified fish for the certified fish, if you would be willing to do so, is like this:

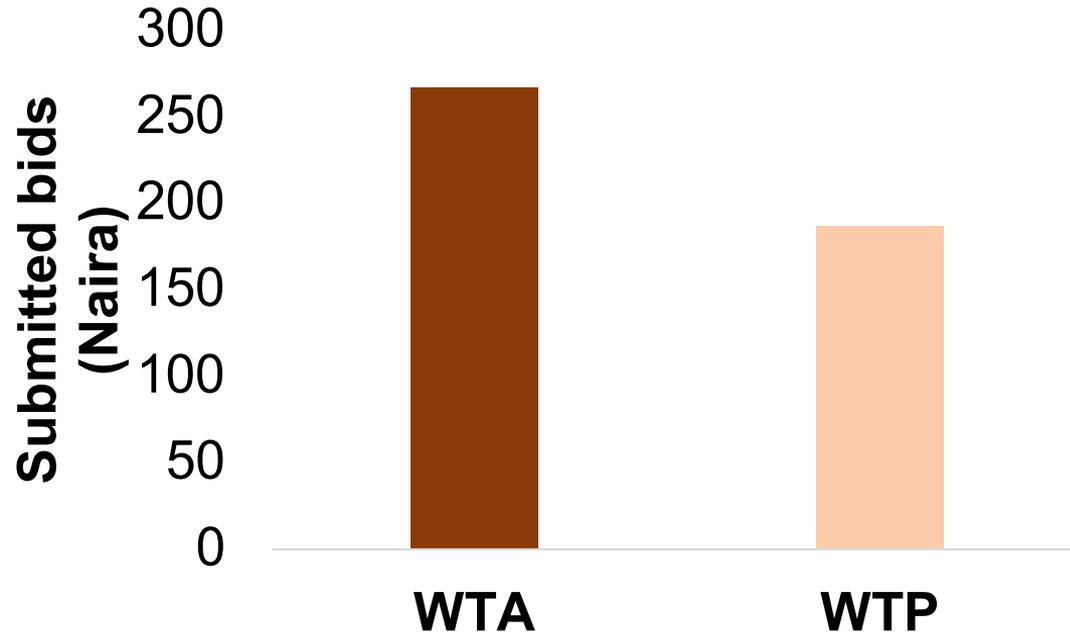
Balls combination	<input type="radio"/> <input checked="" type="radio"/>
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Empirical model

$$y_i = \alpha + \beta \text{Certify}_i + \gamma \text{Trade}_i + \theta \text{Trade}_i \text{Certify}_i + \delta_i \mathbf{x}_i + \mathbf{C}_c + \epsilon_i$$

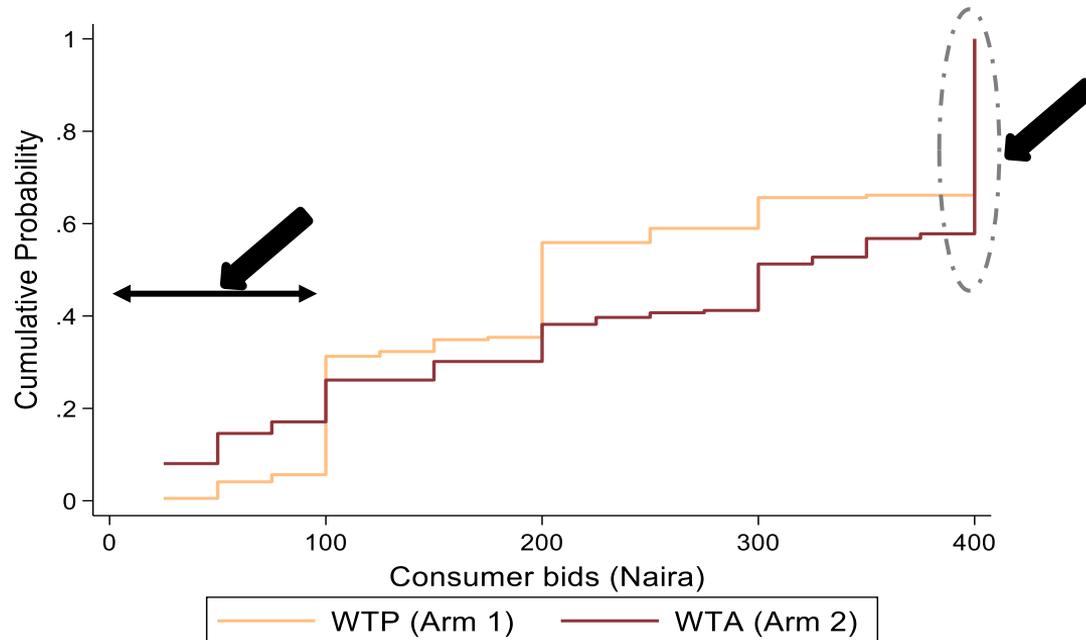
- β captures the effect of endowments.
- γ captures the effect of expectations for subjects from Arm 1.
- $\gamma + \theta$ captures the effect of expectations for subjects from Arm 2.
- We expect:
 - $\beta > 0$
 - $\gamma > 0$
 - $\theta < 0$

Results: Consumers anchor on their endowment of food safety certified fish



- WTA is 43% higher than WTP
- Consumers demand higher compensation to give up certified fish.

Results: Reverse endowment effect is possible



Results: Endowments, expectations, and valuation

Variable	Dependent variable: natural log of consumer bids			
	OLS (1)	Tobit (2)	OLS (3)	Tobit (4)
<i>Certify</i>	1.06^{***} (0.16)	0.90^{***} (0.23)	1.24^{***} (0.22)	1.07^{***} (0.26)
<i>Trade</i>	-	-	0.45[*] (0.24)	0.41[*] (0.22)
<i>Certify x Trade</i>	-	-	-0.44 (0.27)	-0.39 (0.30)
Market fixed effects	Yes	Yes	Yes	Yes
Additional controls	Yes	Yes	Yes	Yes
Constant	4.22 ^{***} (0.38)	4.31 ^{***} (0.51)	4.02 ^{***} (0.41)	4.13 ^{***} (0.52)
R-squared	0.19	0.06	0.20	0.06
Observations	394	394	394	394

Results: Consumer perceptions

	Disagree	Unsure	Agree
Arm 1: WTP (N=195)			
Since the beginning of the session, I have spent some time thinking about how I would use the certified fish;	8.0	10	82
Since the beginning of the session, I have spent some time thinking about how I would use the uncertified fish;	20	13	67
Since the beginning of the session, I have spent more time thinking about the uncertified fish than about the certified fish.	45	20	35
Arm 2: WTA (N=199)			
Since the beginning of the session, I have spent some time thinking about how I would use the certified fish;	14	3	83
Since the beginning of the session, I have spent some time thinking about how I would use the uncertified fish;	76	4	20
Since the beginning of the session, I have spent more time thinking about the uncertified fish than about the certified fish.	78	7	15

Conclusions

- Consumers are not only willing to upgrade from uncertified to certified fish, but they are also unwilling to abandon the certified fish once adopted.
- Increasing availability of safety-certified fish in the domestic market would reduce uncertainty in the supply of such products hence enhancing the likelihood of a consumer being able to purchase when needed.



Thank You



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