

## Farmers' Intention to Adopt Agronomic Biofortification: The Case of Iodine Biofortified Vegetables in Uganda

Table S1: Constructs used in the study

Constructs and statements used in the study	Operational definition
<b>Attitude</b>	
ATT1: Applying iodine fertilizer to my vegetable garden would improve the nutrition of my family members	The farmer's positive or negative evaluation of agronomic iodine biofortification
ATT2: I consider the application of iodine fertilizers to vegetables to be unethical (R)	
ATT3: Applying iodine fertilizers to my vegetable garden would contribute to increased yield	
ATT4: Applying iodine fertilizers to vegetables would be expensive (R)	
ATT5: Applying iodine fertilizers to cabbage would be a safe	
<b>Subjective norms</b>	
SN1: My family members would support that I apply iodine fertilizers to my vegetable garden	Farmers' belief that significant others can influence their perception regarding iodine fertilizers
SN2: Most people who buy my vegetables would approve the application of iodine fertilizers	
SN3: Members of my household would disapprove of me applying iodine fertilizers	
SN4: I would apply iodine fertilizers to my vegetable garden even if other farmers in my locality didn't accept to do so	
<b>Perceived behavioral Control</b>	
PBC1: Applying iodine fertilizers may be difficult, even if I wanted (R)	The farmers' belief and confidence that the decision to use iodine fertilizers is under his volitional Control
PBC2: The decision to apply iodine fertilizers to my cabbage is beyond my Control (R)	
PBC3: I am confident that I could apply iodine fertilizers to my vegetable garden if I wanted to	
PBC4: I have adequate skills and knowledge of fertilizer application which would allow me to apply iodine fertilizers to vegetables	
PBC5: The decision to apply iodine fertilizer to my cabbage is entirely up to me	
<b>Perceived susceptibility</b>	
Psus1: The elderly in my family and community are susceptible to IDD	The farmer's subjective perception of their (including family members) risk of acquiring IDD
Psus2: Children are likely to suffer and perform poorly at school because of iodine deficiency	
Psus3: Children are susceptible to IDD	
Psus4: What I eat makes it likely that I could develop IDD	
Psus5: I feel that my chances of getting iodine deficiency disorders in the future are high if I don't eat iodine-rich foods	
<b>Perceived Severity</b>	
Psev1: It is possible that our children are retarded and perform poorly due to iodine deficiency	The farmer's feelings concerning the seriousness of Iodine deficiency
Psev2: I think IDDS is a severe health problem and could lead to long-standing problems	

---

Psev4: If my children suffer from iodine deficiency disorders, it would have a severe, negative influence on their performance at school and at work

Psev5: If I get IDD, it would have a severe negative consequence on my quality of life

**Perceived barriers**

PBar1: Iodine-rich vegetables may be expensive (R)

PBar2: I am afraid that iodine fertilizers will affect the taste of the vegetables (R)

PBar3: I am afraid incorporating iodine-rich vegetables would require starting a new habit, which is difficult for me (R)

**Perceived Benefits**

PBen1: I believe that consuming iodine-rich vegetables will improve the health of my family members and reduce the risk of IDD

PBen2: Consuming iodine-rich cabbage will improve the health and school performance of my children

PBen3: I think that if one does not have good health, they will have nothing.

**Cues to action**

Cues1: Farmers in my community applying iodine fertilizers would make me use it as well

Cues2: The government recommending iodine fertilizers would make me apply it to my vegetable garden if the government

Cues3: Myself or a family member suffering from IDD would make me apply iodine fertilizers to my vegetable garden

The farmers' Beliefs concerning costs or negative aspects of applying iodine fertilizers/consuming iodine-rich vegetables.

The farmer's perception of the advantages of applying iodine fertilizers

Triggers that stimulate the farmer to apply iodine fertilizers

---

*Remark: The statements corresponding to the different construct items were adapted and modified from [1-6].*

Table S2: Predicting farmers' intention to adopt iodine agronomic biofortification

Regression models	Constructs	$\beta$	Wald's $\chi^2$	P (sig)	R <sup>2</sup>
Model 1: TPB	Attitude	0.800	23.739	<.001	0.65
	Subjective norms	-.270	2.585	.108	
	PBC	0.90	67.491	<.001	
Model 2: HBM.	Perceived severity	-.200	.719	.396	0.09
	Perceived susceptibility	.120	.370	.543	
	Perceived benefits	.592	7.941	.005	
	Perceived barriers	-.457	12.235	<.001	
	Cues to action	-.086	.214	.644	
Model 3: TPB + H.B.M.	Attitude	0.750	29.404	<.001	0.70
	Perceived severity	-.029	.022	.882	
	Subjective norms	-.342	3.478	.062	
	Perceived susceptibility	-.412	1.319	.251	
	PBC	0.900	67.887	<.001	
	Perceived benefits	.399	1.266	.261	
	Perceived barriers	-.341	2.403	.121	
Cues to action	-.531	2.874	.090		
Model 4 : Modifying variables	Knowledge	.212	2.977	.084	0.14
	Gender	-.023	.007	.934	
	Crop type (1)	.630	4.979	.026	
	Farm size	.101	4.858	.028	
	Access to extension	.801	11.441	<.001	

## References

1. Abizari, A.R.; Pilime, N.; Armar-Klemesu, M.; Brouwer, I.D. Cowpeas in Northern Ghana and the Factors that Predict Caregivers' Intention to Give Them to Schoolchildren. *PLoS ONE* **2013**, *8*, 1-8. <https://doi.org/10.1371/journal.pone.0072087>.
2. Fanou-Fogny, N.; van Dam, B.; Koreissi, Y.; Dossa, R.A.; Brouwer, I.D. Factors predicting consumption of fonio grain (*Digitaria exilis*) among urban Malian women of reproductive age. *J Nutr Educ Behav* **2011**, *43*, 219-228. <https://doi.org/10.1016/j.jneb.2010.03.008>.
3. Icek, A. From Intentions to Actions: A Theory of Planned Behavior. *Action control* **1985**, 11-39.
4. Icek, A. The Theory of Planned Behavior. *Organizational Behavior and Human decision processes* **1991**, *50*, 179-121.
5. Jones, C.J.; Smith, H.; Llewellyn, C. Evaluating the effectiveness of health belief model interventions in improving adherence: a systematic review. *Health Psychology Review* **2014**, *8*, 253-269. <https://doi.org/10.1080/17437199.2013.802623>.
6. Sun, X.; Guo, Y.; Wang, S.; Sun, J. Predicting Iron-Fortified Soy Sauce Consumption Intention: Application of the Theory of Planned Behavior and Health Belief Model. *Journal of Nutrition Education and Behavior* **2006**, *38*, 276-285. <https://doi.org/10.1016/j.jneb.2006.04.144>.