



Gendered Selection Trait Preferences for Farmed Fish in Egypt

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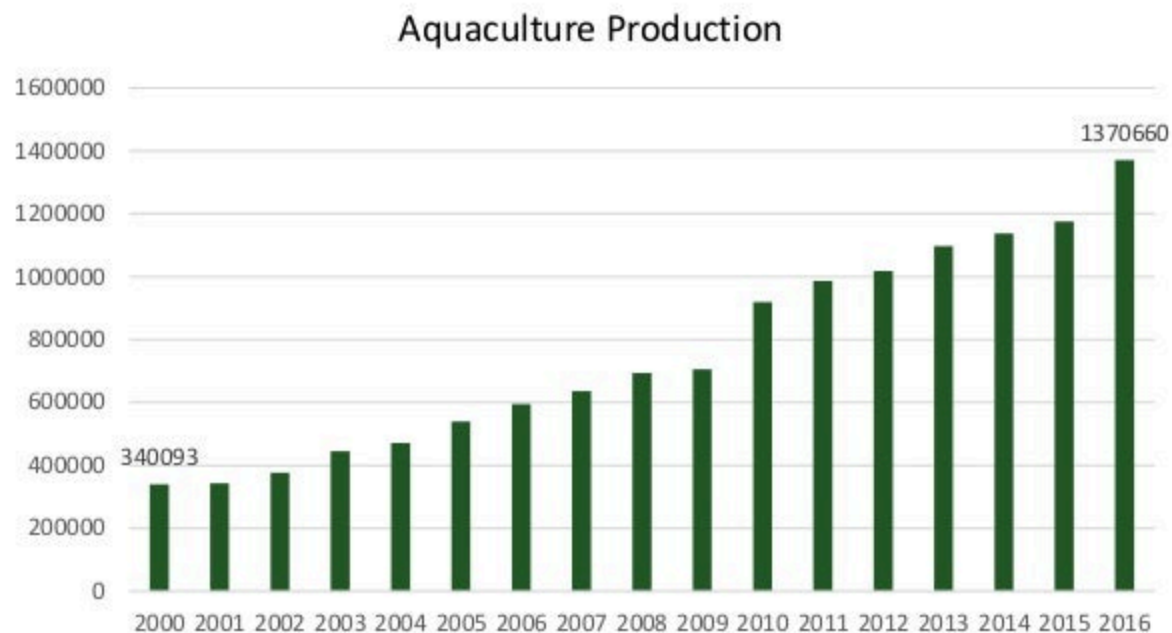
RESEARCH
PROGRAM ON
Fish

In this Presentation

1. Introduction; Tilapia supply & demand
2. Mixed Methods; Tools & sampling
3. Results; Tilapia consumption
4. Results; Tilapia trait preferences
5. Results; Mealtime behaviour
6. Implications & what next?



1.1. National Aquaculture Production



(00–16'; MT; source GAFRD, 2016)

Tilapia

Carp

Mullet

Gilthead

Seabream

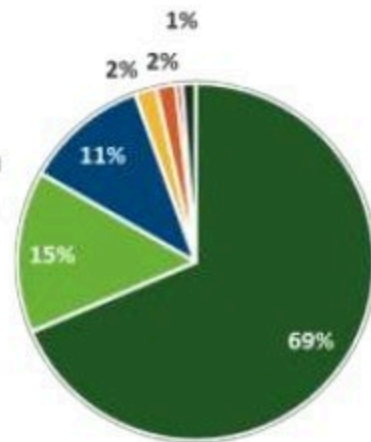
European

Seabass

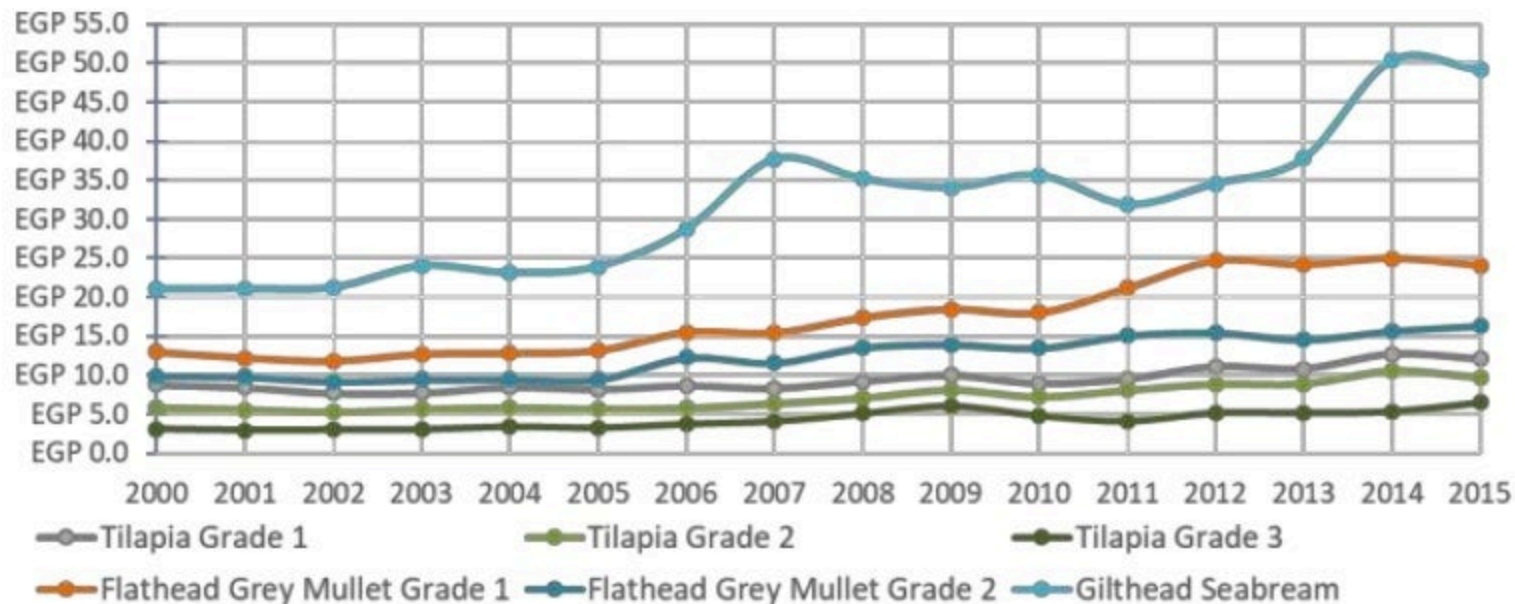
Catfish

Other

Aquaculture
production
(2016/MT)



1.2. Tilapia markets and price trends

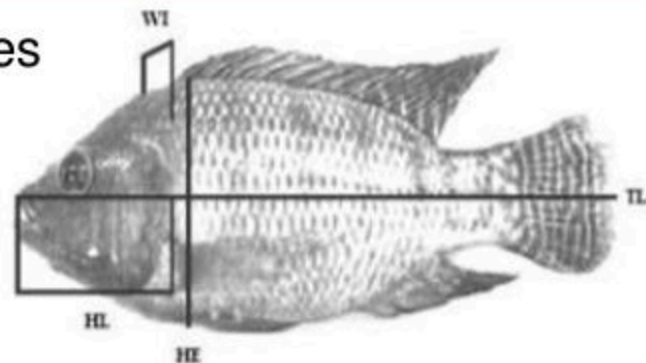


(00–16'; EGP/kg; source el-Obour Auction House)

2.1. Mixed Methods

Q. 11. Please rank your top Tilapia trait preferences

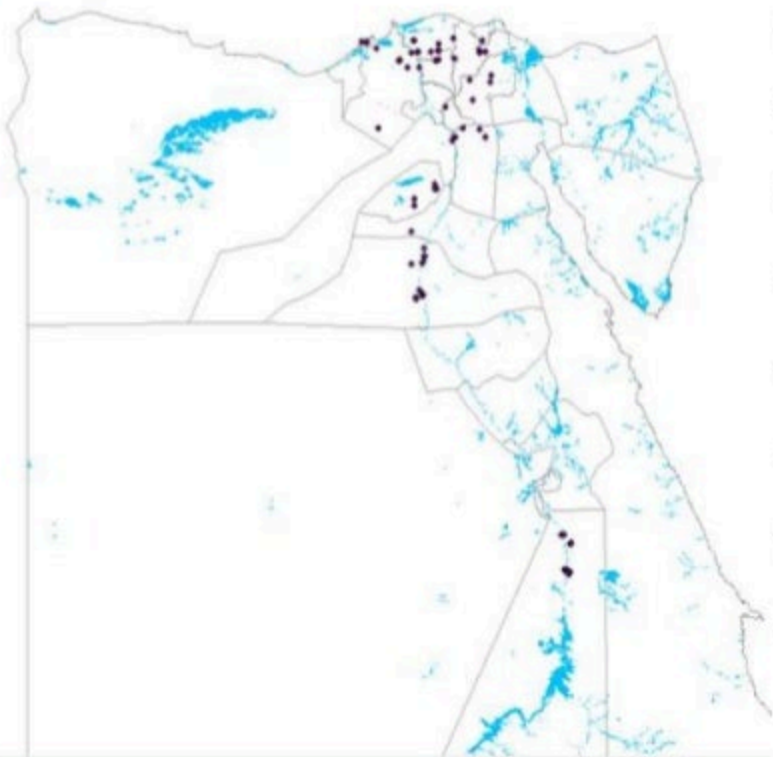
#Top Traits (*10 > *1)	#Top Trait Attributes (*5 > *1)			
	Grade 1	Grade 2	Grade 3	Grade 4
11.1 Size				
11.2 Body Length	Long	Medium	Short	Stumpy
11.3 Body Width	Fat	Medium	Slim	Skinny
11.4 Head Size	Large head	Medium	Small head	Very small
11.6 Tail Size	Large tail	Medium tail	Small tail	Very small tail
11.6 Fillet Ratio	We love bones	We like bones	Bones okay	Dislike bones



TL - total length; HL - head length; HE - height; WI - width



3.1. Results; Sample characteristics



Governorates:

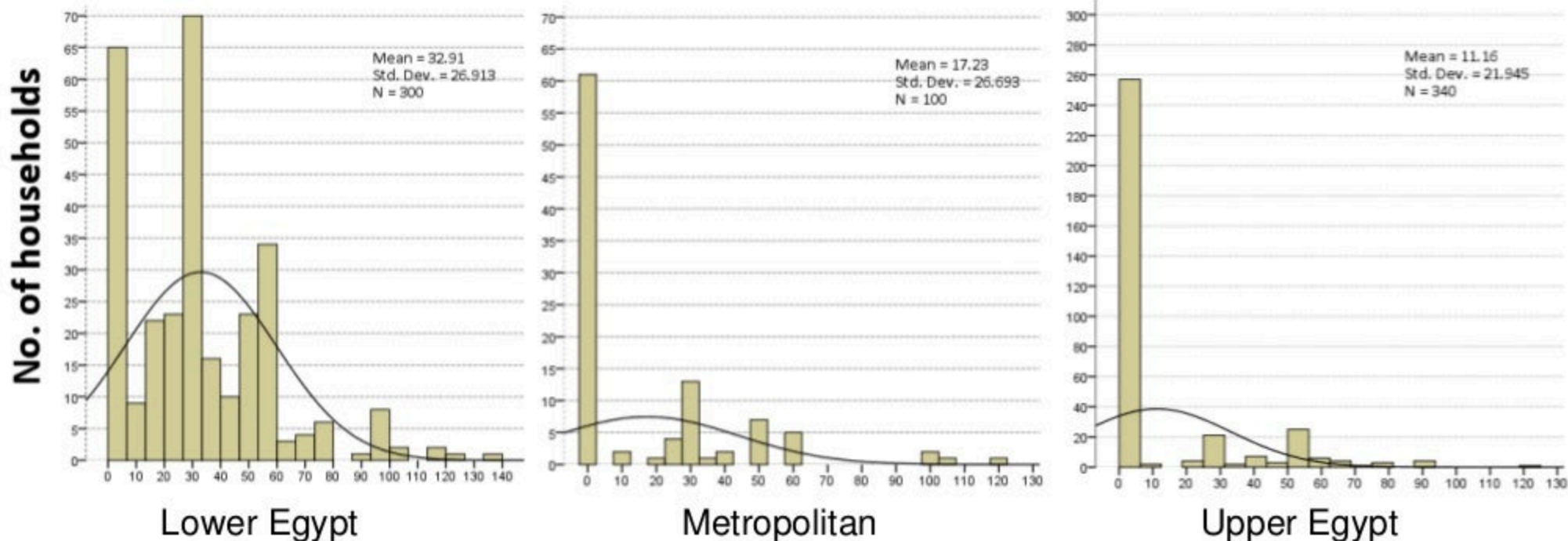
1. Beheira
2. Kafr El-Sheikh
3. Sharqia
4. Cairo
5. Fayoum
6. Menia
7. Aswan

N	739
Education	%
Women with no formal education	31.2%
Women > primary level education	47.6%
Men with no formal education	18.4%
Men > primary level education	58.7%
Employment	
Women with paid employment	5.7%
Men with paid employment	90.3%
Food ration card holders	
HH head receiving support	10.7%
Household size (μ 4.5 \pm 1.51)	
1 – 3	25.1%
4 – 6	63.1%
7 – 11	11.9%
Gender	
Female	474
Male	285

3.2. Results; Weekly fish expenditure by location

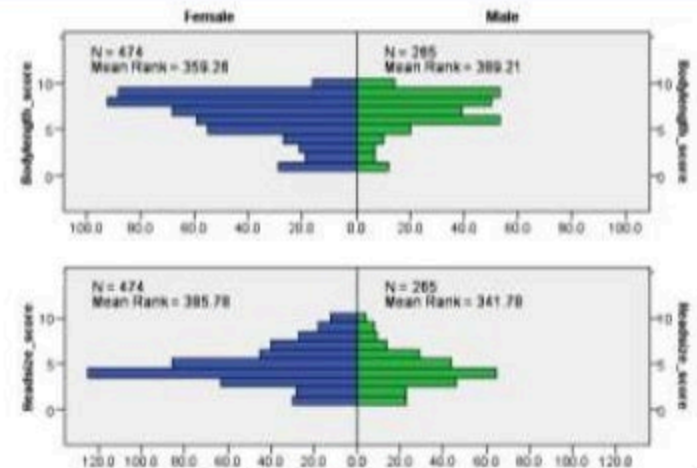
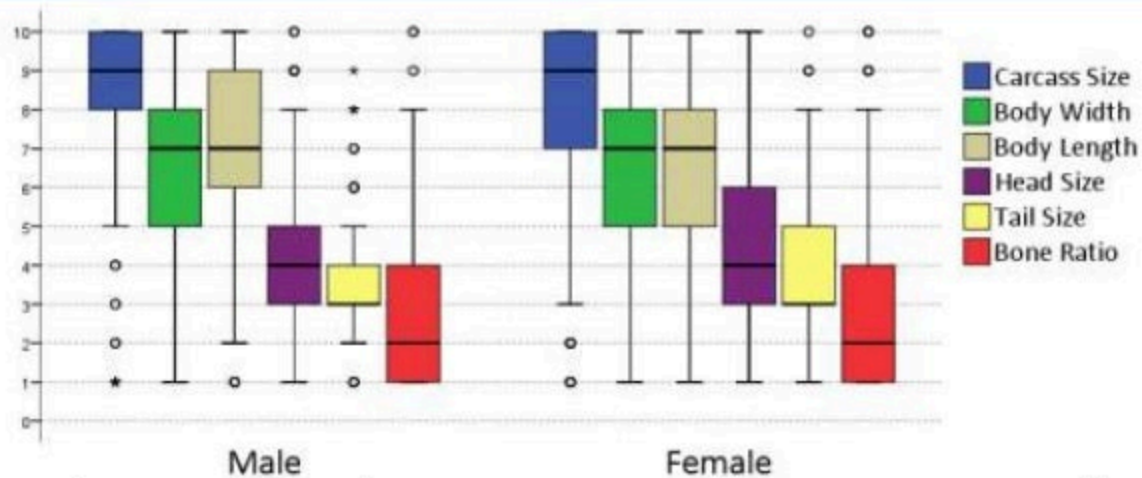
Fish Expenditure during the past 7 days (Kg & EGP)										
	Metro	Lower Egypt				Upper Egypt				Total
	Cairo	Sharkia	Kafr	Beheira	Total	Fayoum	Menia	Aswan	Total	
N	100	100	100	100	300	110	120	120	349	739
% of fish-consuming HHs	39%	83%	82%	70%	75.9%	52.7%	10%	11.8%	24.4%	49.78%
Tilapia	89.7	77.1	86.6	85.7	83.7	74.1	91.7	100	81.4	83.7
Lizardfish	2.6	2.4	4.9	2.9	3.3	24.1	0	0	16.1	9.4
Mackerel	0	3.6	6.1	7.1	6	5.2	0	0	3.4	3.6
Mulletts	5.1	1.2	8.5	1.4	3.2	0	0	0	0	2
Catfish	5.1	0	0	2.9	1.4	1.7	8.3	0	2.5	2.6
Kg bought by fish-consuming HHs:										
Mean qnt bought (kg)	1.6	1.7	1.7	1.3	1.5	1.8	2	2.3	1.9	1.7
Mean monthly food exp.	530.1	530.0	584.5	482.8		577.7	589.7	628.5		562.4
Food exp./Total exp.	45.7%	45.9%	37.7%	37.9%		54.3%	59.9%	56.4%		46.4%

3.3. Results; Weekly fish expenditure by region



Cost of weekly fish purchase (EGP)

4.1. Results; Priority tilapia traits by gender & regions



	Lower Egypt				Metropolitan				Upper Egypt				Total				All/Region
	Female	Male	All	sig.	Female	Male	All	sig.	Female	Male	All	sig.	Female	Male	All	sig.	
N	198	102	300		53	47	100		223	116	339		474	265	739		
Carcass Size	7.77	8.26	7.94		8.49	8.38	8.44		8.33	8.23	8.30		8.12	8.27	8.17		
Body Length	6.22	6.84	6.43	*	6.45	6.85	6.64		6.53	6.68	6.58		6.39	6.77	6.53	*	
Body Width	6.44	6.77	6.55		7.17	6.32	6.77	*	6.47	6.68	6.54		6.53	6.65	6.58		
Head Size	5.42	4.75	5.19	**	4.57	4.04	4.32		4.20	4.04	4.15		4.75	4.31	4.60	**	
Tail Size	3.64	3.71	3.66		3.09	3.34	3.21		3.71	3.49	3.63		3.61	3.55	3.59		
Bone/Fillet Ratio	2.00	1.93	1.98		2.55	2.36	2.46		3.54	3.24	3.44		2.78	2.58	2.71		

Mean values in bold are significantly higher than the corresponding figure for other sex/regions. #Means are significantly different at the 0.05, 0.01 levels for *, **

4.2.1. Methods for scoring trait attributes (*5/24 – f/739)

Q. 11. Please rank your top Tilapia trait preferences

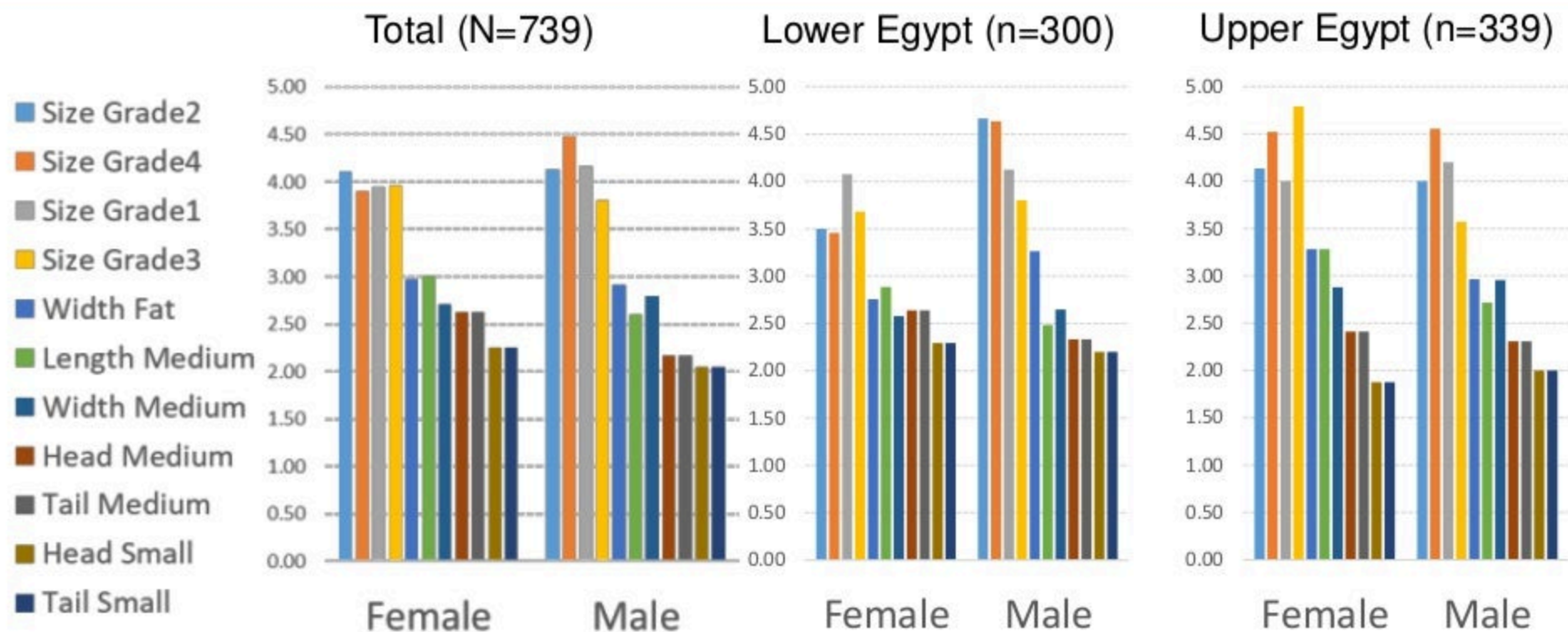
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4.2.2. Results; Trait rankings by gender & region

	Lower Egypt					Metropolitan					Upper Egypt					Total					
	Female	Male	All	sig#	F	Female	Male	All	sig#	F	Female	Male	All	sig#	F	Female	Male	All	sig#	(All/Region)	F
<i>N</i>	198	102	300			53	47	100			223	116	339			474	265	739			
LengthMedium_score	2.88	2.48	2.73		83	2.62	2.50	2.56		41	3.28	2.72	3.02	*	99	3.01	2.60	2.83	**		223
WidthFat_score	2.76	3.26	2.92	*	60	2.70	2.10	2.40		20	3.28	2.96	3.15		66	2.98	2.91	2.95		**	146
WidthMedium_score	2.58	2.65	2.60		43	2.56	2.73	2.63		27	2.88	2.95	2.91		55	2.71	2.80	2.74			125
Grade4_score	3.46	4.64	3.74	*	46	4.25	3.75	4.00		8	4.52	4.56	4.54		41	3.90	4.48	4.11	**	**	95
Grade3_score	3.68	3.80	3.73		40	3.25	4.00	3.59		22	4.79	3.57	4.46	**	26	3.96	3.81	3.91		*	88
HeadMedium_score	2.64	2.33	2.56		48	3.50	1.40	2.33	*	9	2.41	2.31	2.37		30	2.63	2.17	2.47			87
TailMedium_score	2.64	2.33	2.56		48	3.50	1.40	2.33	*	9	2.41	2.31	2.37		30	2.63	2.17	2.47			87
Grade1_score	4.08	4.13	4.10		21	3.50	4.00	3.57		7	4.00	4.20	4.09		33	3.95	4.17	4.03			61
HeadSmall_score	2.29	2.20	2.26		34	3.00	1.75	2.29		7	1.88	2.00	1.93		14	2.26	2.05	2.18			55
TailSmall_score	2.29	2.20	2.26		34	3.00	1.75	2.29		7	1.88	2.00	1.93		14	2.26	2.05	2.18			55
Grade2_score	3.50	4.67	4.20		10	4.33	3.86	4.13		16	4.13	4.00	4.08		25	4.11	4.13	4.12			51

Mean values in bold are significantly higher than the corresponding figure for other sex/regions. #Means are significantly different at the 0.05, 0.01 levels for *, **

4.2.3. Results; Trait preferences by gender & regions

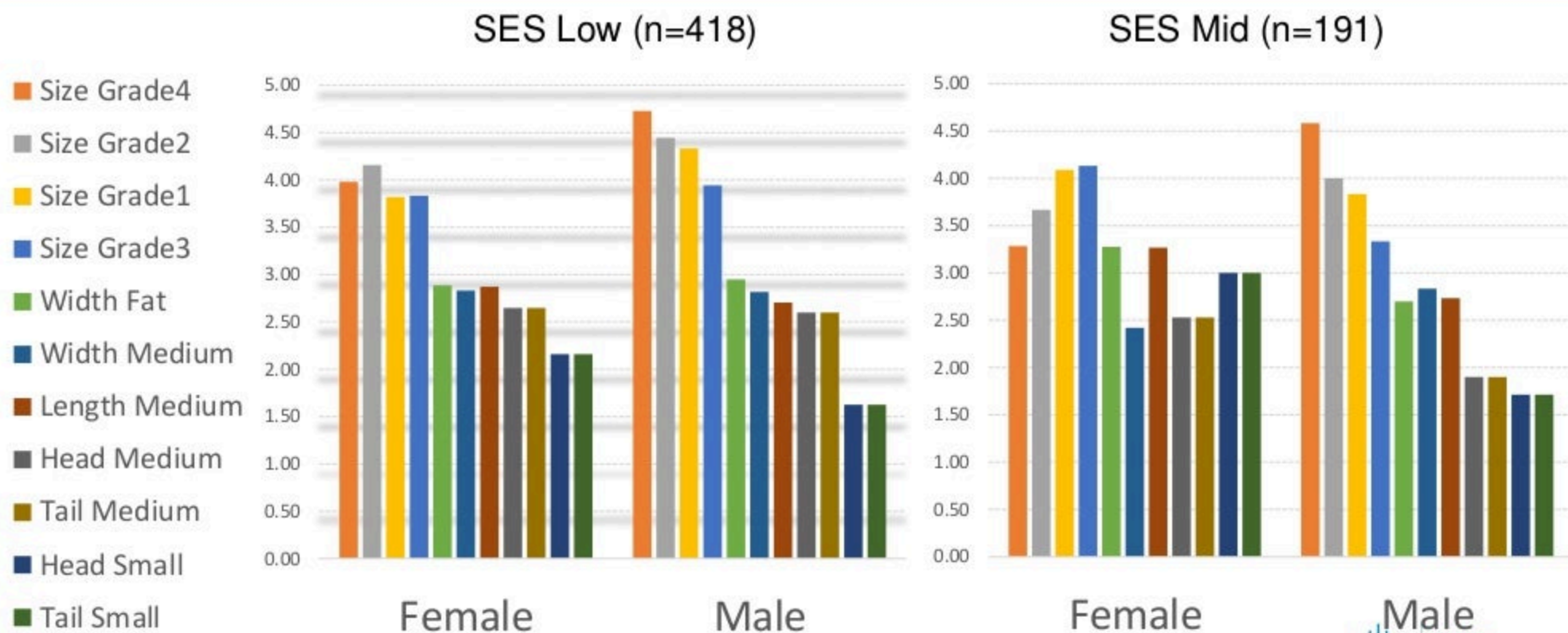


4.3.1. Results; Trait rankings by gender & SES groups

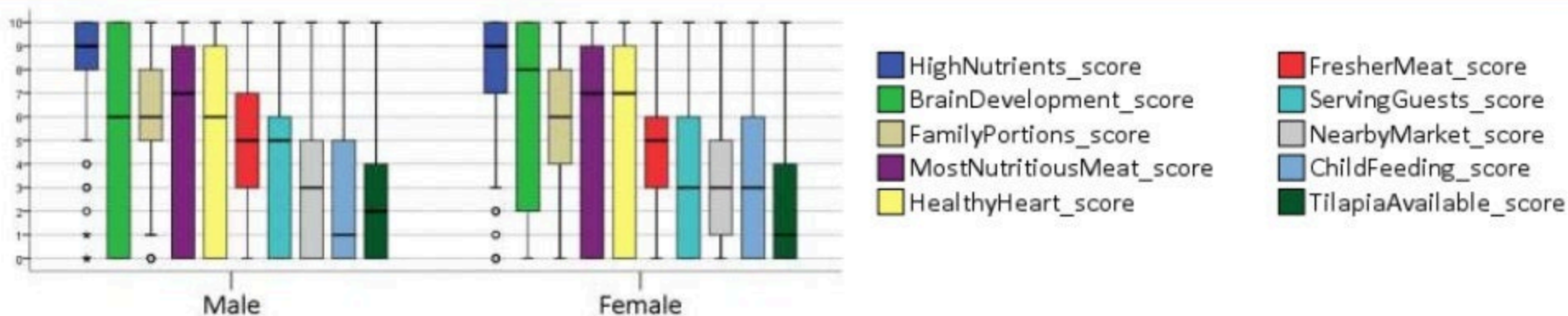
	SES Low					SES Mid					SES High					F
	Female	Male	All	sig#	f	Female	Male	All	sig#	f	Female	Male	All	sig#	f	
N	315	103	418			113	78	191			45	84	129			
LengthMedium_score	2.87	2.71	2.82		119	3.27	2.73	2.98		56	3.33	2.36	2.67	**	48	223
WidthFat	2.89	2.95	2.90		82	3.28	2.70	2.97	*	38	3.00	3.13	3.08		26	146
WidthMedium_score	2.83	2.82	2.83		75	2.42	2.83	2.58		31	2.33	2.75	2.68		19	125
Grade3_score	3.83	3.94	3.87		53	4.13	3.33	3.83		24	4.40	4.17	4.27		11	95
Grade4_score	3.98	4.73	4.11	**	61	3.29	4.58	4.11	**	19	4.00	4.10	4.07		15	88
HeadMedium_score	2.65	2.60	2.64		42	2.53	1.90	2.30		27	3.00	2.20	2.33		18	87
TailMedium_score	2.65	2.60	2.64		42	2.53	1.90	2.30		27	3.00	2.20	2.33		18	87
Grade1_score	3.82	4.33	3.97		31	4.09	3.83	4.00		17	4.25	4.22	4.23		13	61
HeadSmall_score	2.16	1.63	2.03		33	3.00	1.71	2.31	*	13	1.75	3.20	2.56		9	55
TailSmall_score	2.16	1.63	2.03		33	3.00	1.71	2.31	*	13	1.75	3.20	2.56		9	55
Grade2_score	4.16	4.44	4.25		28	3.67	4.00	3.87		15	4.67	3.80	4.13		8	51

Mean values in bold are significantly higher than the corresponding figure for other sex/regions. #Means are significantly different at the 0.05, 0.01 levels for *, **

4.3.2. Results: Trait rankings by gender & SES groups



5.1. Results; Benefits of tilapia sizes

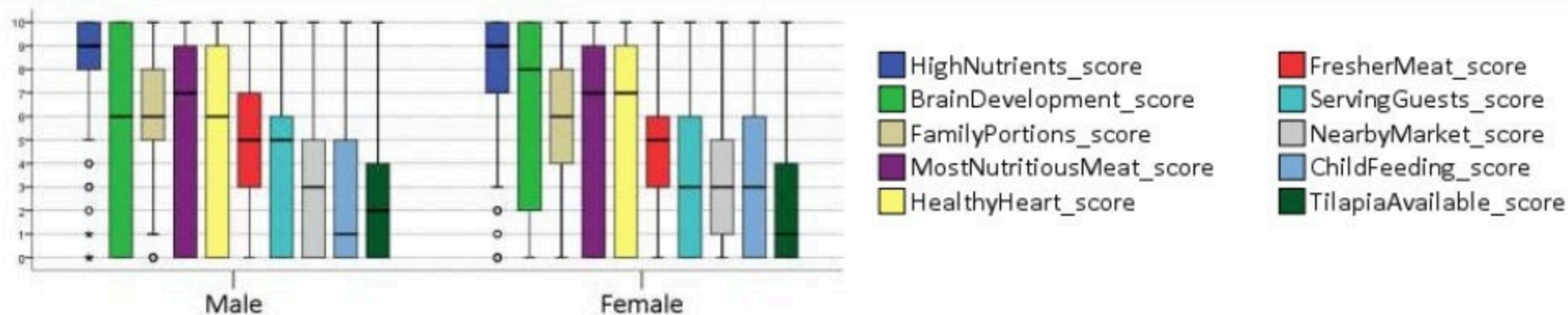


'The best size is 5/kilo to be enough for the whole family. I prefer the fish when it is medium long, I can fry it easily. The thickness. I like it chunky, the medium size with a lot of meat' (Married woman from Lower Egypt).

'I prefer 6/kilo. It is sufficient for my children. Fat chunky is beautiful and has a nice taste. The medium size length, for the weight, and the amount should be sufficient to serve the family' (Unmarried woman from Cairo).

'I do prefer the Tilapia taste, it is beautiful. The best way to cook Tilapia is fried, it has a nice taste. The medium width, the meat is much better in this width. The longer length, it is also nice. The size should make three per kilo because it is delicious' (Married man from Lower Egypt)

5.2. Results; Benefits of tilapia heads and tails



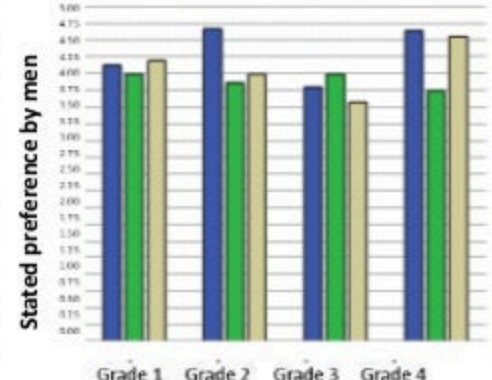
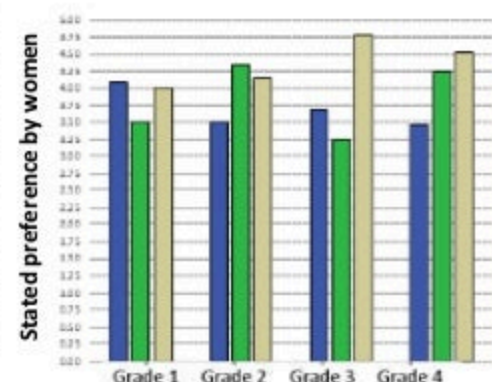
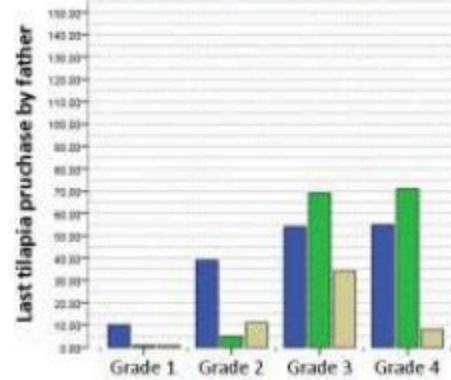
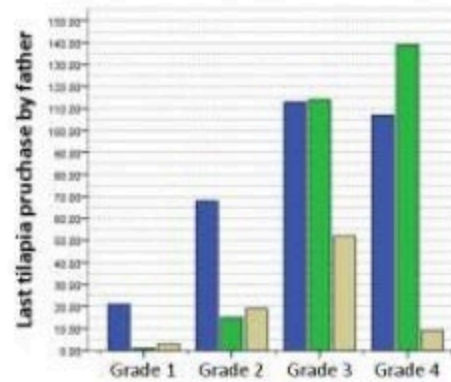
'I like 3/kilo is enough for my family. I prefer it medium hard; it is matter of my taste. It looks better when it has a big head. I prefer it grilled or fried, according to my desire' (Married woman from Kafr el Sheikh).

'Medium sized is so tasty, in both frying and grilling. Around 4/kilo is a good size because the meat is much better. I divide into chunks for my children and some of them like to eat the tail. I like it chunky because the meat will be tastier' (Married woman from Kafr el Sheik).

'The head size is most important for me. I prefer it very small because it is tasty. The chunky one also, it has a lot of meat. For overall size, my first choice is medium because of the price - 6 / kilo - it is tasty as well. For length, the medium long one is the best.

5. Implications & next steps?

- Tilapia trait preferences differ significantly by location and wealth. This in terms of women and men's preferences for smallest sized tilapia grades, as well as head and tail preferences.
- Respondents suggest this related to taste, cooking, child feeding and nutrition and intra-household allocation of fish parts.
- However, inconsistency found between consumption/expenditure data and stated preferences, raising interest methodological questions



■ Lower Egypt
■ Metropolitan
■ Upper Egypt

Smaller Fish Models (Total/Women);

	Smaller Tilapia Preference (Total)				Smaller Tilapia Preference (Women)			
	Exp. (B)	Std. Err.	Sig.	Deg. F.	Exp (B).	Std. Err.	Sig.	
Control	1.025	0.6769	**		0.984	0.8989	*	
Gender (Male)	0.02	0.3222						
Gender (Female)	0 ^a				0a			
Education (yrs)	-0.024	0.0141			-0.043	0.017	**	
Without Children <12yrs	-0.85	0.2036	**		-1.108	0.2517	**	
Age of Mother	-0.137	0.0642	*		-0.035	0.0114	**	
Household Size	-0.137	0.0642			-0.156	0.0773	*	
SES Low	0.546	0.2632	*		0.966	0.4694	*	
SES Mid	0.376	0.2609			0.572	0.491		
SES High	0 ^a							
WEFI Income Control score	-0.039	0.0238			-0.029	0.0307		
WEFI Labour Roles score	-0.071	0.0188	**		-0.06	0.0226	**	
WEFI leadership score	0.054	0.0132	**		0.055	0.0164	**	
N	739				474			
Goodness of fit			0	1.08			0.03	
Dependent: SmallerTilapia_score; a. set to zero; #sig at the levels 0.05, 0.01 at *, **								

Thank You



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Fish