

SUPPLEMENTARY DATA

Public Health Nutrition Policy & Economics

From Storage to Disposal: An Investigation of Household Bread Management and Waste in Algeria and Tunisia

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Appendix

Supplementary Table S1. Algerian Respondents' Self-Reported Storage Practices of Unconsumed Bread, by Demographics (**p* < 0.05 within demographic group)

% Algerian respondents	Gender		Age				Marital Status			Education			Number of persons in the household							
	Total	Women	Men	18-24	24-40	41-60	≥ 61	Single	Married	Widower	Primary/High schools	Professional training	University	1	2	3	4	5	≥ 6	
Storage method																				
Room Temperature																				
Plastic Bag	47.5	46.6	49.1	49.3	46.3	51.9	34.8	45.1	50.3	42.9	6.7	56.4	46.6	31.8	28.6	42	45.5	54.4	62.8	
Cotton Bag	20.1	21.5	17.9	28.4	16.9	18.2	21.7	22.2	17.5	28.6	36.7	12.8	20.3	22.7	37.1	18	21.2	17.6	14	
Bread Box	6.9	7.3	6.3	7.5	8.1	3.9	8.7	7.8	6.3	0	0	5.1	7.6	4.5	5.7	4	13.6	5.9	4.7	
None	2	1.6	2.7	0	2.2	3.9	0	2	2.1	0	10	0	2	4.5	2.9	2	1.5	2.9	0	
Refrigerator	23.4	23	24.1	14.9	26.5	22.1	34.8	22.9	23.8	28.6	20	25.6	23.5	36.4	25.7	34	18.2	19.1	18.6	
Freezer	83.8	78.9	88.5	72.7	80	95.6	100	75.6	91.9	100	100	85.2	82.1	66.7	75	70.6	86.2	88.9	86.1	
<i>Chi² p value</i>		0.888		0.376				0.959			0.459			0.218						
Room temperature Storage time (days)																				
1	23.4	31.6	15.4	43.2	25.5	6.7	0	38.5	8.1	0	14.3	0	29.9	0	25	23.5	17.2	24.4	27.8	
2	46.1	46.1	46.2	43.2	38.2	57.8	50	38.5	54.1	50	71.4	74.1	39.3	66.7	75	64.7	48.3	44.4	27.8	
3-4	27.9	18.4	37.2	9.1	32.7	35.6	50	19.2	36.5	50	57.1	25.9	27.4	33.3	0	5.9	31	28.9	41.7	
5 and more	2.6	3.9	1.3	4.5	3.6	0	0	3.8	1.4	0	0	0	3.4	0	0	5.9	3.4	2.2	2.8	
<i>Chi² p value</i>		0.269		0.020*				0.027*			0.149			0.107						
Discarding bread after storage																				
Yes	55.8	40.8	70.5	34.1	49.1	77.8	90	35.9	75.7	100	33.3	66.7	50.4	0	25	52.9	65.5	57.8	61.1	
<i>Chi² p value</i>		0.010*		0.020*				0.047*			0.119			0.373						
Bread Weight																				
Fosters wastage	73.4	67.1	79.5	72.7	63.6	82.6	90	64.1	82.4	100	33.3	77.8	70.9	33.3	25	94.1	79.3	66.7	75	
Reduces wastage	26.6	32.9	20.5	27.3	36.4	17.8	10	35.9	17.6	0	33.3	22.2	29.1	66.7	75	5.9	20.7	33.3	25	
<i>Chi² p value</i>		0.010*		0.132				0.146			0.452			<0.001*						

Supplementary Table S2. Tunisian Respondents' Self-Reported Storage Practices of Unconsumed Bread, by Demographics (**p* < 0.05 within demographic group)

% Tunisian respondents	Gender		Age				Marital Status			Education			Number of persons in the household						
	Total	Women	Men	18-24	24-40	41-60	≥ 61	Single	Married	Widower	Primary/High schools	Professional training	University	1	2	3	4	5	≥ 6
Storage method																			
Room																			
Temperature																			
Plastic Bag	32.1	37	16	34.8	36.9	25.7	14.3	33.3	31.9	16.7	33.3	33.3	31.9	25	28.6	33.3	24.3	37.5	57.1
Cotton Bag	26.9	24.4	35	34.8	19	34.3	42.9	25.6	26.4	50	33.3	16.7	27.7	30	32.1	16.7	29.7	33.3	28.6
Bread Box	9.6	8.4	14	13	10.7	5.7	7.1	9	11.1	0	0	16.7	9.2	5	7.1	5.6	24.3	4.2	0
None	3.8	2.5	8	0	3.6	8.6	0	3.8	4.2	0	33.3	0	3.5	5	3.6	2.8	2.7	8.3	0
Refrigerator	27.6	27.7	27	17.4	29.8	25.7	35.7	28.2	26.4	33.3	0	33.3	27.7	35	28.6	41.7	18.9	16.7	14.3
Freezer	60.3	63	51.4	52.2	63.1	62.9	50	61.5	59.7	50	66.7	33.3	62.4	50	53.6	69.4	64.9	58.3	57.1
<i>Chi² p value</i>		0.889		0.397				0.942			0.284			0.295					
Room temperature																			
Storage time (days)																			
1	28.2	25.2	37.8	13	28.6	37.1	28.6	25.6	33.3	0	33.3	33.3	27.7	20	39.3	33.3	16.2	29.2	28.6
2	44.9	47.1	37.8	65.2	45.2	40	21.4	48.7	38.9	66.7	0	25	47.5	45	21.4	38.9	64.9	54.2	42.9
3-4	0.6	0.8	0	4.3	0	0	0	1.3	0	0	0	0	0.7	0	0	0	0	4.2	0
5 and more	26.3	26.9	24.3	17.4	26.2	22.9	50	24.4	27.8	33.3	66.7	41.7	24.1	35	39.3	27.8	18.9	12.5	28.6
<i>Chi² p value</i>		0.473		0.047*				0.506			0.415			0.196					
Discarding bread after storage																			
Yes	43.6	46.2	35.1	34.8	52.4	37.1	21.4	50	37.5	33.3	33.3	41.7	44	45	39.3	47.2	37.8	45.8	42.9
<i>Chi² p value</i>		0.235		0.08				0.266			0.926			0.86					
Bread Weight																			
Fosters wastage	50	48.7	54.1	65.2	48.8	45.7	42.9	50	50	50	33.3	50	50.4	25	50	47.2	56.8	54.2	71.4
Reduces wastage	50	51.3	45.9	34.8	51.2	54.3	57.1	50	50	50	66.7	50	49.6	75	50	52.8	43.2	45.8	28.6
<i>Chi² p value</i>		0.572		0.437				1			0.843			0.221					

Supplementary Table S3. Self-Reported Strategies for Handling Bread Leftovers Among Algerian Respondents, Categorized by Demographics

% Algerian respondents	Gender		Age				Marital Status			Education			Number of persons in the household						
	Total	Women	Men	18-24	24-40	41-60	≥ 61	Single	Married	Widower	Primary/High schools	Professional training	University	1	2	3	4	5	≥ 6
Reuse in meals	87.0	82.9	91	84.1	80	95.6	100	79.5	94.6	100	100	92.6	84.6	66.7	62.5	76.5	86.2	88.9	94.4
<i>Chi² p value</i>		0.012*		0.022*				0.495			0.128			<0.001*					
Heating	82.5	73.7	91	72.7	80	91.1	100	74.4	90.5	100	100	100	76.9	33.3	75	70.6	82.8	86.7	88.9
<i>Chi² p value</i>		0.018*		0.536				0.094			0.028*			0.433					
Humification and heating	55.2	50	60.3	45.5	47.3	71.1	70	42.3	70.3	0	14.3	63	50.4	0	50	58.8	44.8	64.4	52.8
<i>Chi² p value</i>		0.231		0.108				0.084			0.009*			0.052					
Animal feed	83.1	59.2	80.8	56.8	65.5	84.4	90	59	82.4	50	66.7	74.1	68.4	66.7	25	64.7	79.3	71.1	75
<i>Chi² p value</i>		47.4	70.5	36.4	61.8	71.1	90	46.2	71.6	100	71.4	77.8	55.6	0	12.5	47.1	75.9	60	63.9
Donation to vulnerable	70.1	0.001*		0.174				0.814			0.095			<0.001*					
<i>Chi² p value</i>		14.5	9	13.6	10.9	6.7	30	11.5	12.2	0	38.1	7.4	10.3	0	25	23.5	3.4	15.6	8.3
Donation to collectors	59.1	0.479		0.281				0.886			0.473			0.001*					
<i>Chi² p value</i>		0.572		0.437				1			0.843			0.221					
Compost	11.7	51.3	45.9	34.8	51.2	54.3	57.1	50	50	50	66.7	50	49.6	75	50	52.8	43.2	45.8	28.6
<i>Chi² p value</i>		0.572		0.437				1			0.843			0.221					

Supplementary Table S4. Demographic Influences on Self-Reported Bread Leftover Management Practices in Tunisia

% Respondents	Tunisia	Gender		Age				Marital Status			Education			Number of persons in the household					
		Total	Women	Men	18-24	24-40	41-60	≥ 61	Single	Married	Widower	Primary/High schools	Professional training	University	1	2	3	4	5
Reuse in meals	63.5	63	64.9	78.3	58.3	65.7	64.3	64.1	62.5	66.7	66.7	75	62.4	45	57.1	52.8	83.8	62.5	85.7
<i>Chi² p value</i>			<i>0.839</i>	0.361				<i>0.966</i>			<i>0.681</i>			0.036*					
Heating	78.8	79.8	75.7	82.6	81	71.4	78.6	80.8	79.2	50	100	83.3	78	75	82.1	72.2	89.2	75	71.4
<i>Chi² p value</i>			<i>0.589</i>	<i>0.665</i>				<i>0.205</i>			<i>0.604</i>			<i>0.655</i>					
Humification and heating	41	42.9	35.1	52.2	38.1	31.4	64.3	42.3	38.9	50	66.7	58.3	39	35	42.9	50	32.4	41.7	42.9
<i>Chi² p value</i>			<i>0.404</i>	<i>0.114</i>				<i>0.823</i>			<i>0.281</i>			<i>0.832</i>					
Animal feed	46.2	43.2	54.1	69.6	45.2	42.9	21.4	50	43.1	33.3	33.3	33.3	47.5	20	39.3	44.4	51.4	62.5	85.7
<i>Chi² p value</i>			<i>0.27</i>	0.034*				<i>0.566</i>			<i>0.578</i>			0.028*					
Donation vulnerable	46.8	49.6	37.8	56.5	45.2	45.6	35.7	44.9	48.6	50	0	41.7	48.2	40	32.1	52.8	45.9	50	71.4
<i>Chi² p value</i>			<i>0.211</i>	<i>0.639</i>				<i>0.889</i>			<i>0.237</i>			<i>0.35</i>					
Donation collectors	37.8	37	40.5	43.5	39.3	34.3	28.6	47.4	27.8	33.3	33.3	25	39	40	17.9	30.6	40.5	66.7	14.3
<i>Chi² p value</i>			<i>0.696</i>	<i>0.781</i>				0.045*			<i>0.622</i>			0.006*					
Compost	9.6	10.1	8.1	8.7	11.9	2.9	14.3	10.3	6.9	33.3	33.3	8.3	9.2	20	10.7	11.1	5.4	4.2	14.3
<i>Chi² p value</i>			<i>0.722</i>	<i>0.437</i>				<i>0.105</i>			<i>0.37</i>			<i>0.571</i>					

Supplementary Table S5. Self-Reported Reasons for Avoiding Bread Wastage Among Algerian and Tunisian Respondents, Categorized by Demographics

% Respondents	Reasons for avoiding bread wastage	Gender		Age				Marital Status			Education			Number of persons in the household						
		Total	Women	Men	18-24	24-40	41-60	≥ 61	Single	Married	Widower	Primary/High school	Professional training	University	1	2	3	4	5	≥ 6
Algeria																				
	Environmental	7	8.3	5.4	13.8	5.8	3.3	15	10	4.2	20	0	6.1	7.6	26.7	14.3	6.9	5.8	4.1	0
	Economical	8.5	12.4	3.3	3.4	10.6	8.3	5	8.9	8.5	0	0	9.1	8.8	13.3	9.5	13.8	5.8	6.1	9.1
	Religious	36.6	31.4	43.5	55.2	35.6	35	20	38.9	35.6	20	33.3	33.3	37.6	6.7	14.3	34.5	42.3	42.9	48.5
	Ethic/moral	47.9	47.9	47.8	27.6	48.1	53.3	60	42.2	51.7	60	33.3	51.5	45.9	53.3	61.9	44.8	46.2	46.9	42.4
	<i>Chi² p value</i>		0.049*		<i>0.103</i>				<i>0.455</i>			<i>0.928</i>		<i>0.121</i>						
Tunisia																				
	Environmental	12.8	12.6	13.5	17.4	11.9	11.4	14.3	14.1	11.1	16.7	0	8.3	13.5	25	17.9	11.1	8.1	8.3	14.3
	Economical	7.7	9.2	2.7	0	8.3	11.4	7.1	3.8	12.5	0	0	8.3	7.8	5	7.1	11.1	8.1	4.2	14.3
	Religious	27.6	27.7	27	43.5	31	17.1	7.1	34.6	22.2	0	0	16.7	29.1	5	17.9	38.9	27	33.3	57.1
	Ethic/moral	51.9	50.4	56.8	39.1	48.8	60	71.4	47.4	54.2	83.3	100	66.7	49.6	65	57.1	38.9	56.8	54.2	14.3
	<i>Chi² p value</i>		<i>0.612</i>		0.001*				<i>0.134</i>			<i>0.636</i>		<i>0.351</i>						

Supplementary Table S6. Self-Reported Reasons for Avoiding Bread Wastage Among Algerian and Tunisian Respondents, Categorized by Demographics

% Respondents	Reasons for avoiding bread wastage	Gender		Age				Marital Status			Education			Number of persons in the household						
		Total	Women	Men	18-24	24-40	41-60	≥ 61	Single	Married	Widower	Primary/High schools	Professional training	University	1	2	3	4	5	≥ 6
Algeria																				
	Environmental	7	8.3	5.4	13.8	5.8	3.3	15	10	4.2	20	0	6.1	7.6	26.7	14.3	6.9	5.8	4.1	0
	Economical	8.5	12.4	3.3	3.4	10.6	8.3	5	8.9	8.5	0	0	9.1	8.8	13.3	9.5	13.8	5.8	6.1	9.1
	Religious	36.6	31.4	43.5	55.2	35.6	35	20	38.9	35.6	20	33.3	33.3	37.6	6.7	14.3	34.5	42.3	42.9	48.5
	Ethic/moral	47.9	47.9	47.8	27.6	48.1	53.3	60	42.2	51.7	60	33.3	51.5	45.9	53.3	61.9	44.8	46.2	46.9	42.4
	<i>Chi² p value</i>		0.049*		<i>0.103</i>				<i>0.455</i>			<i>0.928</i>		<i>0.121</i>						
Tunisia																				
	Environmental	12.8	12.6	13.5	17.4	11.9	11.4	14.3	14.1	11.1	16.7	0	8.3	13.5	25	17.9	11.1	8.1	8.3	14.3
	Economical	7.7	9.2	2.7	0	8.3	11.4	7.1	3.8	12.5	0	0	8.3	7.8	5	7.1	11.1	8.1	4.2	14.3
	Religious	27.6	27.7	27	43.5	31	17.1	7.1	34.6	22.2	0	0	16.7	29.1	5	17.9	38.9	27	33.3	57.1
	Ethic/moral	51.9	50.4	56.8	39.1	48.8	60	71.4	47.4	54.2	83.3	100	66.7	49.6	65	57.1	38.9	56.8	54.2	14.3
	<i>Chi² p value</i>		<i>0.612</i>		0.001*				<i>0.134</i>			<i>0.636</i>		<i>0.351</i>						

