



Methodological Experiment on Measuring Asset Ownership from a Gender Perspective (MEXA) An EDGE-LSMS-UBOS Collaboration

TALIP KILIC / HEATHER MOYLAN

Senior Economist / Survey Specialist

Living Standards Measurement Study Team

Development Research Group, The World Bank

tkilic@worldbank.org; hmoylan@worldbank.org

www.worldbank.org/lms

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Core Team

- **UNSD & EDGE Team**
- **World Bank:** *LSMS* - Talip Kilic, Heather Moylan, Arthur Shaw;
Survey Solutions - Karol Karpinski, Slava Scherbak, Zurab Sajaia.
- **UBoS** : James Muwonge, Norah Madaya, Vincent Ssennono.

Objective

- Provide a comparative assessment of different approaches to respondent selection as part of a household survey experiment on individual level asset ownership & control
 - To inform the EDGE-supported surveys in pilot countries in 2015 & the UN guidelines on measurement of individual level asset ownership & control

Overview of Treatment Arms

Arm	Who?	How?	What?
1	“Most Knowledgeable” Household Member	Alone	Assets Owned Exclusively/ Jointly by Household Members
2	Randomly Selected Member of Principal Couple	Alone	Assets Owned Exclusively/ Jointly by Household Members
3	Principal Couple	Together	Assets Owned Exclusively/ Jointly by Household Members
4	Adult (18+) Household Members	Alone, Simultaneous	Assets Owned Exclusively/ Jointly by Household Members
5	Adult (18+) Household Members	Alone, Simultaneous	Assets Owned Exclusively/ Jointly by Respondent

Sample Composition

Table S 1: MEXA Households Interviewed

	Initial Allocation	Expected	Interviewed	% of Expected	Interviewed w/ a Couple		
					Any	More than 1 Interview	Both Members of Couple Interviewed
TA #1	548	490	495	100%	324	--	N/A
TA #2	548	299	304	100%	304	--	N/A
TA #3	548	299	272	91%	272	--	272
TA #4	548	490	475	97%	302	187	150
TA #5	548	490	481	98%	310	182	160
Total	2,720	2,068	2,027	98%	1512	369	570

Sample Composition (2)

**Table S 2. Distribution of Treatment Arm 4 & 5 Households
According to # of Adults Interviewed**

	TA #4		TA #5	
	Total	%	Total	%
Households Interviewed	475		481	
All Eligible Adults Interviewed	295	0.61	286	0.59
4 adults	14	0.03	15	0.03
3 adults	20	0.04	23	0.05
2 adults	137	0.29	133	0.28
1 adults	124	0.26	115	0.24
Subset of Eligible Adults Interviewed	180	0.38	195	0.41
3 out of 4	15	0.03	12	0.02
2 out of 4	20	0.04	21	0.04
1 out of 4	11	0.02	12	0.02
2 out of 3	26	0.05	23	0.05
1 out of 3	8	0.02	12	0.02
1 out of 2	100	0.21	115	0.24
Average # of Adults Interviewed per Household	1.62		1.61	
% of Eligible Respondents Interviewed	76%		75%	

Interview Dynamics

Table S 3: Respondent/Enumerator Gender Match

		<i>Gender of Enumerator</i>		
		<i>Male</i>	<i>Female</i>	
<i>Gender of Respondent</i>	Overall	<i>Male</i>	74.6	25.4
		<i>Female</i>	18.4	81.6
	TA #1	<i>Male</i>	72.3	27.7
		<i>Female</i>	24.7	75.3
	TA #2	<i>Male</i>	77.9	22.2
		<i>Female</i>	20.0	80.0
	TA #4	<i>Male</i>	80.8	19.2
		<i>Female</i>	16.3	83.7
	TA #5	<i>Male</i>	79.6	20.4
		<i>Female</i>	16.5	83.5

**Table S 4: Breakdown of TA #3
Interviews by Enumerator Gender**

<i>Male</i>	<i>Female</i>
55.2	44.9

Interview Dynamics (2)

Table S 5: Total Individual Interview Duration (Minutes) by Treatment Arm

	All Respondents				Respondent/Enumerator Gender Overlap				Respondent/Enumerator Gender Discrepancy			
	Mean	Median	Min	Max	Mean	Median	Min	Max	Mean	Median	Min	Max
TA #1	36	31	5	131	36	32	5	129	35	30	6	131
Observations	405				304				101			
TA #2	36	31	5	124	36	32	5	124	36	28	8	116
Observations	283				232				51			
TA #3	39	36	7	118								
Observations	216											
TA #4	34	31	5	132	35	32	5	132	31	27	6	118
Observations	625				516				109			
TA #5	29	24	5	131	29	25	5	131	28	21	5	126
Observations	645				531				114			
Overall	34	30	5	132	34	30	5	132	33	28	5	131
Observations	2,174				1,721				453			

Interview Dynamics (3)

Table S 6: Distribution of Households with respect to # of Interviews & # of Simultaneous Interviews, by Treatment Arm

	<i># of HHs</i>	# of Simultaneous Interviews			
		<i>0</i>	<i>2</i>	<i>3</i>	<i>4</i>
TA #4					
2 interviews	158	36.0	64.0	N/A	N/A
3 interviews	32	6.3	28.1	65.6	N/A
4 interviews	13	0.0	23.1	23.1	53.9
TA #5					
2 interviews	163	41.3	58.7	N/A	N/A
3 interviews	33	0.0	27.3	72.7	N/A
4 interviews	10	10.0	10.0	30.0	50.0

Interview Dynamics (4)

Table S 7. Incidence of Respondents Interviewed Alone By Module

		TA #1	TA #2	TA #3	TA #4	TA #5
Module 3	Alone	90.1	91.0	85.3	92.3	91.5
<i>Dwelling</i>	<i>With adult female</i>	1.4		3.3	0.1	0.6
	<i>With adult male</i>	3.2	2.7	2.6	2.6	3.5
	<i>Mixed sex present</i>	0.2		0.4	0.3	0.1
	<i>With children</i>	5.1	6.3	8.5	4.7	4.3
Module 4	Alone	91.0	91.4	81.1	93.8	91.9
<i>Agricultural Land</i>	<i>With adult female</i>	1.4	0.6	2.5	0.3	0.8
	<i>With adult male</i>	2.6	2.1	2.2	2.6	2.9
	<i>Mixed sex present</i>	0.2	0.3		0.3	0.4
	<i>With children</i>	4.8	5.7	10.1	3.1	4.0
Module 7	Alone	90.6	91.0	86.6	94.0	92.2
<i>Non-Farm Enterprises</i>	<i>With adult female</i>	1.4	0.6	3.3	0.1	0.6
	<i>With adult male</i>	3.4	1.8	2.2	2.6	3.1
	<i>Mixed sex present</i>	0.2			0.1	0.5
	<i>With children</i>	4.4	6.6	7.6	3.2	3.5
Module 10	Alone	91.8	92.2	85.9	93.8	92.0
<i>Financial Assets</i>	<i>With adult female</i>	1.2	0.6	2.9	0.3	0.5
	<i>With adult male</i>	2.8	2.4	2.5	2.2	3.3
	<i>Mixed sex present</i>			0.8	0.1	0.4
	<i>With children</i>	4.2	4.8	8.0	3.6	3.9

Note: "Respondent" is the principal couple for TA #3.

Interview Dynamics (5)

Table S 8. Incidence of Treatment Arm 3 Couples Interviewed Together

		Overall	Urban	Rural
Module 3	Together and both participating	84.9	84.3	85.0
<i>Dwelling</i>	<i>Together, husband participating, wife not</i>	14.4	13.7	14.6
	<i>Together, wife participating, husband not</i>	0.4		0.5
	<i>Husband present, wife absent</i>	0.4	2.0	
	<i>Wife present, Husband absent</i>			
Module 4	Together and both participating	81.2	86.3	80.5
<i>Agricultural Land</i>	<i>Together, husband participating, wife not</i>	15.9	13.7	16.4
	<i>Together, wife participating, husband not</i>	1.8		2.3
	<i>Husband present, wife absent</i>	0.7		0.9
	<i>Wife present, Husband absent</i>	0.4		
Module 7	Together and both participating	89.5	90.2	89.6
<i>Non-Farm Enterprises</i>	<i>Together, husband participating, wife not</i>	7.3	5.9	7.7
	<i>Together, wife participating, husband not</i>	0.7		0.9
	<i>Husband present, wife absent</i>	1.1	2.0	0.9
	<i>Wife present, Husband absent</i>	1.5	2.0	0.9
Module 10	Together and both participating	87.6	86.3	88.1
<i>Financial Assets</i>	<i>Together, husband participating, wife not</i>	8.4	5.9	9.1
	<i>Together, wife participating, husband not</i>	1.5	2.0	1.4
	<i>Husband present, wife absent</i>	1.8	3.9	1.4
	<i>Wife present, Husband absent</i>	0.7	2.0	

Scope of Preliminary Analysis

- Balance tests suggest that randomization across treatment arms was implemented successfully
- Priority modules: Dwelling, Agricultural Land, Non-Farm Enterprises, Financial Assets
- Unit of analysis: Adult individual
- Scope of inter-arm comparisons
 - Across Arms 1 through 5 using only households with a couple
 - Across Arms 1, 4 & 5 using all households in these arms
- Approaches to inter-arm comparisons
 - Taking individual reporting as is in Arms 4-5
 - Taking only Presumed Most Knowledgeable Member reporting in Arms 4-5

Scope of Preliminary Analysis (2)

- Primary dependent variables – All binary (8)
 - Reported Ownership – Overall; Exclusive; Joint (w/ anyone)
 - Economic Ownership – Overall; Exclusive; Joint (w/ anyone)
 - Right to Sell – Irrespective of the need to obtain consent
 - Right to Bequeath – Irrespective of the need to obtain consent
- Secondary dependent variables – All continuous (3)
 - PCA-based overall, exclusive & joint rights indices across 5 rights

Scope of Preliminary Analysis (3)

- Core specification:

$$y_{ih} = \alpha + \beta_1 \tau_{2_{ih}} + \beta_2 \tau_{3_{ih}} + \beta_3 \tau_{4_{ih}} + \beta_4 \tau_{5_{ih}} + \gamma C + \varepsilon_{ih}$$

- Probit (OLS) regressions for binary (continuous) dependent variables
- Standard errors clustered at the EA-level, take into account stratification
- i & h represent individual & household
- α & ε – constant & error term
- τ_2, τ_3, τ_4 & τ_5 – identifiers for Arms 2 through 5; **Comparison: Arm 1**
- Tests of equality of $\beta_1, \beta_2, \beta_3$ & β_4 for complete inter-arm comparisons
- C – vector of control variables
- Estimated on the whole & by gender

Vector of Controls

Individual Attributes

- Female
- Age (Years)
- **Highest Educational Qualification**
 - None (Default)
 - Primary
 - Secondary
 - Above Secondary
- **Marital Status**
 - Single (Default)
 - Separated/Divorced/Widowed
 - Married: Monogamous
 - Married: Polygamous
 - Cohabiting
- **Religion**
 - Catholic
 - Protestant
 - Muslim
 - Other (Default)
- **Main Economic Activity (Past 12 Months)**
 - None (Default)
 - On-Farm Employment
 - Off-Farm Employment

Vector of Controls (2)

Household Attributes

- Head of Household: Female
- Head of Household: Age (Years)
- **Demographics**
 - Members 0-6
 - Members 7-14
 - Male Members 15-39
 - Female Members 15-39
 - Male Members 40-59
 - Female Members 40-59
 - Members 60+
- Index (PCA) of Housing Quality
- Rural Residence
- **Region**
 - Center (Default)
 - East
 - West
 - North
- **Survey Team Fixed Effects**

Key Findings

Approach

- Synthesized for female adult population in households with a couple, for primary (8) dependent variables & (4) modules
- Taking individual reporting as is in Arms 4-5
- Focus on effects statistically significant at least at 5 percent level

Findings

- No statistically significant effects assoc. with Arm 2 – across the board
- Arm 3: Positive effects on overall & joint **dwelling** reported ownership
 - No similar effect for other assets & for economic ownership

Key Findings (2)

- Arm 4: Positive effects on reported & economic ownership (overall & joint) across dwellings, agricultural land, financial assets
 - Positive effects sizeable in magnitude, significant at 1 percent level

	TA1 Mean	Average T4 Effect	Effect As a % of TA1 Mean
Dwelling Reported Ownership	0.110	0.090	82%
Dwelling Economic Ownership	0.271	0.130	48%
Agricultural Land Reported Ownership	0.120	0.077	64%
Agricultural Land Economic Ownership	0.271	0.122	45%
Financial Asset Reported Ownership	0.182	0.088	49%

- Effects statistically indistinguishable from those associated with Arm 5
- Stronger in magnitude when restricting Arm 4 sample to households where both members of the principal couple were interviewed
- Still hold while working with all households, whether or not with a couple
- Wiped out if presumed most knowledgeable member reporting assumed to override other respondents

Synthesis of Key Findings for Female Adult Population Living in Households with a Couple

Signs of Coefficients Statistically Significant at 5 Percent Level & Above

DWELLING										
	Reported Ownership Incidence			Economic Ownership Incidence			Right to Sell		Right to Bequeath	
	<i>Overall</i>	<i>Exclusive</i>	<i>Joint</i>	<i>Overall</i>	<i>Exclusive</i>	<i>Joint</i>	<i>Unconditional</i>	<i>Conditional</i>	<i>Unconditional</i>	<i>Conditional</i>
TA #3	(+)		(+)							
TA #4	(+)		(+)	(+)		(+)	(+)	(+)		(+)
TA #5	(+)		(+)	(+)		(+)				
AGRICULTURAL LAND										
	Reported Ownership Incidence			Economic Ownership Incidence			Right to Sell		Right to Bequeath	
	<i>Overall</i>	<i>Exclusive</i>	<i>Joint</i>	<i>Overall</i>	<i>Exclusive</i>	<i>Joint</i>	<i>Unconditional</i>	<i>Conditional</i>	<i>Unconditional</i>	<i>Conditional</i>
TA #4	(+)		(+)	(+)		(+)	(+)			
TA #5	(+)	(+)	(+)							
NON-FARM ENTERPRISES										
	Reported Ownership Incidence			Economic Ownership Incidence			Right to Sell		Right to Bequeath	
	<i>Overall</i>	<i>Exclusive</i>	<i>Joint</i>	<i>Overall</i>	<i>Exclusive</i>	<i>Joint</i>	<i>Unconditional</i>	<i>Conditional</i>	<i>Unconditional</i>	<i>Conditional</i>
TA #3	(-)	(-)			(-)		(-)		(-)	
TA #4										(+)
TA #5					(+)	(-)				
FINANCIAL ASSETS										
	Reported Ownership Incidence			Economic Ownership Incidence			Right to Sell		Right to Bequeath	
	<i>Overall</i>	<i>Exclusive</i>	<i>Joint</i>	<i>Overall</i>	<i>Exclusive</i>	<i>Joint</i>	<i>Unconditional</i>	<i>Conditional</i>	<i>Unconditional</i>	<i>Conditional</i>
TA #4	(+)	(+)	(+)							
TA #5	(+)		(+)							

Next Steps

- Synthesis of treatment effects for
 - Male adult population
 - Female & male respondents' reporting regarding their ownership/rights
 - Secondary dependent variables
- Unpacking joint ownership patterns, mapping reported & economic ownership to rights, formal ownership dynamics (low incidence)
- Intra-household discrepancies in reporting – extent & correlates
- Hidden assets – extent & correlates
- Extending the analysis beyond the priority modules
- Moving from individual to asset level analysis

Intra-Household Discrepancies in Reporting

Table S 9. Agreement on Individual Owners' Reported & Economic Ownership in Treatment Arm 4 Households According to # of Adults Interviewed

Including: Households with 2 or More Respondents & Individuals Reported as Owners by At Least 1 Respondent
Level of Analysis: Individual Owners

Average Share of Respondents Reporting an Individual as an Owner

	Dwelling				Agricultural Land			
	<i>Overall</i>	<i># Interviewed</i>			<i>Overall</i>	<i># Interviewed</i>		
		2	3	4		2	3	4
Reported Ownership								
Overall	0.80	0.83	0.78	0.59	0.73	0.78	0.62	0.58
Exclusive	0.82	0.84	0.78	0.77	0.79	0.81	0.78	0.71
Joint	0.73	0.75	0.73	0.50	0.73	0.76	0.67	0.52
Observations	267	202	40	25	300	221	52	27
Economic Ownership								
Overall	0.75	0.79	0.69	0.59	0.72	0.76	0.60	0.58
Exclusive	0.67	0.71	0.63	0.44	0.84	0.85	0.82	0.80
Joint	0.86	0.88	0.80	0.83	0.67	0.73	0.54	0.53
Observations	344	255	54	35	370	270	64	36

Intra-Household Discrepancies in Reporting (2)

Table S 10. Agreement on Individual Owners' Reported & Economic Ownership in Treatment Arm 4 Households According to # of Adults Interviewed

Including: Households with 2 or More Respondents & Individuals Reported as Owners by At Least 1 Respondent
Level of Analysis: Individual Owners

Average Share of Respondents in Unanimous Agreement on Individual's Ownership Status

	Dwelling				Agricultural Land			
	<i>Overall</i>	<i># Interviewed</i>			<i>Overall</i>	<i># Interviewed</i>		
		2	3	4		2	3	4
Reported Ownership								
Overall	0.61	0.66	0.55	0.32	0.48	0.55	0.31	0.26
Exclusive	0.35	0.39	0.35	0.04	0.30	0.34	0.21	0.11
Joint	0.03	0.04	0.00	0.00	0.04	0.05	0.00	0.00
Observations	267	202	40	25	300	221	52	27
Economic Ownership								
Overall	0.51	0.58	0.39	0.26	0.45	0.52	0.27	0.22
Exclusive	0.10	0.11	0.10	0.00	0.10	0.12	0.06	0.00
Joint	0.21	0.26	0.07	0.03	0.20	0.25	0.03	0.08
Observations	344	255	54	35	370	270	64	36

Intra-Household Discrepancies in Reporting (3)

Table S 11: TA#4 Household-Level Share of Respondents Reporting DWELLING Value Over vs. Under Compared to Value Reported by Presumed Most Knowledgeable Member, by # of Interviews

	2	3	4
Over	57.8	53.9	41.7
Same	7.3	3.9	
Under	35.0	42.3	58.3
Average Within-Household Respondent Value As a Share of Presumed Most Knowledgeable Member Reported Value Averaged Across Households; Taking Shares As Is Prior to Computing Within-Household Average)			
No Trimming	129%	345%	776%
<i># of Households</i>	123	25	11
Trimmed Top & Bottom 1%	47%	45%	220%
<i># of Households</i>	119	23	9
Trimmed Top & Bottom 5 %	12%	13%	220%
<i># of Households</i>	108	21	9
Average Within-Household Respondent Value As a Share of Presumed Most Knowledgeable Member Reported Value Averaged Across Households; Taking Absolute Value of Shares Prior to Computing Within-Household Average)			
No Trimming	196%	422%	847%
<i># of Households</i>	123	25	11
Trimmed Top & Bottom 1%	122%	125%	300%
<i># of Households</i>	112	23	9
Trimmed Top & Bottom 5 %	82%	95%	300%
<i># of Households</i>	107	21	9

Hidden Asset Ownership

Table S 12: Hidden Assets

Module	# of Respondents Owning an Asset			# of Owners Reporting a Hidden Asset			
	Overall	Male	Female	Overall #	Overall %	Male %	Female %
Parcels	833	62.3%	37.7%	25	3.0%		
Large Livestock	1014	53.5%	46.5%	49	4.8%		
Large Agricultural Equipment	102	66.7%	33.3%	0	0.0%		
Non-farm Enterprises	536	42.5%	57.5%	1	0.2%		
Other Real Estate	154	67.1%	32.9%	4	2.6%		
Financial Assets (Accounts)	795	46.9%	53.1%	111	14.0%	16.4%	12.8%
Financial Assets (Loans)	287	56.4%	43.6%	78	27.2%	25.3%	29.6%
Liabilities	410	51.1%	48.9%	93	22.7%	24.6%	17.7%



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TALIP KILIC / HEATHER MOYLAN

Senior Economist / Survey Specialist

Living Standards Measurement Study Team

Development Research Group, The World Bank

tkilic@worldbank.org; hmoylan@worldbank.org

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