Supplementary Materials

Table S1. Descriptive statistics.

	Urban + Rural		Rural		Rural using M-PESA		Rural banked using M-PESA		Rural, vulnerable, using M-PESA	
	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
SIM card										
Own	2459	82.0	1469	77.4						
Own or have access	2838	94.6	1760	92.7						
M-PESA										
Use	2180	72.7	1273	67.0	1273	100.0	402	100.0	827	100.0
Pay bills	290	9.7	133	7.0	122	9.6	65	16.2	54	6.5
Receive salary	113	3.8	55	2.9	55	4.3	26	6.5	28	3.4
Receive government pension	18	0.6	12	0.6	12	0.9	7	0.7	5	0.6
Buy	54	1.8	27	1.4	27	2.1	18	4.5	8	1.0
Send money	1056	35.2	568	29.9	528	41.5	193	48.0	302	36.5
Receive money	1149	38.3	693	36.5	636	50.0	207	51.5	431	52.1
Send emergency money	727	24.2	376	19.8	353	27.7	143	35.6	195	23.6
Receive emergency money	720	24.0	407	21.4	378	12.6	143	11.2	236	28.5
Save	205	6.8	96	5.1	96	7.5	35	8.7	58	7.0
M-SHWARI										
Use	283	9.4	90	4.7	90	7.1	53	13.2	35	4.2
Save	40	1.3	11	0.6	11	0.9	6	1.5	4	0.5
Use M-KESHO	34	1.1	9	0.5	9	0.7	9	2.2		
Save on MFS	228	7.6	103	5.4	103	8.1	40	10.0	58	7.0
Bank account										
Have	846	28.2	444	23.4	402	31.6	402	100.0	-	-
Save	139	4.6	53	2.8	49	3.8	49	12.2	-	-
Save on MFS *and* bank account	45	1.5	19	1.0	19	1.5	19	4.7	-	-

	Urban + Rural		Rural		Rural using M-PESA		Rural banked using M-PESA		Rural, vulnerable, using M-PESA	
	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
Age										
15–25	669	22.3	331	17.4	179	14.1	31	7.7	141	17.0
26–30	514	17.1	269	14.2	185	14.5	49	12.2	127	15.3
31–35	394	13.1	240	12.6	170	13.4	46	11.4	122	14.7
36–40	366	12.2	256	13.5	188	14.8	65	16.2	116	14.1
40–55	624	20.8	453	23.9	323	25.4	121	30.1	195	23.7
Over 55	433	14.4	350	18.4	224	17.6	89	22.1	126	15.2
Gender										
Female	1861	62.0	1140	60.0	735	57.7	172	42.8	533	64.5
Male	1139	38.0	759	40.0	534	41.9	229	57.0	294	35.5
Education										
No education	995	33.2	811	42.8	391	31.3	75	18.7	306	37.1
Primary	1172	39.1	695	36.6	521	40.9	138	34.3	362	43.8
Secondary	769	25.6	368	19.4	328	25.8	169	42.0	157	19.0
College	60	2.0	21	1.1	21	1.6	19	4.7	1	0.1
Family size (average)	4.5		5.0		4.8		4.6		4.9	
Wealth (average)	14.1		13.5		14.8		16.2		14.1	
Employed (%)	2112	70.4	1405	74.1	1010	79.6	352	87.6	633	76.3
Urbanity	1101	36.7								
Observations [a]	3000	100.0	1899	100.0	1273	91.8	402	100.0	825	100.0

Note: [a] differences with the total number of observations in Figures 1–4 are due to missing variable (for family size and education).

Table S2. Possession of a mobile phone, FinAccess data.

	Urban + Rural	Urban	Rural	Rural, vulnerable
Age	***	**	**	n.s.
15–25	–		–	–
26–30	0.385***	0.427***	0.357***	0.284***
	(6.84)	(4.49)	(5.07)	(3.56)
31–35	0.562***	0.694***	0.525***	0.485***
	(8.74)	(5.66)	(6.86)	(5.51)
36–40	0.470***	0.587***	0.419***	0.320***
	(7.03)	(4.79)	(5.21)	(3.53)
41–55	0.432***	0.667***	0.372***	0.305***
	(7.65)	(5.91)	(5.58)	(3.96)
Over 55	0.115*	0.0491	0.156*	0.0571
	(2.11)	(0.48)	(2.39)	(0.77)
Gender (Female = 1)	–0.165***	–0.217**	–0.149***	–0.0741
	(–4.43)	(–3.07)	(–3.36)	(–1.43)
Education	***	***	***	***
Non-educated	–		–	–
Primary	0.445***	0.450***	0.404***	0.433***
	(10.89)	(5.63)	(8.36)	(7.82)
Secondary	1.019***	1.034***	0.917***	0.841***
	(17.31)	(10.33)	(11.98)	(8.56)
College	1.634***	1.329***	no variation	no variation
	(5.38)	(4.06)		
Wealth	0.0611***	0.0552***	0.0624***	0.0563***
	(21.71)	(10.53)	(18.26)	(14.17)
Family size	–0.0234***	–0.0572***	–0.00222	0.00805
	(–3.31)	(–3.68)	(–0.27)	(0.85)
Constant	0.658***	–0.336**	0.806***	0.925***
	(10.76)	(–2.93)	(10.92)	(11.19)
Pseudo R^2	0.2097	0.2127	0.1721	0.1339
AIC	6541.97	1886.055	4620.6	3551.0
BIC	6623.23	1955.0	4690.1	3616.8
Log likelihood	–3258.9	–931.03	–2299.3	–1764.5
Observations	6449	2313	4094	2940

t statistics in parentheses; *, ** and *** indicate significance at the 0.05, 0.01 and 0.001 level, respectively; asterisks next to the name of a categorical variable indicate its overall significance

Table S3. Possession of formal accounts by individuals who own a mobile phone, FinAccess data.

	Urban + Rural		Urban	Rural	Rural, vulnerable
	M-PESA	Bank account	M-PESA	M-PESA	M-PESA
	(1)	(2)	(3)	(4)	(5)
Outcome equation					
Age	***	***	***	***	***
15–25	–	–	–	–	–
26–30	0.342***	0.419***	0.288**	0.378***	0.415***
	(5.01)	(6.59)	(2.87)	(4.05)	(3.85)
31–35	0.521***	0.388***	0.505***	0.533***	0.568***
	(6.47)	(5.54)	(4.01)	(5.05)	(4.51)
36–40	0.457***	0.484***	0.604***	0.393***	0.455***
	(5.41)	(6.36)	(4.32)	(3.67)	(3.60)
41–55	0.452***	0.468***	0.359**	0.500***	0.444***
	(6.15)	(6.93)	(3.11)	(5.18)	(3.98)
Over 55	0.365***	0.376***	0.427**	0.334***	0.322**
	(4.78)	(5.22)	(3.23)	(3.52)	(2.92)
Gender (Female = 1)	0.123**	–0.237***	0.0889	0.161**	0.172*
	(2.59)	(–5.27)	(1.15)	(2.67)	(2.41)
Education	***	***	***	n.s.	n.s.
Non-educated	–	–	–	–	
Primary	0.144*	0.0825	0.213	0.112	0.00664
	(2.09)	(1.19)	(1.88)	(1.35)	(0.07)
Secondary	0.410***	0.547***	0.361**	0.460***	0.300*
	(4.63)	(5.83)	(2.79)	(3.89)	(2.00)
College	0.479**	1.513***	0.225	5.052	3.946
	(2.64)	(8.48)	(1.06)	(0.01)	(0.04)
Wealth	0.00821	0.0276***	0.0197**	0.00232	–0.00316
	(1.54)	(4.81)	(2.68)	(0.32)	(–0.37)
Family size	–0.0169	–0.0717***	–0.0447*	–0.00985	–0.00875
	(–1.81)	(–7.74)	(–2.48)	(–0.87)	(–0.64)
Constant	0.558***	–0.640***	0.510**	0.587**	0.673**
	(3.74)	(–3.70)	(2.71)	(2.74)	(2.61)
Selection equation					
(SIM ownership)					
Age	0.0252***	0.0255**	0.0411*	0.0256*	0.0129
	(2.60)	(2.63)	(2.23)	(2.23)	(0.98)
Gender	–0.132***	–0.135***	0.501***	0.455***	0.436***
	(–3.54)	(–3.62)	(10.55)	(13.59)	(10.54)
Education	0.503***	0.501***	0.0530***	0.0601***	0.0537***
	(18.70)	(18.63)	(10.22)	(17.60)	(13.55)
Wealth	0.0593***	0.0589***	–0.163*	–0.123**	–0.0530
	(21.10)	(20.95)	(–2.35)	(–2.77)	(–1.03)
Family size	–0.0160*	–0.0149*	–0.0428**	0.00358	0.0144
	(–2.28)	(–2.13)	(–2.80)	(0.44)	(1.52)
Employed	0.451***	0.468***	0.471***	0.449***	0.409***
	(10.45)	(10.82)	(6.23)	(8.48)	(7.01)
athrho	–0.513**	–0.499***	–0.685*	–0.509*	–0.684*
	(–2.76)	(–3.51)	(–3.51)	(–2.77)	(–3.51)
Chi²	7.92	9.66	10.07	13.94	5.54
p	0.0049	0.0019	0.0015	0.0002	0.0186
Log likelihood	–5080.0	–5644.3	–2259.588	–3807.646	–2471.669
Censored	2177	2177	670	1834	1749
Uncensored	4272	4272	1643	2302	1194

t statistics in parentheses; *, ** and *** indicate significance at the 0.05, 0.01 and 0.001 level, respectively; asterisks next to the name of a categorical variable indicate its overall significance

Table S4. Saving on MFS – M-PESA users, FinAccess data

	Urban + Rural	Urban	Rural	Rural, vulnerable
	(1)	(2)	(3)	(4)
Outcome equation				
Age	***	***	**	**
15–25	–	–	–	–
26–30	–0.0527	–0.106	–0.00634	–0.127
	(–0.94)	(–1.33)	(–0.08)	(–1.19)
31–35	–0.114	–0.142	–0.0677	–0.0897
	(–1.86)	(–1.53)	(–0.86)	(–0.83)
36–40	–0.144*	–0.198	–0.0976	–0.0937
	(–2.14)	(–1.94)	(–1.14)	(–0.79)
41–55	–0.138*	–0.306**	–0.00945	–0.0672
	(–2.28)	(–3.22)	(–0.12)	(–0.62)
Over 55	–0.377***	–0.382***	–0.349***	–0.524***
	(–5.70)	(–3.67)	(–4.18)	(–4.32)
Gender (Female = 1)	–0.0768	–0.0927	–0.0618	–0.0657
	(–1.85)	(–1.45)	(–1.17)	(–0.89)
Education	***	***	***	n.s.
Non-educated	–		–	–
Primary	–0.0747	0.164	–0.223**	–0.173
	(–1.08)	(1.25)	(–3.11)	(–1.68)
Secondary	–0.264**	–0.102	–0.385***	–0.273
	(–2.92)	(–0.68)	(–3.69)	(–1.64)
College	–0.569***	–0.489*	–0.553**	0.138
	(–4.10)	(–2.48)	(–2.68)	(0.19)
Wealth	–0.00688	–0.00713	–0.0115	–0.00673
	(–1.25)	(–0.88)	(–1.64)	(–0.62)
Family size	–0.0142	0.0139	–0.0169	–0.0274
	(–1.66)	(0.87)	(–1.69)	(–1.93)
Selection equation				
(phone ownership + M-PESA possession)				
Age	0.0536***	0.0612***	0.0517***	0.0458***
	(5.72)	(3.67)	(4.54)	(3.41)
Gender	–0.0382	–0.0724	–0.0322	0.0554
	(–1.08)	(–1.17)	(–0.74)	(1.05)
Education	0.493***	0.438***	0.483***	0.443***
	(20.03)	(10.74)	(15.17)	(10.91)
Wealth	0.0528***	0.0514***	0.0535***	0.0474***
	(19.73)	(10.85)	(16.13)	(11.92)
Family size	–0.0213**	–0.0598***	–0.00166	0.0125
	(–3.15)	(–4.27)	(–0.21)	(1.30)
Employed	0.477***	0.514***	0.463***	0.418***
	(11.16)	(7.14)	(8.51)	(6.84)
athrho	–0.912***	–0.986*	–1.030***	–0.819*
	(–4.35)	(–2.52)	(–3.77)	(–2.38)
Chi²	19.12	7.89	14.31	5.35
p	0.0000	0.0050	0.0002	0.0208
Log likelihood	–5966.443	–2260.167	–3685.604	–2373.939
Censored	2897	750	2108	1850
Uncensored	3552	1563	2028	1093

t statistics in parentheses;   *, ** and *** indicate significance at the 0.05, 0.01 and 0.001 level, respectively; asterisks next to the name of a categorical variable indicate its overall significance

Figure S1. Overview of results, FinAccess : Urban + Rural

6449

33.8 %

4272: 66.2%

45.0 %

3552: 55.0 %

74.3 %

1663: 25.7 %

All   Phone   M-PESA   Savers
           ownership   account

+Age***   +Age***   -Age***
-Gender*   +Gender*   −
+Education*** +Education*** -Education***
+Wealth***   −   −
-Family size*** −   −

−
-Gender**
+Education***
+Wealth***
-Family size***
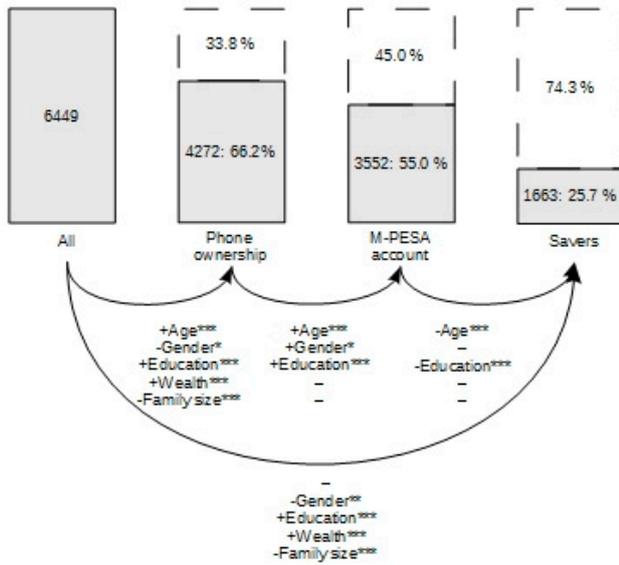
Figure S2. Overview of results, FinAccess : Urban

2313

29.0 %

1643: 71.0%

32.5 %

1563: 67.5 %

88.6 %

819: 11.4 %

All   Phone   M-PESA   Savers
           ownership   account

+Age**   +Age***   -Age**
-Gender**   −   −
+Education*** +Education*** -Education**
+Wealth***   +Wealth**   −
-Family size*** -Family size* −

−
+Education***
+Wealth***
−
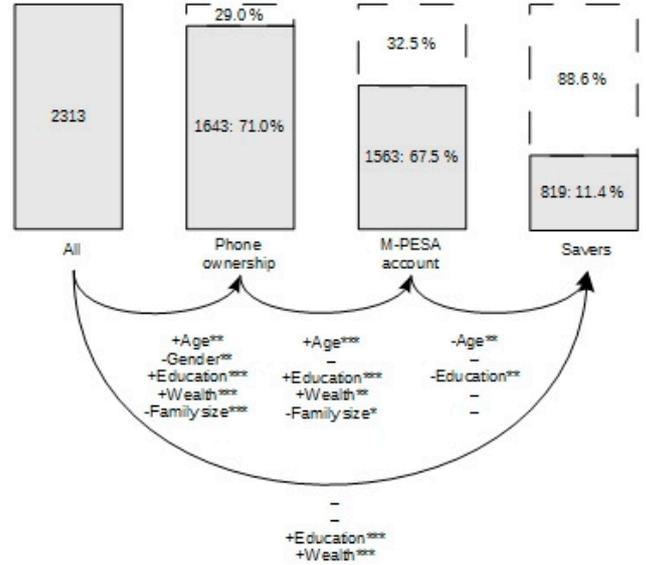
Figure S3. Overview of results, FinAccess : Rural

4094

43.8 %

2302 : 56.2%

50.5 %

2028: 49.5 %

79.4 %

844: 20.6 %

All   Phone   M-PESA   Savers
           ownership   account

+Age**   +Age***   -Age**
-Gender***   +Gender***   −
+Education*** −   -Education***
+Wealth***   −   −
−

−
−
+Education***
+Wealth***
−
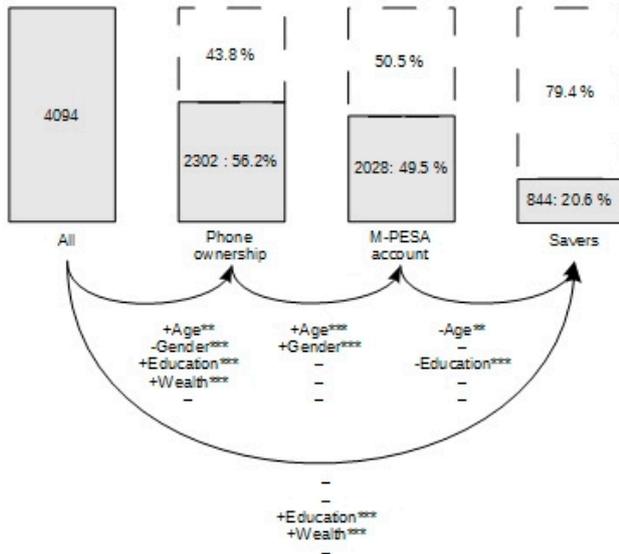
Figure S4 . Overview of results, FinAccess : Rural, vulnerable

2940

59.4 %

1194 40.6%

62.9 %

1093: 37.1 %

85.3 %

432: 14.7 %

All   Phone   M-PESA   Savers
           ownership   account

−   +Age***   -Age**
−   +Gender*   −
+Education*** −   −
+Wealth***   −   −
−

−
−
+Education***
+Wealth***
−