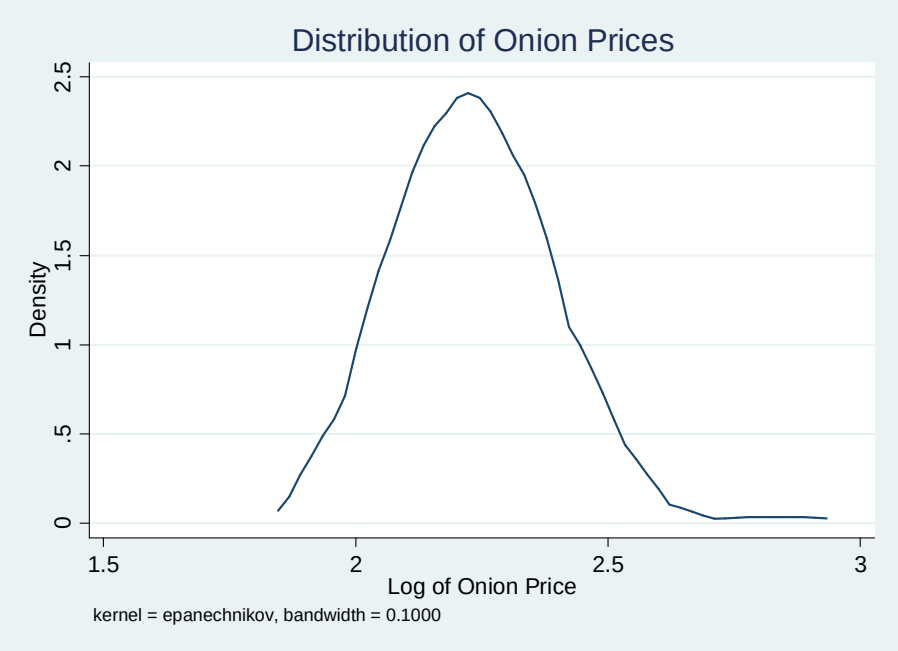
Online Appendix for "Look Who's Talking: The Impacts of the Intrahousehold Allocation of Mobile Phones on Agricultural Prices."

Additional Results

Additional Nonparametric Results

The first panel of figure 1 presents a kernel density estimate of the distribution of the logarithm of the onion price received by each respondent. The value of this exercise is apparent in two ways. First, onion prices appear to be log-normally distributed in our data, which validates our use of the logarithm of onion prices as our dependent variable. Second, the second panel of figure 1, which disaggregates the results in the first panel of figure 1 by presenting kernel density estimates of the distribution of the logarithm of the onion prices received by mobile phone ownership status, indicates that on average, the households who own a mobile phone appear to receive the same price as the household who do not own a mobile phone. Because of outliers, however, prices appear more volatile for the households who own a mobile phone than for the households who do not due own a mobile phone. It is on the basis of the second panel of figure 1 that we conduct robustness checks, so as to make sure that our empirical results are not driven by these outliers.



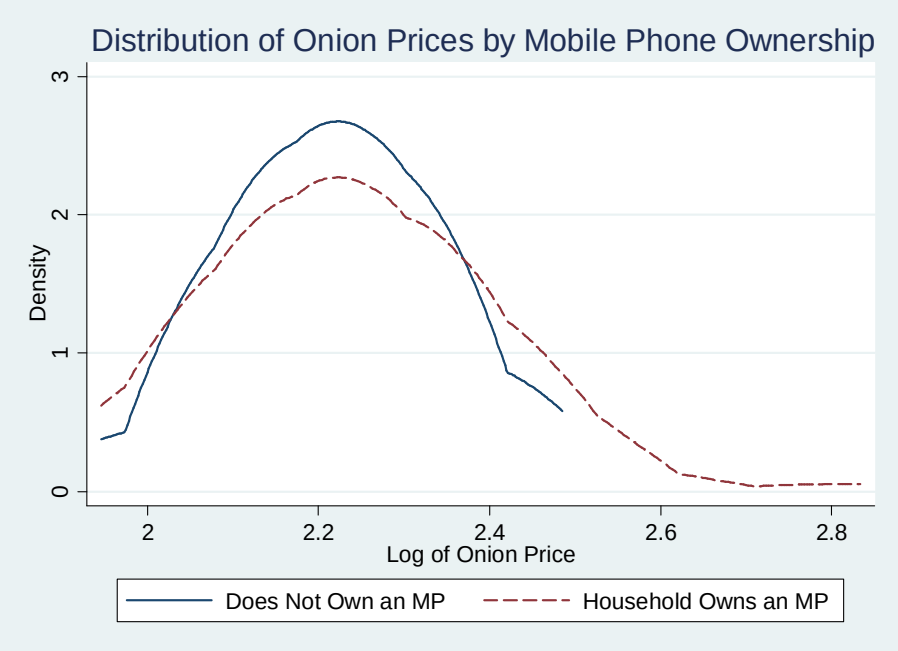


Figure 1. Kernel Density Estimates of the Distribution of Onion Prices and of the Distribution of Onion Prices by Household Mobile Phone Ownership Status with Epanechnikov Kernel and Bandwidth Equal to 0.1.

Additional Parametric Results

For robustness, we estimate a two-stage specification in which we control for each household's propensity to have a mobile phone. Table A1 presents the result of a first-stage probit regression aimed at estimating the determinants of the likelihood that a household will own a mobile phone.[1] Table A2 presents the result of a second-stage OLS regression in which the household mobile phone indicator variable used in table 4 has been replaced by the predicted probability that a household owns a mobile phone obtained from the probit specification in table A1.[2] In this case, note that the use of this method does not change the qualitative result that mobile phone ownership at the household level does not seem to be associated with higher prices. When bootstrapping the standard errors (not shown), our results are qualitatively unchanged as regards the impact of mobile phones on prices.

Tables A3 and A4 mirror the results in tables 4 and 5 in the paper, except that the results in tables A3 and A4 use bootstrapped standard errors instead of Huber-White robust standard errors. The results in table A5 rely on a randomly selected sub-sample of 90 percent of our data to gauge the robustness of our results.

[1] The indicator variable for whether the household head is female was dropped from the probit regression in appendix table A1 given that it perfectly predicts that a household will own a mobile phone. For the same reason, two observations were dropped in estimating the probit regression appendix table A1.

[2] The probit regression in appendix table A1 made correct predictions in 73 percent of cases. That is, in 69 cases out of 95, the probit regression in appendix table A1 accurately predicted that a household that did not own a mobile phone would not own a mobile phone or that a household that did own a mobile phone would own a mobile phone.

Table A1. Probit Estimation Results for the Determinant of Mobile Phone Ownership at the Household Level

Variable	
Dependent Variable: = 1 if Household Owns a Mobile Phone; = 0 Otherwise.	
Farmer Age	-0.016
	(0.014)
Farmer Single	1.532**
	(0.760)
Farmer Education	0.203***
	(0.068)
Household Size	0.265**
	(0.124)
Household Dependency Ratio	-0.006
	(0.703)
Household Income	0.002
	(0.001)
Household Landholdings	1.209
	(2.134)
Household Cultivated Area	-0.488
	(2.190)
Amortising Owner	0.716
	(0.886)
Mortgage Owner	0.193
	(0.416)
Tenant	0.167
	(0.406)
Farmer Field School	-0.518
	(0.526)
Cooperative	0.123
	(0.589)
Irrigator Association	0.403
	(0.410)
Farmer Association	-0.248
	(0.673)
Constant	-2.336**
	(1.181)
Observations	95
District Dummies	Yes
Pseudo R-squared	0.285

The symbols *, **, and *** respectively denote statistical significance at the 10, 5, and 1 percent levels. Two observations were dropped because they perfectly predicted household mobile phone ownership.

Table A2. OLS Estimation Results for the Determinants of Onion Prices Using the Predicted Probability of Household Mobile Phone Ownership

	(1)	(2)	(3)
Dependent Variable: Log of Onion Price			
Farmer Age	-0.001	-0.001	0.001
	(0.001)	(0.001)	(0.002)
Farmer Female	-0.005	-0.001	-0.059
	(0.059)	(0.064)	(0.077)
Farmer Single	0.113	0.128	-0.024
	(0.120)	(0.126)	(0.166)
Farmer Education	0.007	0.010	-0.012
	(0.009)	(0.011)	(0.017)
Household Size	0.005	0.007	-0.017
	(0.009)	(0.010)	(0.019)
Household Dependency Ratio	0.022	0.022	0.015
	(0.048)	(0.049)	(0.052)
Household Income	0.000***	0.000***	0.000
	(0.000)	(0.000)	(0.000)
Household Landholdings	0.427***	0.433***	0.397**
	(0.120)	(0.125)	(0.173)
Household Onion Area	-0.466***	-0.464***	-0.427**
	(0.123)	(0.130)	(0.187)
Amortising Owner		0.057	-0.016
		(0.054)	(0.059)
Mortgage Owner		0.014	-0.010
		(0.038)	(0.037)
Tenant		0.006	-0.016
		(0.041)	(0.041)
Farmer Field School			0.048
			(0.046)
Cooperative			0.060
			(0.047)
Irrigator Association			-0.070
			(0.050)
Farmer Association			0.053
			(0.069)
Household Mobile Phone (Predicted)	-0.080	-0.117	0.191
	(0.096)	(0.108)	(0.230)
Constant	2.212***	2.192***	2.221***
	(0.120)	(0.139)	(0.146)
Observations	95	95	95
District Dummies	Yes	Yes	Yes
R-squared	0.150	0.155	0.207

*** p<0.01, ** p<0.05, * p<0.1. Huber-White robust standard errors in parentheses.

Table A3. OLS Estimation Results for the Determinants of Onion Prices

Variable	(1)	(2)	(3)
	Dependent Variable: Log of Onion Price		
Farmer Age	-0.001	-0.001	-0.001
	(0.001)	(0.001)	(0.002)
Farmer Female	-0.013	-0.013	-0.058
	(0.088)	(0.084)	(0.097)
Farmer Single	0.107	0.116	0.085
	(0.121)	(0.122)	(0.142)
Farmer Education	0.004	0.002	-0.001
	(0.005)	(0.006)	(0.006)
Household Size	-0.006	-0.004	-0.010
	(0.009)	(0.010)	(0.011)
Household Dependency Ratio	0.019	0.016	-0.002
	(0.050)	(0.053)	(0.056)
Household Income	0.000	0.000	0.000
	(0.000)	(0.000)	(0.000)
Household Landholdings	0.458	0.473	0.481
	(0.609)	(0.317)	(0.476)
Household Onion Area	-0.534	-0.542*	-0.505
	(0.607)	(0.317)	(0.481)
Amortising Owner		0.045	0.029
		(0.059)	(0.061)
Mortgage Owner		-0.005	-0.006
		(0.045)	(0.046)
Tenant		-0.029	-0.030
		(0.040)	(0.040)
Farmer Field School			0.029
			(0.044)
Cooperative			0.062
			(0.062)
Irrigator Association			-0.054
			(0.042)
Farmer Association			0.081
			(0.088)
Household Mobile Phone	0.010	0.008	0.026
	(0.029)	(0.030)	(0.035)
Constant	2.262***	2.287***	2.253***
	(0.097)	(0.122)	(0.130)
Observations	95	95	95
District Dummies	Yes	Yes	Yes
Bootstrap Repetitions	1000	1000	1000
R-squared	0.188	0.199	0.269

*** p<0.01, ** p<0.05, * p<0.1. Bootstrapped standard errors in parentheses.

Table A4. OLS Estimation Results for the Determinants of Onion Prices Controlling for the Intrahousehold Allocation of Mobile Phones

Variable	(1)	(2)	(3)
	Dependent Variable: Log of Onion Price		
Farmer Age	-0.000	-0.000	0.000
	(0.001)	(0.002)	(0.002)
Farmer Female	0.004	0.001	-0.051
	(0.088)	(0.097)	(0.112)
Farmer Single	0.096	0.105	0.080
	(0.118)	(0.129)	(0.142)
Farmer Education	0.000	-0.000	-0.003
	(0.006)	(0.006)	(0.007)
Household Size	-0.002	-0.000	-0.008
	(0.009)	(0.010)	(0.012)
Household Dependency Ratio	-0.007	-0.010	-0.025
	(0.054)	(0.056)	(0.065)
Household Income	0.000	0.000	0.000
	(0.000)	(0.000)	(0.000)
Household Landholdings	0.527	0.536	0.523
	(0.448)	(0.429)	(0.665)
Household Cultivated Area	-0.601	-0.606	-0.545
	(0.449)	(0.431)	(0.667)
Amortising Owner		0.061	0.037
		(0.065)	(0.066)
Mortgage Owner		-0.017	-0.020
		(0.044)	(0.043)
Tenant		-0.010	-0.015
		(0.041)	(0.042)
Farmer Field School			0.041
			(0.049)
Cooperative			0.048
			(0.067)
Irrigator Association			-0.058
			(0.041)
Farmer Association			0.055
			(0.079)
Farmer Mobile Phone	0.053*	0.054*	0.053*
	(0.032)	(0.032)	(0.032)
Spouse Mobile Phone	0.040	0.039	0.063*
	(0.036)	(0.039)	(0.038)
Children Mobile Phone	-0.037	-0.040	-0.029
	(0.040)	(0.044)	(0.054)
Constant	2.238***	2.246***	2.211***
	(0.103)	(0.124)	(0.134)
Observations	95	95	95
District Dummies	Yes	Yes	Yes
Bootstrap Repetitions	1000	1000	1000
R-squared	0.231	0.239	0.308

*** p<0.01, ** p<0.05, * p<0.1. Bootstrapped standard errors in parentheses.

Table A5. Robustness Checks for the Determinants of Onion Prices Controlling for the Intrahousehold Allocation of Mobile Phones

Variable	(1)
Dependent Variable: Log of Onion Price	
Farmer Age	-0.000
	(0.002)
Farmer Female	-0.096
	(0.064)
Farmer Single	0.051
	(0.142)
Farmer Education	-0.004
	(0.008)
Household Size	-0.003
	(0.012)
Household Dependency Ratio	0.018
	(0.062)
Household Income	0.000**
	(0.000)
Household Landholdings	0.495**
	(0.201)
Household Cultivated Area	-0.508**
	(0.212)
Amortising Owner	0.050
	(0.078)
Mortgage Owner	-0.015
	(0.036)
Tenant	-0.021
	(0.043)
Farmer Field School	0.043
	(0.041)
Cooperative	0.089
	(0.068)
Irrigator Association	-0.079*
	(0.041)
Farmer Association	0.052
	(0.073)
Farmer Mobile Phone	0.062*
	(0.034)
Spouse Mobile Phone	0.060
	(0.045)
Children Mobile Phone	-0.015
	(0.051)
Constant	2.217***
	(0.151)
Observations	86
R-squared	0.281

*** p<0.01, ** p<0.05, * p<0.1. Robust standard errors in parentheses. The number of observations drops to 86 because this represents 90 percent of our overall sample.