

Appendix

Supplementary Tables

Supplementary Table 1 - Selected Characteristics of ANCSA Regional Corporation

ANCSA Region	2021			
	Revenue	Median Household Income	Households Without Plumbing	Population*
Ahtna	\$324,071,788	\$65,387	12%	2,846
Aleut	\$231,893,388	\$85,649	3%	8,660
ASRC	\$3,876,830,000	\$83,992	11%	10,865
BSNC	\$468,215,000	\$63,977	24%	1,070
BBNC	\$2,162,939,000	\$61,250	11%	6,618
Calista	\$722,630,000	\$51,300	29%	26,868
Chugach	\$783,000,000	\$75,469	2%	11,582
CIRI	\$611,749,000	\$84,061	2%	453,589
Doyon	\$283,000,000	\$75,262	7%	111,430
Koniag	\$464,068,000	\$83,765	0.2%	13,218
NANA	\$1,769,700,000	\$68,654	20%	7,776
Sealaska	\$697,000,000**	\$78,789	2%	70,984
Alaska	-	\$80,287	3.6%	735,951
Sources: AlaskaBusiness 2022, 2021 ACS 5-Year Estimates B25049, S1901, B01003 * Population living in the region of the ANCSA corporation including non-shareholders **2020 Revenue from Annual Report. Information on 2021 revenue is unavailable				

**Supplementary Table 2** - Complete results of Fixed Effects estimates with standard errors and non-significant coefficients

What impacts differences in Residential Payments within Villages?	<u>Variation</u>			<u>ANCSA-Corporation Dividend</u>			<u>CDQ</u>	
	(1) Combined	(2) Low	(3) High	(4) April	(5) Feb, June, Dec	(6) March & Sep, Dec	(7) Non-CDQ	(8) CDQ
<b>Month (Base = Oct)</b>								
January	-7,210.29*** (977.42)	-2,503.48** (1,142.88)	-12,056.36*** (1,139.46)	-5,221.93*** (941.48)	-8,832.34*** (1,742.24)	-14,799.47*** (2,274.81)	-5,651.47*** (1,190.33)	-11,691.02*** (1,492.15)
February	-5,403.81*** (1,123.12)	-2,474.21** (1,145.51)	-8,330.14*** (1,319.43)	-5,472.74*** (874.74)	-6,706.68*** (2,149.87)	-9,248.26*** (2,278.02)	-4,449.82*** (1,346.10)	-8,425.25*** (1,241.41)
March	-4,645.08*** (1,135.95)	-2,532.94** (1,140.82)	-7,371.76*** (1,392.58)	-3,718.82*** (914.33)	-7,537.74*** (1,965.79)	-8,447.74** (3,218.06)	-4,975.17*** (1,300.01)	-6,350.37** (2,566.55)
April	-6,291.85*** (813.27)	-3,889.64*** (903.59)	-8,994.70*** (846.21)	-4,444.29*** (677.81)	-7,161.39*** (1,492.67)	-12,077.63*** (1,638.34)	-5,185.84*** (1,066.51)	-9,467.80*** (1,150.68)
May	-7,456.35*** (735.61)	-4,627.87*** (877.86)	-10,786.18*** (823.15)	-6,352.41*** (783.26)	-6,708.74*** (1,420.94)	-12,516.61*** (1,402.35)	-4,990.62*** (945.35)	-12,305.77*** (1,115.37)
June	-6,768.12*** (734.33)	-4,143.52*** (847.13)	-9,750.12*** (787.47)	-6,452.40*** (607.06)	-4,688.27*** (1,681.41)	-10,178.69*** (1,715.72)	-4,297.89*** (1,088.96)	-11,158.17*** (770.02)
July	-6,096.36*** (804.61)	-4,248.98*** (1,092.46)	-7,557.75*** (1,069.15)	-5,166.73*** (824.29)	-4,400.36** (1,873.97)	-6,233.08*** (2,341.35)	-3,753.04*** (1,095.48)	-8,107.10*** (1,400.52)
August	-6,540.13*** (796.36)	-4,405.28*** (925.80)	-8,007.79*** (1,047.66)	-5,451.65*** (871.88)	-4,898.85*** (1,216.05)	-7,298.68*** (2,377.87)	-4,212.18*** (877.42)	-8,245.85*** (1,547.69)
September	-6,477.64*** (943.79)	-4,703.00*** (1,126.33)	-8,007.68*** (882.43)	-5,423.59*** (665.54)	-6,351.39*** (2,073.22)	-7,062.01*** (2,032.10)	-4,575.36*** (1,382.52)	-8,089.37*** (1,226.38)



Households (H)	12.27 (22.54)	-5.14 (46.09)	-40.99 (36.48)	22.86 (57.72)	-81.25** (37.91)	-61.57 (53.23)	-65.74** (27.45)	-75.97 (56.97)
Household Wage (HW)	-0.01 (0.40)	0.84** (0.40)	-3.12*** (1.07)	-2.96* (1.50)	1.16*** (0.41)	-5.68*** (2.08)	0.56* (0.32)	-6.50*** (1.97)
Temperature (T)	18.18 (43.24)	82.20* (43.02)	-53.61 (58.93)	111.27** (46.10)	-107.16 (74.68)	-193.43 (146.25)	-37.20 (42.69)	31.63 (91.57)
Prob > F	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Within-R <sup>2</sup>	0.2006	0.2029	0.3056	0.2731	0.3431	0.2491	0.2499	0.2941
Observations	1020	510	510	444	336	240	636	384
Villages	18	9	9	8	6	4	11	7
*** 0.01, ** 0.05, *0.1								

**Supplementary Table 3** –Fixed Effects estimates with standard errors and non-significant coefficients of delinquency rates by customer type

Delinquency Rate			
	Residential	Commercial	School
Month (Base = Oct)			
January	0.56*** (0.07)	0.74 (0.58)	2.50 (1.94)
February	0.47*** (0.06)	1.38** (0.53)	2.67 (1.94)
March	0.42*** (0.06)	1.05* (0.54)	2.34 (1.95)

	April	0.49***	0.72	2.48
		(0.07)	(0.67)	(1.94)
	May	0.55***	1.37**	2.50
		(0.08)	(0.53)	(1.95)
	June	0.50***	0.86	0.91
		(0.06)	(0.60)	(2.03)
	July	0.46***	1.02*	2.44
		(0.06)	(0.55)	(2.02)
	August	0.49***	1.14*	2.76
		(0.07)	(0.61)	(2.01)
	September	0.52***	1.32**	2.42
		(0.07)	(0.61)	(2.11)
	November	0.53***	1.21*	2.49
		(0.09)	(0.64)	(2.12)
	December	0.54***	1.10**	2.00
		(0.06)	(0.52)	(1.89)
<b>Year (Base = 2012)</b>				
	2013	-0.04	0.12	0.02
		(0.03)	(0.18)	(0.37)
	2014	0.00	0.00	0.05
		(0.03)	(0.18)	(0.33)
	2015	0.01	0.39***	0.14
		(0.03)	(0.13)	(0.35)

2016	0.05*	0.32**	-1.05
	(0.03)	(0.15)	(0.77)
Prob > F	0.0000	0.0000	0.0004
Within-R <sup>2</sup>	0.1528	0.0241	0.0197
*** 0.01, ** 0.05, *0.1			

We estimate fixed effects for residential, commercial, and school delinquency rates. We calculate delinquency rates by subtracting from one the quotient of payments received over the amount billed. We explore the monthly variations in these rates by using the following approach:

$$(1) \text{Delinquency}_{it} = \beta_0 + \beta_1 M_{it} + \beta_2 Y_{it} + a_i + \mu_{it}$$

Where i denotes village, t is the time period, M month and Y is year. Estimates for each customer group are estimated in separate models.

**Supplementary Table 4** - Complete results of Random Effects estimates with standard errors and non-significant coefficients

What impacts differences in Residential Payments between Villages?	<u>Variation</u>			<u>ANCSA-Corporation Dividend</u>			<u>CDQ</u>	
	(1) Combined	(2) Low	(3) High	(4) April	(5) Feb, June, Dec	(6) March & Sep, Dec	(7) Non-CDQ	(8) CDQ

Month (Base = Oct)								
January	-7,252.13***	-3,850.14***	-11,756.08***	-5,372.74***	-9,286.26***	-12,878.01***	-6,145.82***	-11,046.28***
	(983.31)	(1,197.10)	(983.15)	(1,075.20)	(2,074.77)	(1,928.24)	(1,256.93)	(1,279.43)
February	-5,434.70***	-3,812.37***	-8,165.07***	-5,548.25***	-7,037.34***	-7,060.98***	-4,845.62***	-7,770.80***
	(1,121.03)	(1,177.90)	(1,265.63)	(877.07)	(2,474.56)	(2,217.81)	(1,383.38)	(1,215.84)
March	-4,629.97***	-3,545.10***	-6,699.34***	-3,922.68***	-7,871.91***	-6,676.32**	-5,360.50***	-5,687.80**
	(1,119.53)	(1,059.00)	(1,344.85)	(952.76)	(2,021.36)	(2,953.89)	(1,320.19)	(2,405.32)
April	-6,259.22***	-4,697.93***	-8,421.57***	-4,487.32***	-7,543.25***	-10401.12***	-5,502.53***	-8,760.54***
	(798.41)	(910.94)	(829.11)	(692.61)	(1,530.53)	(1,563.49)	(1,112.26)	(946.32)
May	-7,366.50***	-5,023.65***	-9,993.02***	-6,242.76***	-6,923.52***	-11058.87***	-5,022.56***	-11,544.73***
	(727.40)	(875.09)	(807.73)	(722.32)	(1,419.47)	(1,458.00)	(987.11)	(1,031.52)
June	-6,631.72***	-4,223.78***	-8,704.63***	-6,192.39***	-4,772.91***	-9,074.15***	-4,213.09***	-10,378.06***
	(711.69)	(900.96)	(735.65)	(596.98)	(1,718.07)	(1,724.40)	(1,037.43)	(802.82)
July	-6,155.61***	-3,578.98***	-8,598.77***	-5,458.17***	-4,632.84**	-7,318.33***	-3,528.13***	-9,801.64***
	(810.69)	(1,232.13)	(1,025.90)	(625.12)	(1,986.47)	(2,263.42)	(1,110.67)	(1,151.45)
August	-6,598.23***	-3,771.44***	-9,045.96***	-5,688.09***	-4,956.89***	-8,434.19***	-3,899.11***	-9,795.10***
	(774.62)	(734.81)	(978.30)	(627.71)	(1,267.83)	(2,268.01)	(835.92)	(1,302.28)
September	-6,569.24***	-4,183.35***	-9,065.26***	-5,636.06***	-6,692.76***	-7,908.42***	-4,407.47***	-9,565.16***
	(948.67)	(1,059.42)	(850.43)	(432.34)	(1,960.28)	(1,999.48)	(1,358.98)	(993.10)
November	-6,779.93***	-3,278.99**	-10,516.14***	-4,766.58***	-8,536.51***	-11,050.86***	-5,644.10***	-9,594.68***
	(1,289.75)	(1,368.78)	(1,158.49)	(988.64)	(2,480.10)	(1,532.24)	(1,534.28)	(1,237.86)
December	-7,118.41***	-4,696.79***	-10,370.32***	-5,388.82***	-9,985.37***	-11,033.96***	-6,368.74***	-10096.61***
	(975.08)	(1,225.85)	(740.18)	(1,072.52)	(2,153.66)	(1,929.16)	(1,353.10)	(1,253.73)

Year (Base = 2012)									
2013	1,156.38**	1,496.26**	1,469.24**	1,037.86**	3,476.94***	-697.50	1,744.11**	229.86	
	(520.46)	(659.54)	(624.59)	(443.69)	(1,065.57)	(883.66)	(657.46)	(501.01)	
2014	1,800.48***	2,522.45***	1,513.32**	922.29*	4,575.61***	-619.85	2,412.83***	612.81	
	(447.28)	(587.53)	(617.82)	(465.49)	(1,249.90)	(842.51)	(560.29)	(747.97)	
2015	652.36	1,102.04	511.89	616.07	1,565.61	-2,172.55*	445.87	336.23	
	(497.82)	(698.48)	(590.32)	(425.31)	(1,135.24)	(1,227.51)	(638.57)	(630.84)	
2016	600.98	1,275.51**	550.26	274.82	2,042.43*	-2,357.82*	893.95*	138.36	
	(418.28)	(629.18)	(607.78)	(460.29)	(1,104.26)	(1,291.54)	(508.16)	(711.89)	
<b>Public Utilities</b>									
Residential (P)	29.03***	33.38***	35.44***	19.22***	16.59***	58.67***	28.61***	53.43***	
	(8.47)	(4.75)	(4.75)	(4.67)	(5.02)	(11.45)	(3.34)	(4.82)	
School Pay (S)	0.31***	0.46***	0.13**	0.05	0.76***	0.15	0.61***	-0.03	
	(0.06)	(0.11)	(0.05)	(0.04)	(0.21)	(0.13)	(0.12)	(0.06)	
Commercial (C)	0.04**	0.03	0.08**	-0.02	0.13*	0.06	0.09**	0.04	
	(0.02)	(0.03)	(0.04)	(0.03)	(0.08)	(0.04)	(0.04)	(0.03)	
Electr. Cost (E <sub>c</sub> )	4.83	5.14	11.64**	15.14***	5.19	-18.57**	2.71	9.23	
	(3.77)	(4.62)	(5.30)	(5.44)	(4.38)	(7.19)	(3.57)	(6.50)	
<b>SocioEcon</b>									
Households (H)	62.02***	83.17***	116.40***	118.24***	103.30***	86.82***	90.68***	94.93***	
	(20.76)	(9.62)	(6.95)	(5.19)	(16.42)	(17.68)	(12.96)	(8.11)	
Household Wage (HW)	15.32	42.88	-45.78	75.71	-101.61	-181.21	-46.73	25.50	
	(42.25)	(40.95)	(56.61)	(50.23)	(87.01)	(137.28)	(38.75)	(94.42)	



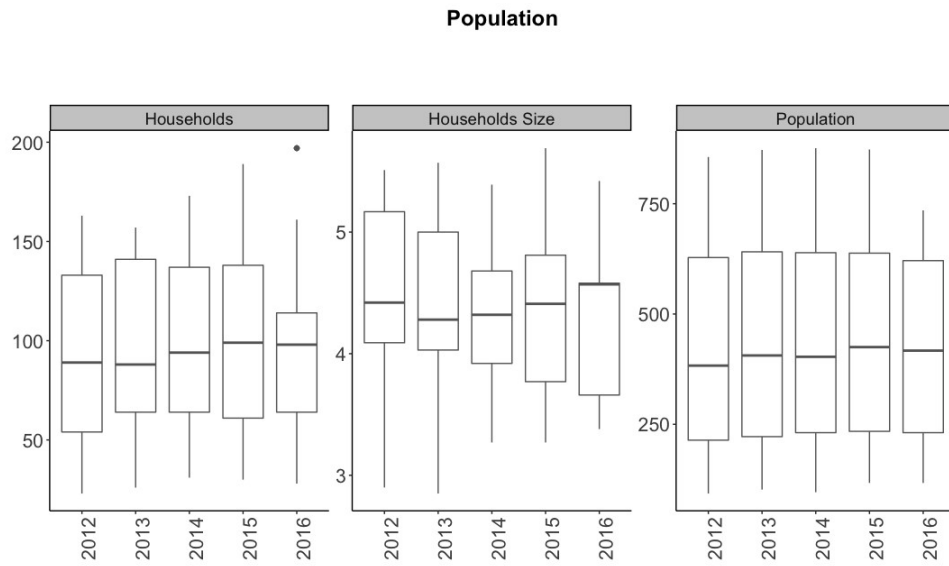
Temperature (T)	18.18 (43.24)	82.20* (43.02)	-53.61 (58.93)	111.27** (46.10)	-107.16 (74.68)	-193.43 (146.25)	-37.20 (42.69)	31.63 (91.57)
Prob > F	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Overall-R <sup>2</sup>	0.5192	0.5436	0.5663	0.5605	0.6352	0.4957	0.6255	0.4614
Observations	1,020	510	510	444	336	240	636	384
Villages	18	9	9	8	6	4	11	7
*** 0.01, ** 0.05, *0.1								

**Supplementary Table 5** – Result of linear regression investigating the seasonality of household wages

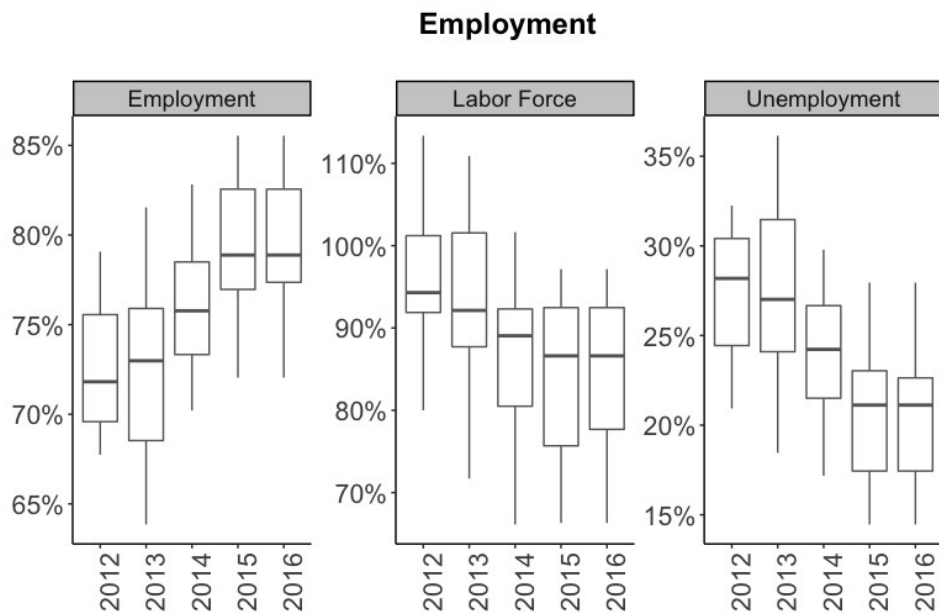
How do household wages vary over time?	<u>Variation</u>			<u>ANCSA-Corporations Dividend</u>			<u>CDQ</u>	
	(1) Combined	(2) Low	(3) High	(4) April	(5) Feb, June, Dec	(6) March & Sep, Dec	(7) Non-CDQ	(8) CDQ
<b>Month (Base = Jan)</b>								
February	-11.70	-12.22	-11.19	-9.87	-15.09	-10.26	-12.20	-10.85
	(135.07)	(236.71)	(130.75)	(177.45)	(197.21)	(152.91)	(195.98)	(146.52)
March	-25.96	-26.59	-25.34	-22.14	-32.96	-23.05	-26.84	-24.47
	(135.07)	(236.71)	(130.75)	(177.45)	(197.21)	(152.91)	(195.98)	(146.52)
April	-26.28	-27.03	-25.52	-21.97	-33.56	-23.82	-27.41	-24.33
	(135.07)	(236.71)	(130.75)	(177.45)	(197.21)	(152.91)	(195.98)	(146.52)
May	-39.43	-40.12	-38.74	-34.46	-49.30	-34.54	-40.21	-38.10
	(135.07)	(236.71)	(130.75)	(177.45)	(197.21)	(152.91)	(195.98)	(146.52)
June	-44.68	-45.57	-43.78	-39.38	-55.73	-38.75	-45.38	-43.48
	(135.07)	(236.71)	(130.75)	(177.45)	(197.21)	(152.91)	(195.98)	(146.52)
July	469.77***	502.20**	432.06***	439.13**	561.71***	442.76***	492.68**	441.40***
	(134.28)	(235.35)	(129.99)	(175.12)	(197.21)	(152.91)	(195.98)	(144.31)
August	466.95***	499.11**	429.52***	437.19**	557.82***	439.77***	489.58**	439.03***
	(134.28)	(235.35)	(129.99)	(175.12)	(197.21)	(152.91)	(195.98)	(144.31)
September	477.18***	519.26**	425.21***	433.53**	557.53***	435.50***	505.20***	434.91***
	(133.90)	(234.05)	(129.99)	(175.12)	(195.52)	(152.91)	(195.08)	(144.31)
October	199.47	218.02	173.55	167.29	217.35	257.76*	213.92	180.60
	(134.29)	(235.40)	(129.99)	(175.12)	(197.26)	(152.91)	(196.00)	(144.31)

	November	208.87 (134.29)	227.80 (235.40)	182.56 (129.99)	175.25 (175.12)	229.37 (197.26)	266.23* (152.91)	223.70 (196.00)	189.39 (144.31)
	December	215.70 (134.29)	234.76 (235.40)	189.28 (129.99)	181.27 (175.12)	237.84 (197.26)	272.34* (152.91)	230.67 (196.00)	196.01 (144.31)
<b>Year (Base = 2012)</b>									
	2013	-95.30 (88.27)	-175.66 (153.11)	-28.28 (86.48)	257.34** (118.41)	-454.02*** (126.82)	-259.86*** (98.70)	-189.41 (126.19)	84.22 (98.34)
	2014	-298.98*** (87.65)	-518.49*** (153.11)	-77.69 (85.21)	269.40** (116.47)	-969.78*** (126.82)	-349.88*** (98.70)	-476.39*** (126.19)	33.19 (96.48)
	2015	-268.11*** (87.37)	-357.82** (154.21)	-178.21** (84.04)	177.27 (114.80)	-693.71*** (128.21)	-383.26*** (98.70)	-402.77*** (126.92)	-3.71 (94.92)
	2016	-241.94*** (88.27)	-345.87** (157.50)	-132.90 (84.04)	158.83 (114.80)	-378.70*** (132.65)	-510.58*** (98.70)	-318.65** (129.20)	-56.80 (94.92)
	Prob > F	0.000	0.003	0.000	0.004	0.000	0.000	0.000	0.000
	R²	0.0682	0.0666	0.1016	0.0742	0.2426	0.2374	0.0706	0.1085
	Villages	18	9	9	8	6	4	11	7
*** 0.01, ** 0.05, *0.1									

## Supplementary Figures



**Supplementary Figure 1** - Boxplots showing the number of households, household size, and population in the 18 villages in the panel data set from 2012 to 2016.

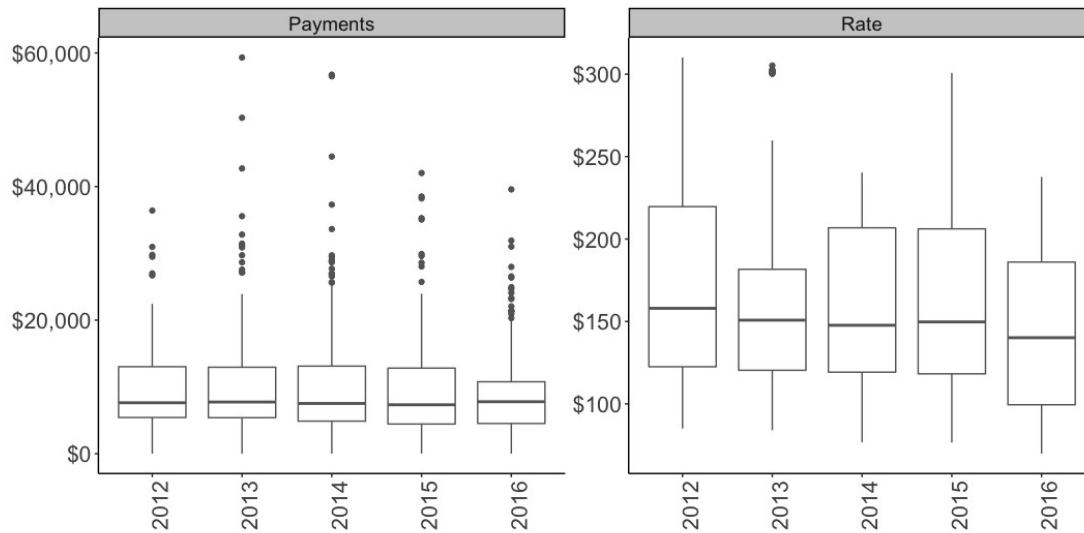


**Supplementary Figure 2** - Boxplots showing the employment, unemployment, and labor force participation rates in the 18 villages in the panel data set from 2012 to 2016.



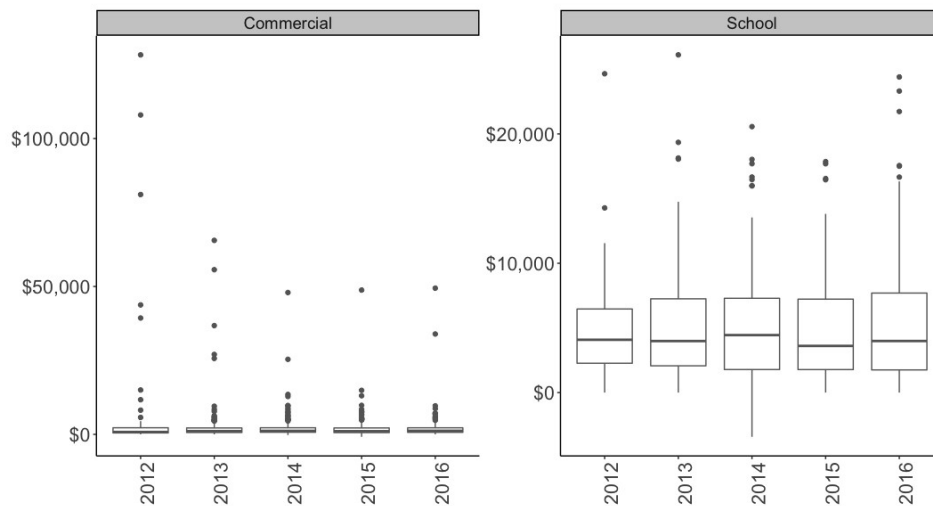
**Supplementary Figure 3** - Boxplots showing wages per capita, per household and per village in the 18 villages in the panel data set from 2012 to 2016.

### Water & Sewer - Residential

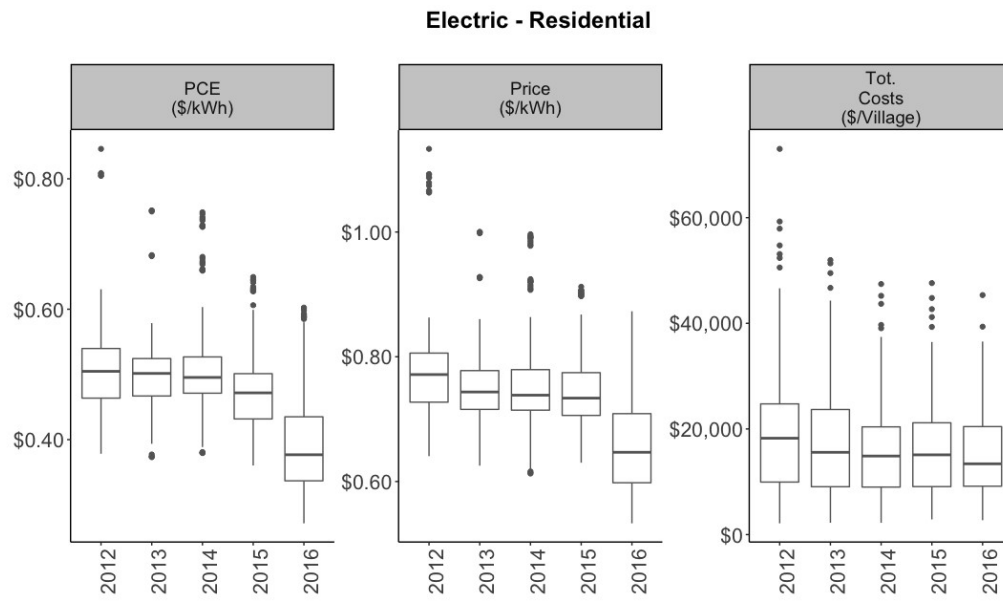


**Supplementary Figure 4** - Boxplots showing residential payments and residential rates for water utilities in the 18 villages in the panel data set from 2012 to 2016.

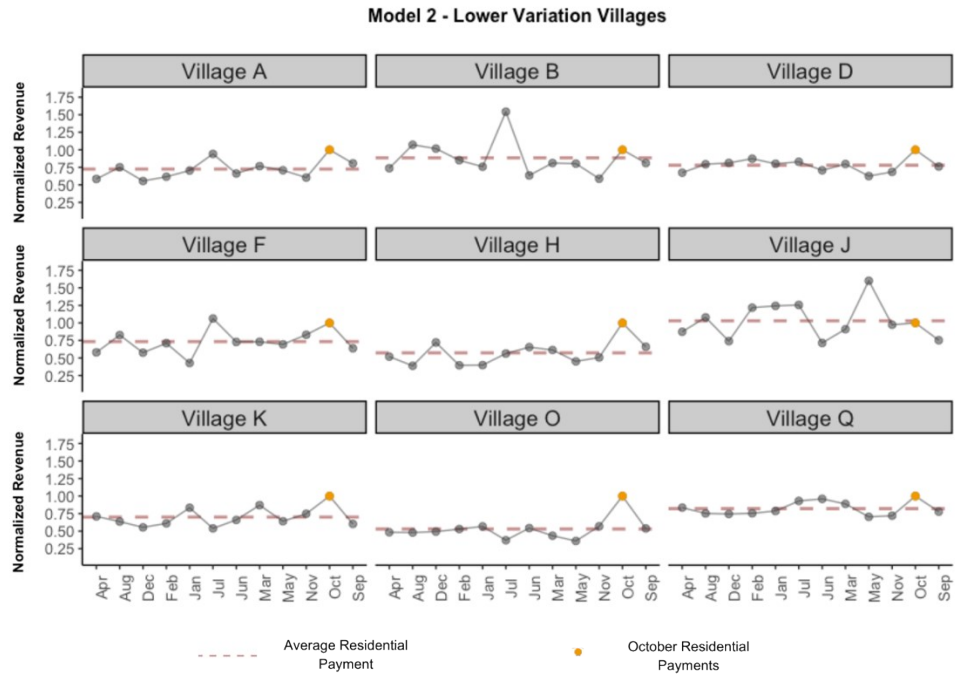
### Water and Sewer - Payments



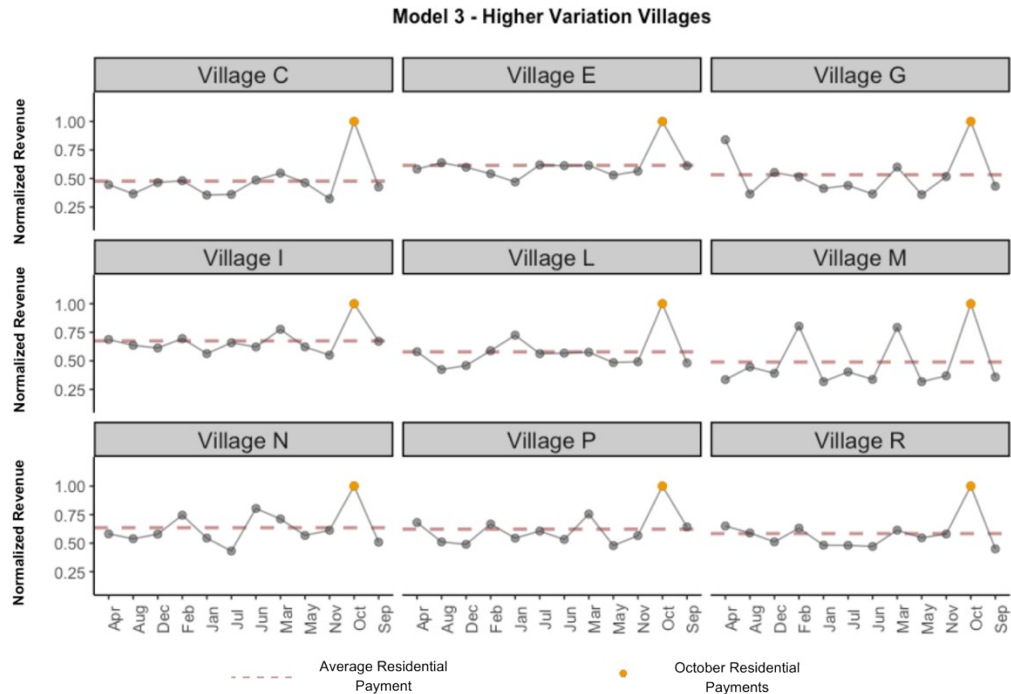
**Supplementary Figure 5** - Boxplots showing the commercial and school payments for water utilities in the 18 villages in the panel data set from 2012 to 2016.



**Supplementary Figure 6** - Boxplots showing the subsidized electric rate (PCE), unsubsidized rate (Price) and total residential costs of electricity per village in the 18 villages in the panel data set from 2012 to 2016.

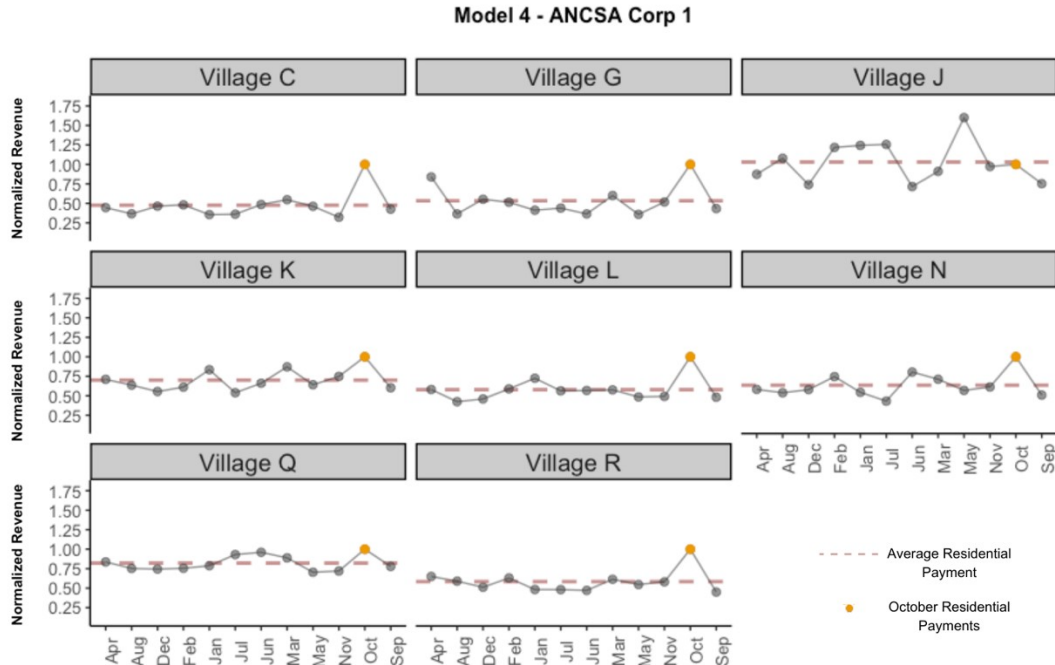


**Supplementary Figure 7** - Average monthly payment for each village in Model 2. The average monthly residential payments are divided by October payments to normalize the values. Revenue in October is always equal to 1.



**Supplementary Figure 8** - Average monthly payment for each village in Model 3. The average monthly residential payments are divided by October payments to normalize the values. Revenue in October is always equal to 1.

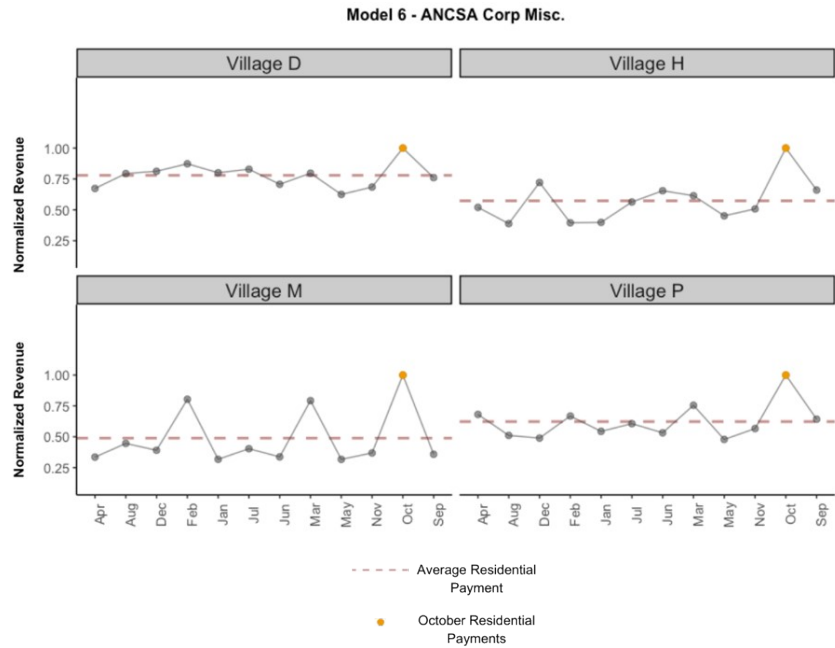




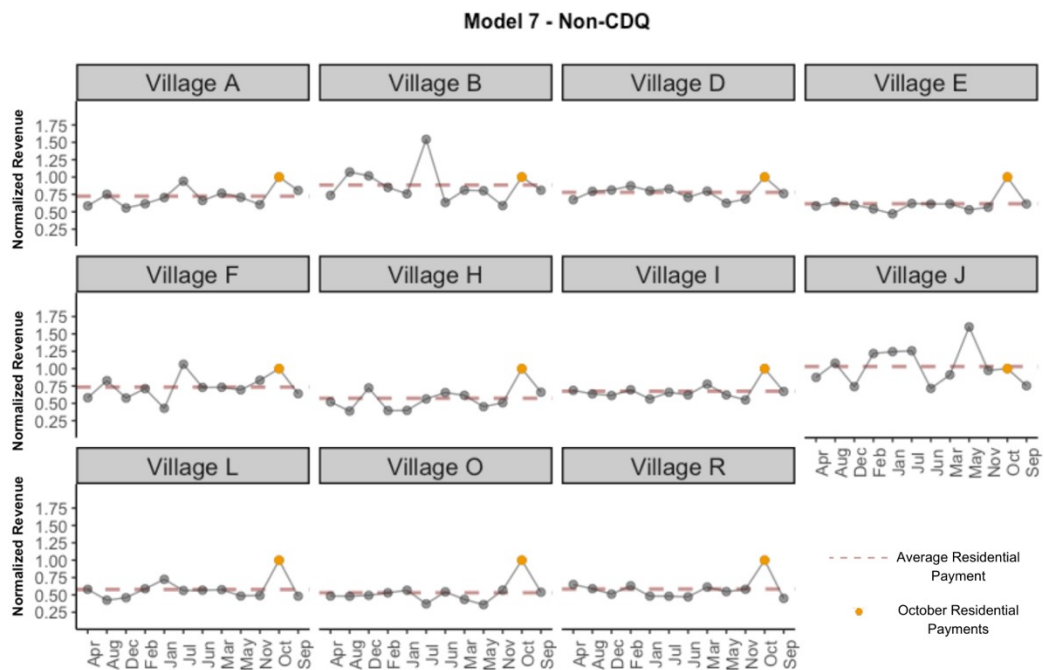
**Supplementary Figure 9** - Average monthly payment for each village in Model 4. The average monthly residential payments are divided by October payments to normalize the values. Revenue in October is always equal to 1.



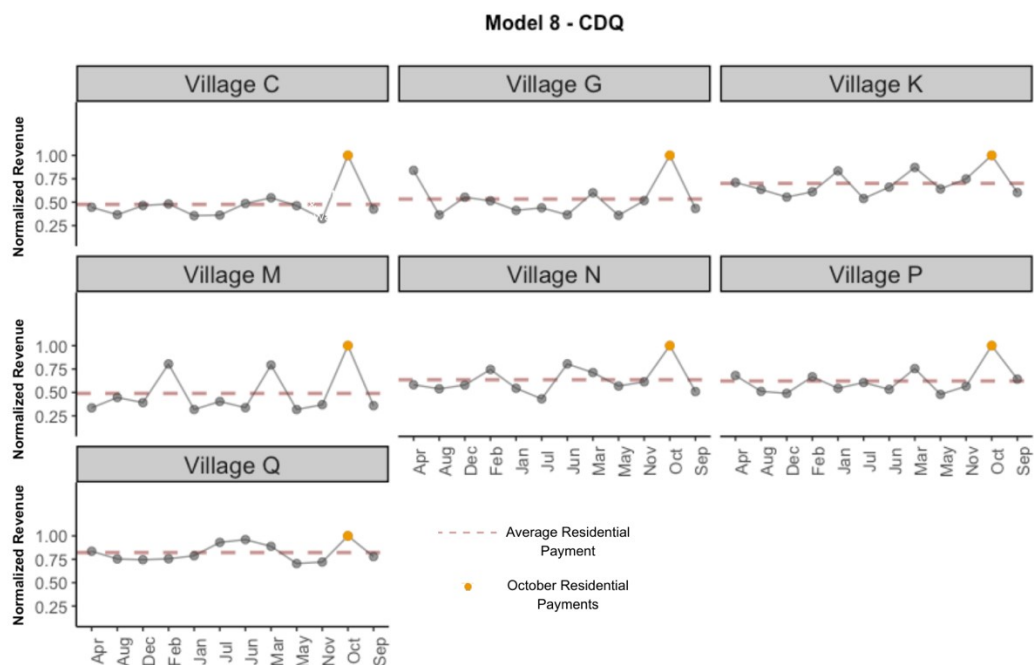
**Supplementary Figure 10** - Average monthly payment for each village in Model 5. The average monthly residential payments are divided by October payments to normalize the values. Revenue in October is always equal to 1.



**Supplementary Figure 11** - Average monthly payment for each village in Model 6. The average monthly residential payments are divided by October payments to normalize the values. Revenue in October is always equal to 1.



**Supplementary Figure 12** - Average monthly payment for each village in Model 7. The average monthly residential payments are divided by October payments to normalize the values. Revenue in October is always equal to 1.



**Supplementary Figure 13** - Average monthly payment for each village in Model 8. The average monthly residential payments are divided by October payments to normalize the values. Revenue in October is always equal to 1.