Determinants of bank branch outreach

Haoua

2025-05-21

Employment (Section 4):

Descriptive Statistics for Employment Variables

Predictor	Meaning of Predictor	Mode	Mean	Std. Deviation	Minimum	Maxin
s04q18a	Branch of activity	1.000	2.153	1.534	0.000	10.0
s04q18b	Socioprofessional category	9.000	8.434	0.996	2.000	11.0
s04q28a	Main occupation	2.559	2.048	0.710	1.000	5.00
s04q28b	Secondary occupation	7.518	7.568	1.096	1.000	9.00
s04q29b	Employment code	6.000	5.948	0.320	4.771	8.37
s04q30c	Activity code	1.000	17.214	14.275	1.000	65.3
s04q42	Payslip received?	2.000	1.747	0.223	1.000	2.00
s04q43	Salary amount	136,170.362	84,904.506	75,394.815	0.000	775,72
s04q58	Annual income from work	82,479.804	73,150.314	57,416.993	0.000	1,200,00

OLS Regression Results - Employment Variables

Predictor	Estimate	Std. Error	t-value	p-value	Meaning of Predictor	Significant
(Intercept)	401.417	953.881	0.421	0.674	Intercept	Not Significant
s04q18a	-0.297	30.975	-0.010	0.992	Branch of activity	Not Significant
s04q18b	-20.193	44.349	-0.455	0.649	Socioprofessional category	Not Significant
s04q28a	-9.231	60.032	-0.154	0.878	Main occupation	Not Significant
s04q28b	10.329	36.814	0.281	0.779	Secondary occupation	Not Significant
s04q29b	-54.441	135.810	-0.401	0.689	Employment code	Not Significant
s04q30c	12.501	3.351	3.730	0.000	Activity code	Significant
s04q42	-66.261	185.685	-0.357	0.721	Payslip received?	Not Significant
s04q43	0.000	0.001	0.087	0.931	Salary amount	Not Significant

| s04q58 | 0.000 | 0.001 | 0.245 | 0.806 | Annual income from work | Not Significant |

Saving and Credits (Section 6):

Descriptive Statistics for Saving and Credits

Predictor	Meaning of Predictor	Mode	Mean	Std. Deviation	Minimum	Maximum
s06q01___1	Bank account	2.000	1.107	0.962	0.000	2.000
s06q01___2	Postal account	2.000	1.109	0.989	0.000	2.000
s06q01___3	Microfinance account	2.000	1.098	0.967	0.000	2.000
s06q01___4	Mobile money	2.000	1.151	0.766	0.000	2.000
s06q01___5	Prepaid card	2.000	1.113	0.986	0.000	2.000
s06q02	Saved money	1.405	1.623	0.222	1.000	2.000
s06q03	Requested credit	2.000	1.980	0.029	1.720	2.000
s06q05	Took out a loan	1.333	1.264	0.192	1.000	2.000
s06q07	Member of a tontine	2.000	1.878	0.104	1.375	2.000
s06q12	Source of loan	6.000	4.695	1.313	1.000	10.000

OLS Regression Results - Saving and Credits

Predictor	Estimate	Std. Error	t-value	p-value	Meaning of Predictor	Significance
(Intercept)	2,142.028	2,973.805	0.720	0.471	Intercept	Not Significant
s06q01___1	4,365.010	1,054.916	4.138	0.000	Bank account	Significant
s06q01___2	-5,172.986	1,809.599	-2.859	0.004	Postal account	Significant
s06q01___3	524.468	940.918	0.557	0.577	Microfinance account	Not Significant
s06q01___4	-126.224	220.273	-0.573	0.567	Mobile money	Not Significant
s06q01___5	441.265	1,512.821	0.292	0.771	Prepaid card	Not Significant
s06q02	-197.158	187.914	-1.049	0.294	Saved money	Not Significant
s06q03	-665.987	1,552.312	-0.429	0.668	Requested credit	Not Significant
s06q05	175.051	217.363	0.805	0.421	Took out a loan	Not Significant
s06q07	-139.368	401.554	-0.347	0.729	Member of a tontine	Not Significant
s06q12	-84.517	34.705	-2.435	0.015	Source of loan	Significant

OLS Regression Results - Saving and Credits (Postal account)

Predictor	Estimate	Std. Error	t-value	p-value	Meaning of Predictor	Significance
(Intercept)	1,123.854	2,802.577	0.401	0.688	Intercept	Not Significant
PC1	33.275	20.443	1.628	0.104	Account ownership	Not Significant
s06q02	-202.900	185.219	-1.095	0.274	Saved money	Not Significant
s06q03	-304.105	1,485.419	-0.205	0.838	Requested credit	Not Significant
s06q05	88.085	217.596	0.405	0.686	Took out a loan	Not Significant
s06q07	51.438	400.053	0.129	0.898	Member of a tontine	Not Significant
s06q12	-67.809	32.650	-2.077	0.038	Source of loan	Significant

```
Importance of components:
                          PC1     PC2     PC3     PC4
Standard deviation     1.9991 0.04304 0.03633 0.01825
Proportion of Variance 0.9991 0.00046 0.00033 0.00008
Cumulative Proportion  0.9991 0.99959 0.99992 1.00000


 s06q01__1  s06q01__2  s06q01__3  s06q01__5
-0.4999677 -0.5001113 -0.4998784 -0.5000425
```

Nonagricultural Enterprises (Section 10a & 10b):

Descriptive Statistics for Nonagricultural Enterprises

Predictor	Meaning of Predictor	Mode	Mean	Std. Deviation	Minimum	Maximum
s10q04	Construction business	2.000	1.962	0.049	1.667	2.000
s10q05	Retail business	1.917	1.824	0.135	1.167	2.000
s10q06	Liberal profession	2.000	1.976	0.041	1.583	2.000
s10q08	Restaurant ownership	2.000	1.974	0.043	1.667	2.000
s10q17a	Business activity branch	6.000	6.815	2.174	1.667	17.000
s10q31	Business registered?	2.000	1.980	0.050	1.500	2.000
s10q34	Source of business funding	1.000	1.396	0.538	1.000	9.000

OLS Regression Results - Nonagricultural Enterprises

Predictor	Estimate	Std. Error	t-value	p-value	Meaning of Predictor	Significance
(Intercept)	7,188.088	3,468.023	2.073	0.038	Intercept	Significant
s10q04	-1,156.900	845.182	-1.369	0.171	Construction business	Not Significant
s10q05	-283.892	309.258	-0.918	0.359	Retail business	Not Significant
s10q06	-519.803	1,011.026	-0.514	0.607	Liberal profession	Not Significant

Predictor						
s10q08	-548.083	942.199	-0.582	0.561	Restaurant ownership	Not Significant
s10q17a	3.943	18.964	0.208	0.835	Business activity branch	Not Significant
s10q31	-1,105.187	806.986	-1.370	0.171	Business registered?	Not Significant
s10q34	-34.516	75.478	-0.457	0.648	Source of business funding	Not Significant

Household's Assets (Section 12):

Descriptive Statistics for Household Assets

Predictor	Meaning of Predictor	Mean	Std. Deviation	Minimum	Maximum
s12q02	Functional equipments?	1.817	0.241	1.000	1.992

OLS Regression Results - Household's Assets

Predictor	Estimate	Std. Error	t-value	p-value	Meaning of Predictor	Significance
(Intercept)	167.720	304.993	0.550	0.582	Intercept	Not Significant
s12q02	-47.170	166.377	-0.284	0.777	Functional equipments?	Not Significant

Transfers (Section 13_1 & 13_2):

Descriptive Statistics for Transfers

Predictor	Meaning of Predictor	Mode	Mean	Std. Deviation	Minimum	Maximum
s13q09	Transfer received	0.250	0.340	0.193	0.000	1.000
s13q20	Reason for the transfer	3.000	3.216	0.535	2.000	10.000
s13q21	Mode of transfer	4.000	4.122	0.945	1.000	7.500
s13q22a	Amount received	46,561.042	52,835.951	54,192.858	4,000.000	770,436.508
s13q22b	Frequency of transfers	5.000	3.860	0.817	1.000	5.000

OLS Regression Results - Transfers

Predictor	Estimate	Std. Error	t-value	p-value	Meaning of Predictor	Significance
(Intercept)	144.207	373.131	0.386	0.699	Intercept	Not Significant
s13q09	-118.659	212.707	-0.558	0.577	Transfer received	Not Significant

s13q20	1.106	76.349	0.014	0.988	Reason for the transfer	Not Significant
s13q21	-15.870	44.448	-0.357	0.721	Mode of transfer	Not Significant
s13q22a	0.000	0.001	0.260	0.795	Amount received	Not Significant
s13q22b	7.617	49.263	0.155	0.877	Frequency of transfers	Not Significant

```
  s04q18a  s04q18b  s04q28a  s04q28b  s04q29b  s04q30c   s04q42   s04q43
1.423877 1.230714 1.145747 1.025401 1.190278 1.442882 1.079631 1.089996
  s04q58
1.017563
```

```
  s06q01__1   s06q01__2   s06q01__3   s06q01__4   s06q01__5      s06q02
651.624085 2025.221783  524.100149   18.000001 1407.168755    1.098028
    s06q03      s06q05      s06q07      s06q12
  1.319203    1.100539    1.104817    1.313072
```

```
  s10q04   s10q05   s10q06   s10q08  s10q17a   s10q31   s10q34
1.049779 1.080612 1.074186 1.024881 1.060112 1.029665 1.029933
```

```
  s13q09   s13q20   s13q21  s13q22a  s13q22b
1.048932 1.037844 1.097347 1.087341 1.006355
```

VIF values greater than 10 often suggest that the corresponding variables are highly correlated with other predictors in the model.

s06q01__1 has a VIF of **152.11**

s06q01__2 has a VIF of **626.68**

s06q01__3 has a VIF of **203.24**

s06q01__5 has a VIF of **505.47**

To mitigate the issue, we employ PCA (see above).