

APPENDIX

Appendix A Falsification Test – Test on The Validity of The Selection Instruments

Variables	Model 1	Model 2
	Adoption (1/0)	c_i of Non-Adopters
Oromiya-Dummy	0.213 ^{***} (0.061)	-0.002(0.011)
Harari-Dummy	0.966 ^{***} (0.131)	-0.033(0.020)
Crop rotation	0.641 ^{***} (0.067)	0.005(0.009)
Credit service	0.486(0.634)	-0.028 ^{**} (0.012)
Constant	-1.174 ^{***} (0.062)	0.628 ^{***} (0.008)
Wald test	$\chi^2 = 114.42^{***}$ (p=0.000)	F-stat. = 0.960(p=0.41)
N	2, 752	1,980

** and *** indicate significance levels at 5 and 1%, respectively. Robust standard errors in parentheses.

Source: Author's computations using ESS third round (2015) Survey

Appendix B Absolute and Relative poverty status by Sub-groups

By Adoption Status and Gender					
Headcount Ratio (P_o)					
Adoption status			Sex		
Adopter	Non-Adopter	Total	Male	Female	Total
0.416	0.421	0.420	0.423	0.401	0.420
Relative Poverty (%)					
Adoption status			Sex		
Adopter	Non-Adopter	Total	Male	Female	Total
0.468	0.483	0.472	0.482	0.437	0.472
By Region					
Region	Headcount Ratio (P_o)	Relative Poverty (%) ¹		M_o	
Afar	0.429	0.407		0.658	
Amhara	0.495	0.577		0.637	
Benishan	0.598	0.646		0.511	
Dire Daw	0.033	0.124		0.563	
Gambella	0.472	0.467		0.556	
Harari	0.142	0.156		0.536	
Oromiya	0.331	0.388		0.576	
Somalie	0.222	0.300		0.662	
Tigray	0.332	0.433		0.576	
SNNP	0.571	0.560		0.567	
Total	0.420	0.472		0.586	

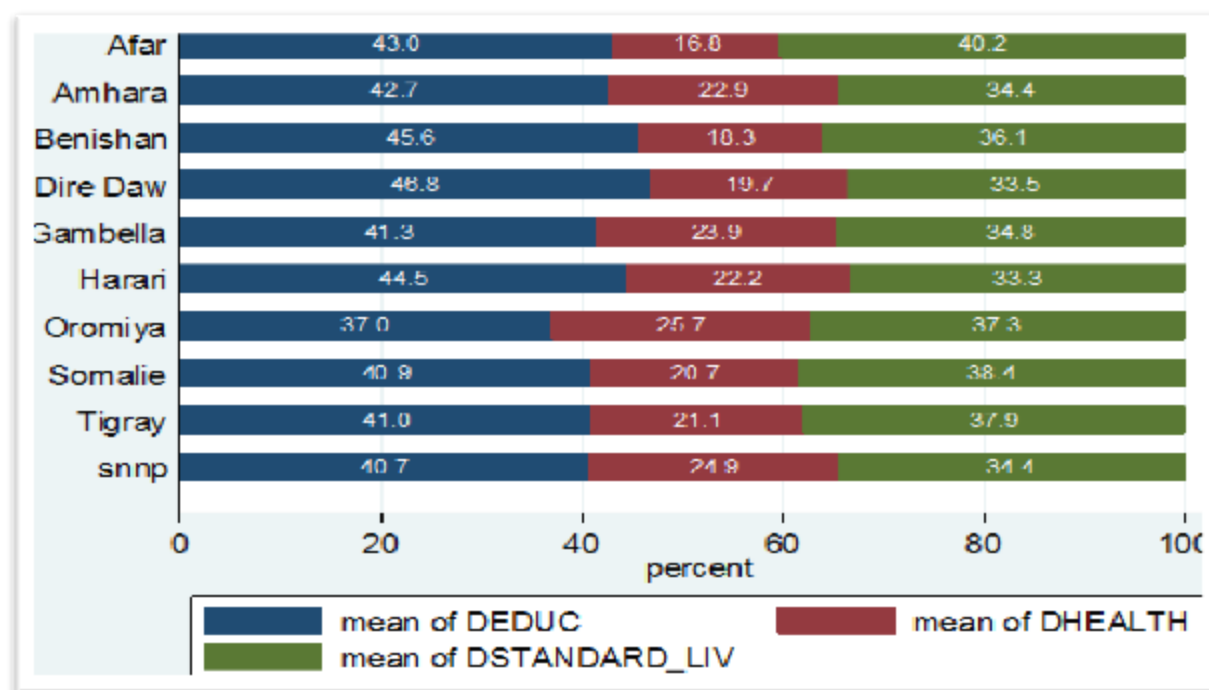
Source: Author's computations using ESS third round (2015) Survey

¹ The median of consumption expenditure is used for constructing a relative poverty line. More people become poor under the relative poverty line because the absolute poverty line constructed by MoFED is lower (3,781 Birr) as compared to the median value of consumption expenditure (4,569.54 Birr). We cannot use MoFEC's absolute poverty line developed in 2016 as it is inflated.

Appendix C Covariate Balance Indicators before and after Matching: Quality Test

Outcome Variable	Matching type	Pseudo R ² Before matching	Pseudo R ² After matching	LR χ^2 (p-value) Before matching	LR χ^2 (p-value) After matching	Mean standardized bias before matching	Mean standardized bias After matching
Dscore ²	NNM	0.195	0.001	663.22	2.12	37.8	2.3
	RM	0.195	0.007	663.22	16.97	35.2	4.2
	KM	0.195	0.004	663.22	8.63	35.9	2.5
LDscore ³	NNM	0.204	0.002	693.15	3.65	48.8	2.0
	RM	0.204	0.001	693.15	3.64	48.8	2.4
	KM	0.204	0.002	693.15	5.78	48.8	3.4

Source: Author's computations using ESS third round (2015) Survey



Appendix D Status of each of the 10 regions, including rural Dire Dawa, in MPI scores and contribution of each component to the deprivation score

² Total deprivation score.

³ Living standards deprivation score.

Appendix E Impact of technology adoption on Living Standard Deprivation

Matching Type	Outcome mean		ATT
	Adopters	Non-adopters	
NNM	0.2504	0.2665	-0.016(-2.45)**
RM	0.2504	0.2729	-0.022(-5.59)***
KMa ⁴	0.2504	0.2694	-0.020(-4.29)***
KMb ⁵	0.2504	0.2675	-0.019(-4.74)***

** and *** indicate significance levels at 5 and 1%, respectively. T-statistics in parenthesis.

Source: Author's computations using ESS third round (2015) Survey

Appendix F Impact of technology adoption on Education Deprivation

Matching Type	Outcome mean		ATT
	Adopters	Non-adopters	
NNM	0.4008	0.4058	-0.005(-0.62)
RM	0.4008	0.4175	-0.010(-1.84)*
KMa	0.4008	0.4026	-0.002(-0.43)
KMb	0.4008	0.4036	-0.001(-0.22)

* indicates significance levels at 10%. T-statistics in parenthesis.

Source: Author's computations using ESS third round (2015) Survey

Appendix G Impact of technology adoption on Health Deprivation

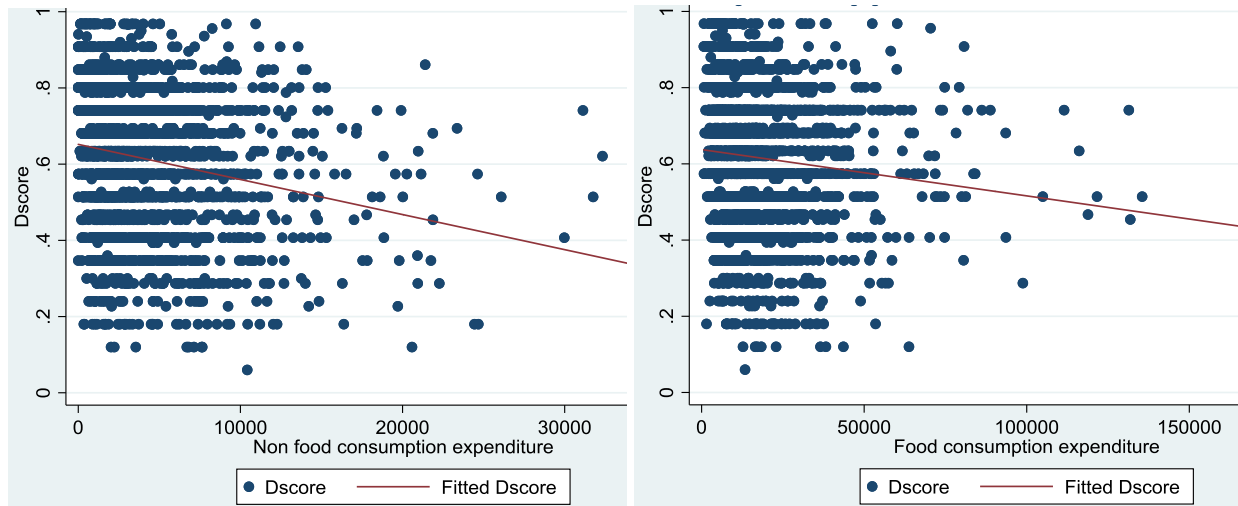
Matching Type	Outcome mean		ATT
	Adopters	Non-adopters	
NNM	0.1361	0.1393	-0.003(-0.45)
RM	0.1361	0.1428	-0.005(-1.17)
KMa	0.1361	0.1365	-0.001(-0.43)
KMb	0.1361	0.1395	-0.001(-0.02)

Note: T-statistics in parenthesis.

Source: Author's computations using ESS third round (2015) Survey

⁴ Kernel-based matching with a band width of 0.06 and common support.

⁵ Kernel-based matching with a band width of 0.03 and common support.



Appendix H Relationship between consumption expenditures and total deprivation scores
Note: Dscore stands for total deprivation scores