Social Change, Out-migration and Exit from Agriculture

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Specific Aims

- **Does labour out-migration influence (i) agricultural productivity, (ii) women's participation in farming, and (iii) exit from farming?**
- **Do remittances influence (i) farm technology use, (ii) women's participation in farming, and (iii) exit from farming?**
- **Do farm technology use and exit from farming influence subsequent out-migration?**

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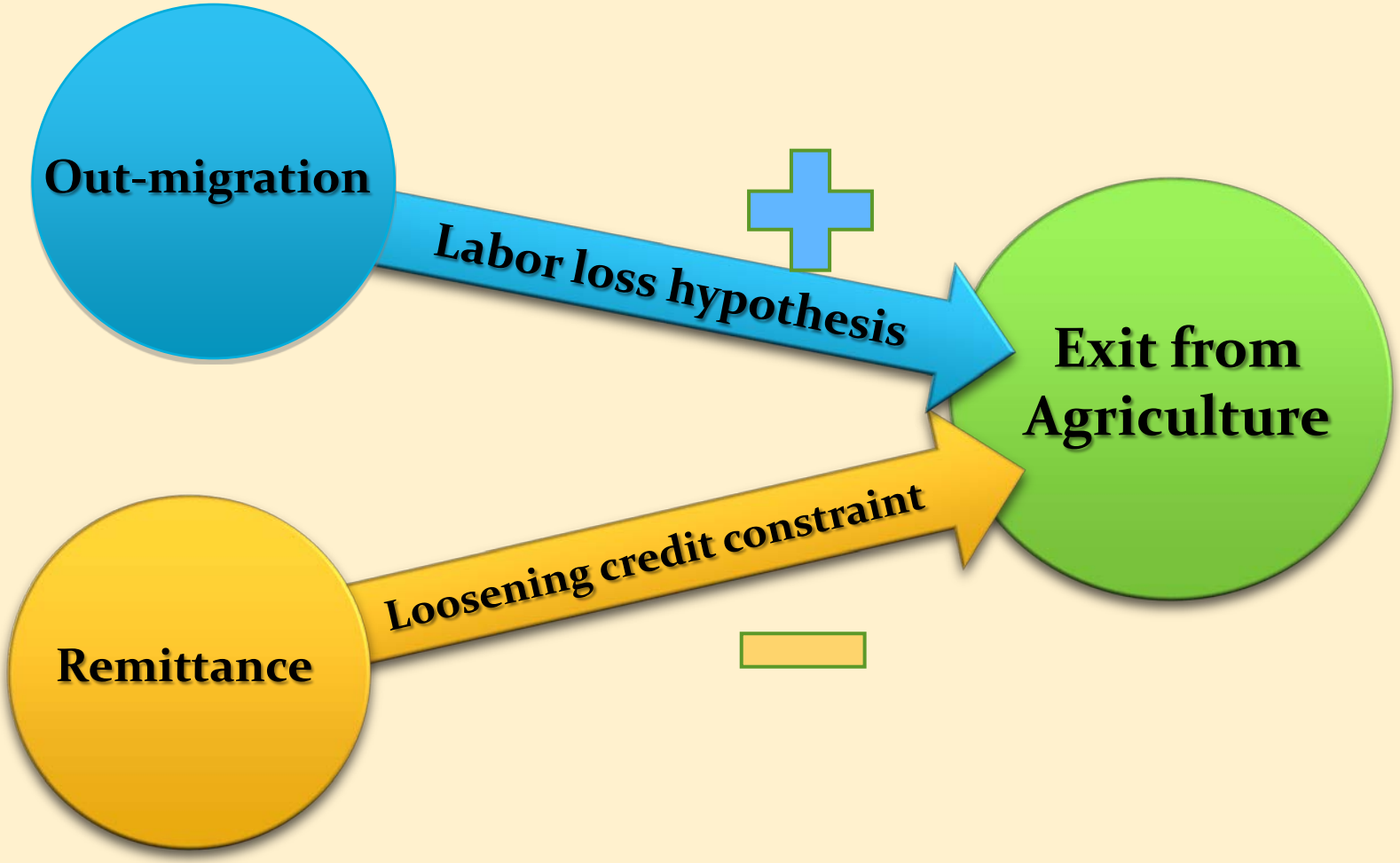
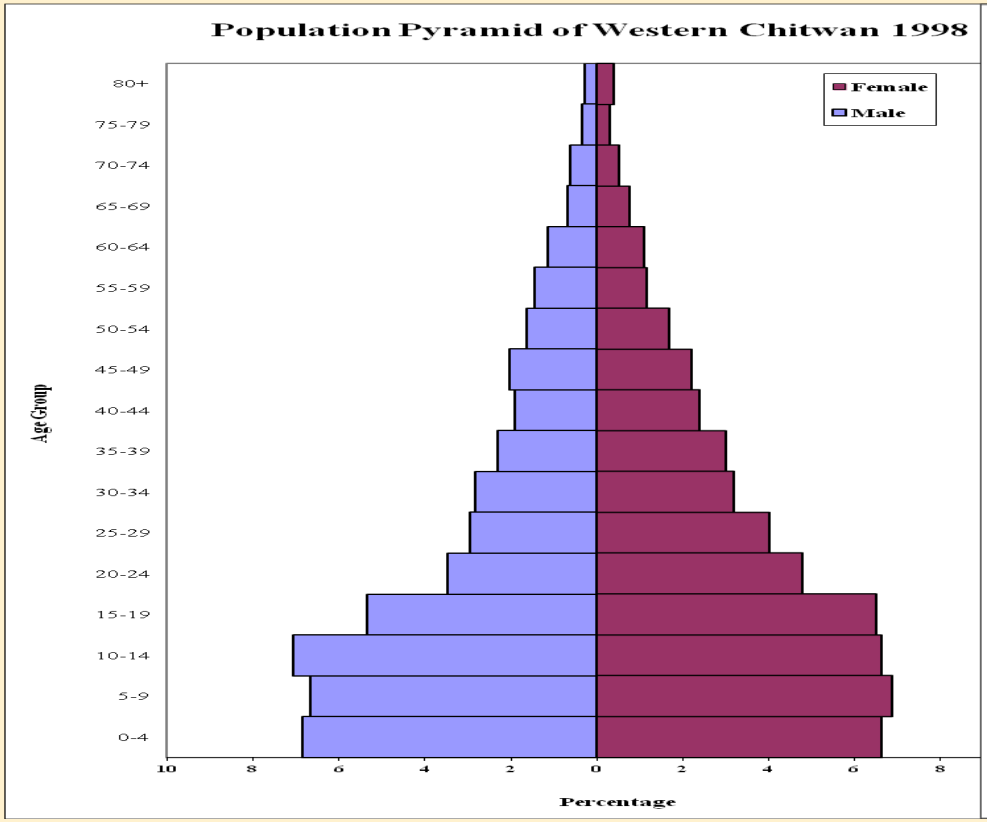
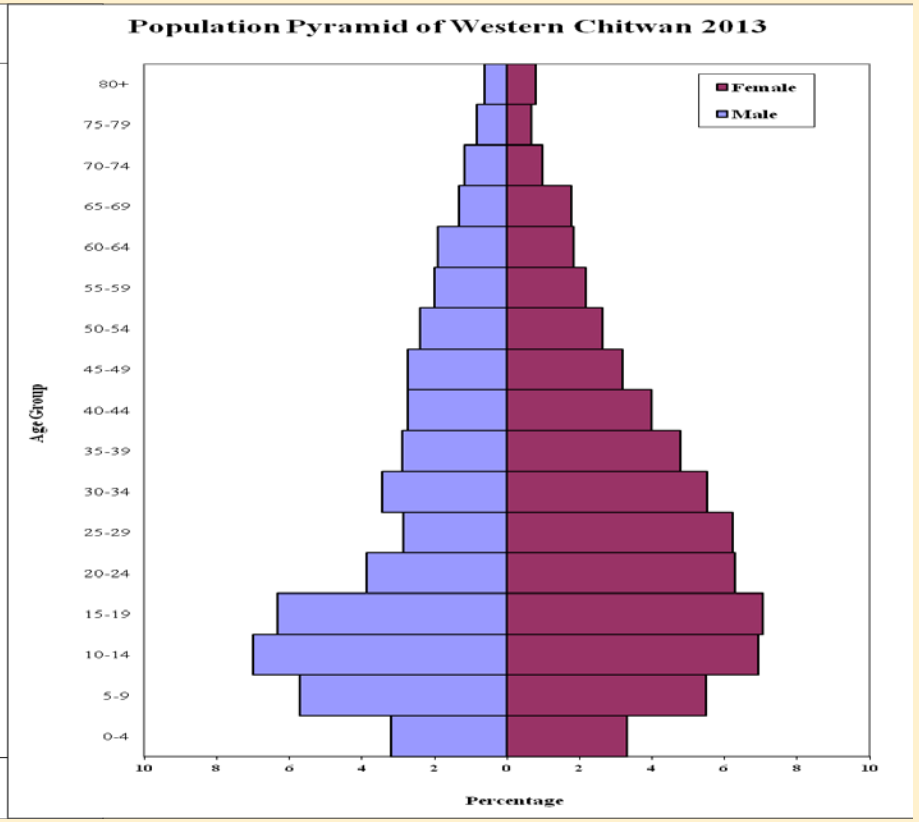
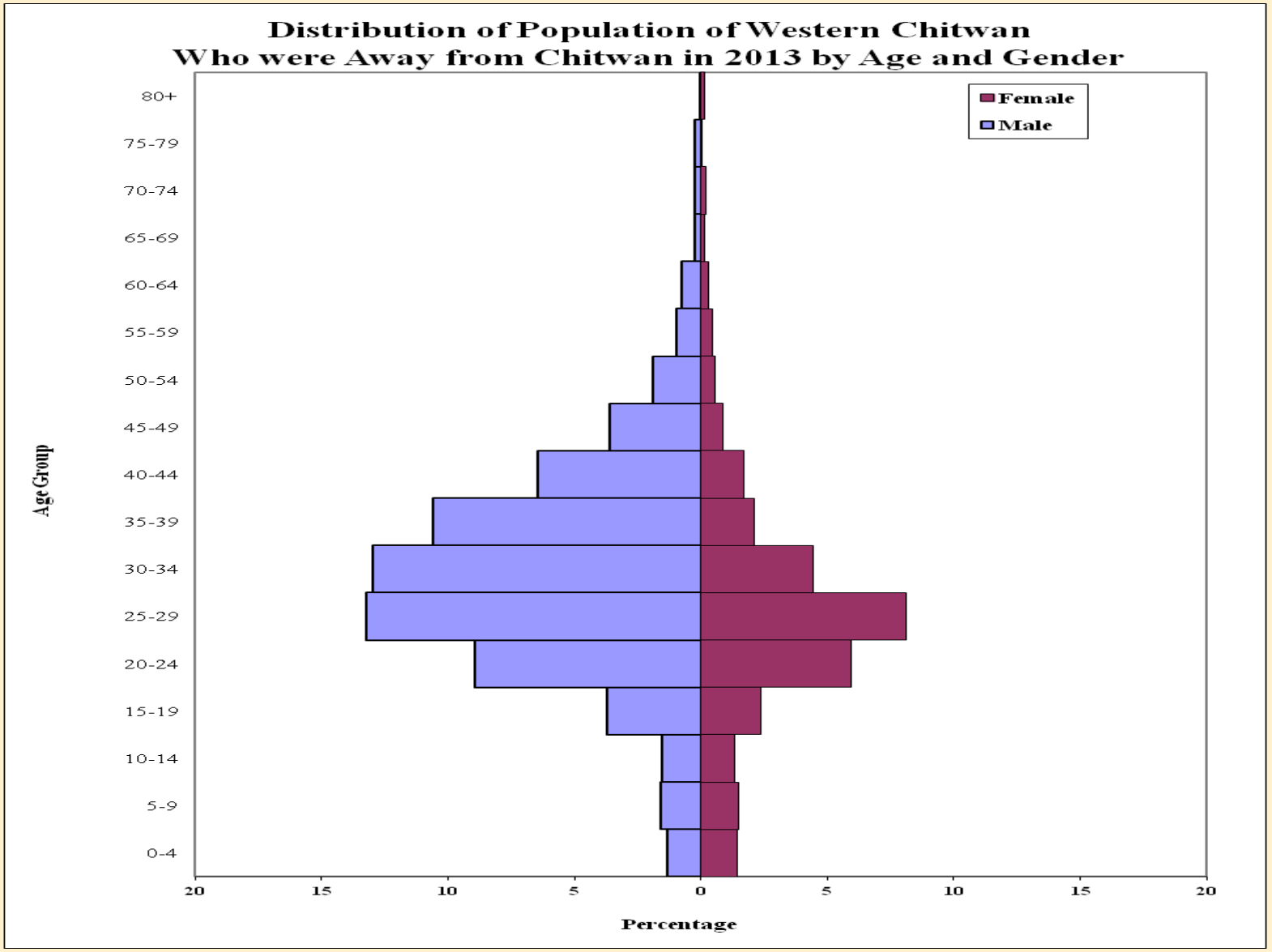
Theoretical Framework:



Population Change Overtime in Chitwan 1998-2013






Distribution of Population of Western Chitwan
Who were Away from Chitwan in 2013 by Age and Gender
Female
Male
Age Group
80+
75-79
70-74
65-69
60-64
55-59
50-54
45-49
40-44
35-39
30-34
25-29
20-24
15-19
10-14
5-9
0-4
20
15
10
5
0
5
10
15
20
Percentage

Data and sample

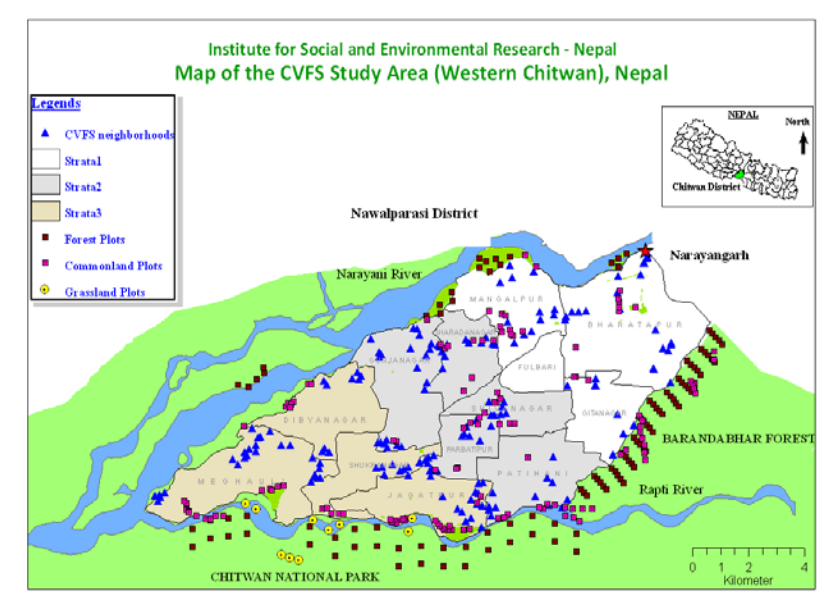
Data: Chitwan Valley Family Study

Observation period: 2007 – 2015

Sample:

Data and sample:

- **Data:** Chitwan Valley Family Study
- 144 communities, initially defined as a cluster of 5-15 households
- 1436 households farming in 2006
- **Observation period**: 2007-2015



Analytical Approach

Outcome: Exit from agriculture (stop farming)

Explanatory factors: Outmigration (# of migrants)
Remittance

Unit of analysis: Households

Analytical technique: Event history
Multi-level discrete time hazard model
with annual hazard of stopping farming

Risk at exiting from farming = farming in 2006

Our Theoretical Framework:

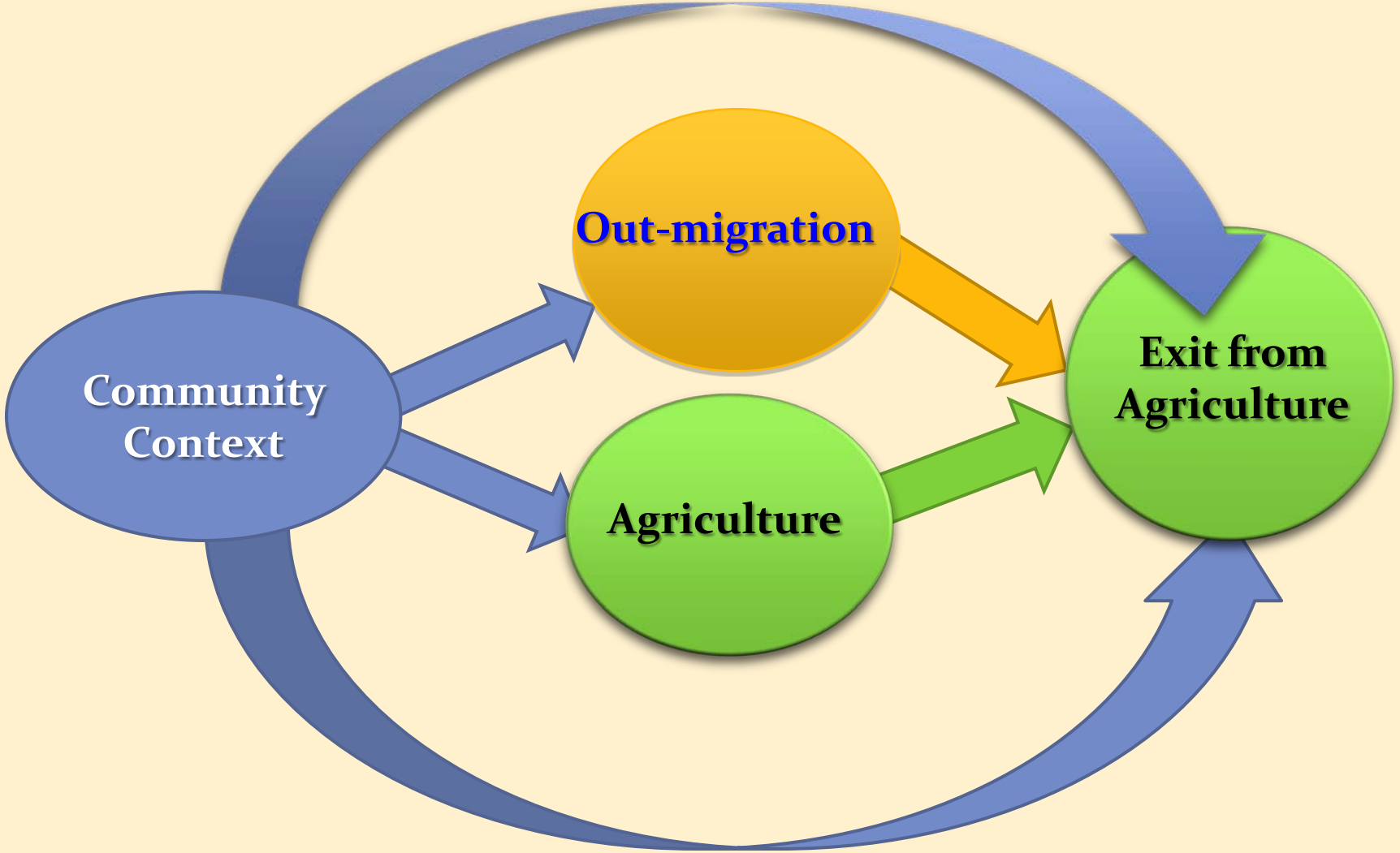


Table 1. Descriptive Statistics of select measures used in the analyses (N=1436 households)

Measures	Mean	St. Dev.	Min	Max
Exited from agriculture	0.19	0.39	0	1
Community measures				
Distance to urban center from R's neighborhood (miles)	9.05	3.72	0.02	17.70
Access to community services				
N years employer within 15-minute walk in 2006	18.07	14.81	0	54
N years market within 15-minute walk in 2006	29.35	13.58	0	54
N years bank within 15 minute walk in 2006	1.72	5.83	0	47
N years health service within 15 minute walk in 2006	16.40	14.71	0	48
N years bus stop within 15 minute walk in 2006	24.70	13.31	0	51
Sum of N years of all five services within 15 minute walk in 2006	90.25	44.85	11.	244
Household measures				
Household size (number of members)	6.31	2.39	1	11
Migration measures				
Number of migrants	1.39	1.38	0	5
Remittance measures				
Amount of remittance in Nepali Rupee received in category (0=none, 1=1-100K, 2=100-200K, 3=300-400K, 4= 300-400K, 5= more than 400K)	1.28	1.73	0	5

Table 2. Multi-level Logistic Regression Estimates of the Effect of Community Context on Hazard of Exit from Agriculture (N=1436 Households)

Measures	Exit from agriculture						
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Access to community services							
Employment center		1.01*					
		(1.77)					
Market			1.01*				
			(1.88)				
Bank				1.03*			
				(3.06)			
Health services					1.02**		
					(2.88)		
Bus stop						1.02**	
						(2.57)	
Mean of all five services							1.03**
							(3.25)
Distance to urban center	0.94**	0.96*	0.94**	0.94**	0.94**	0.95*	0.96*
	(-2.74)	(-1.77)	(-2.63)	(-2.76)	(-2.56)	(-1.95)	(-1.90)

Theoretical Framework: Household Influence

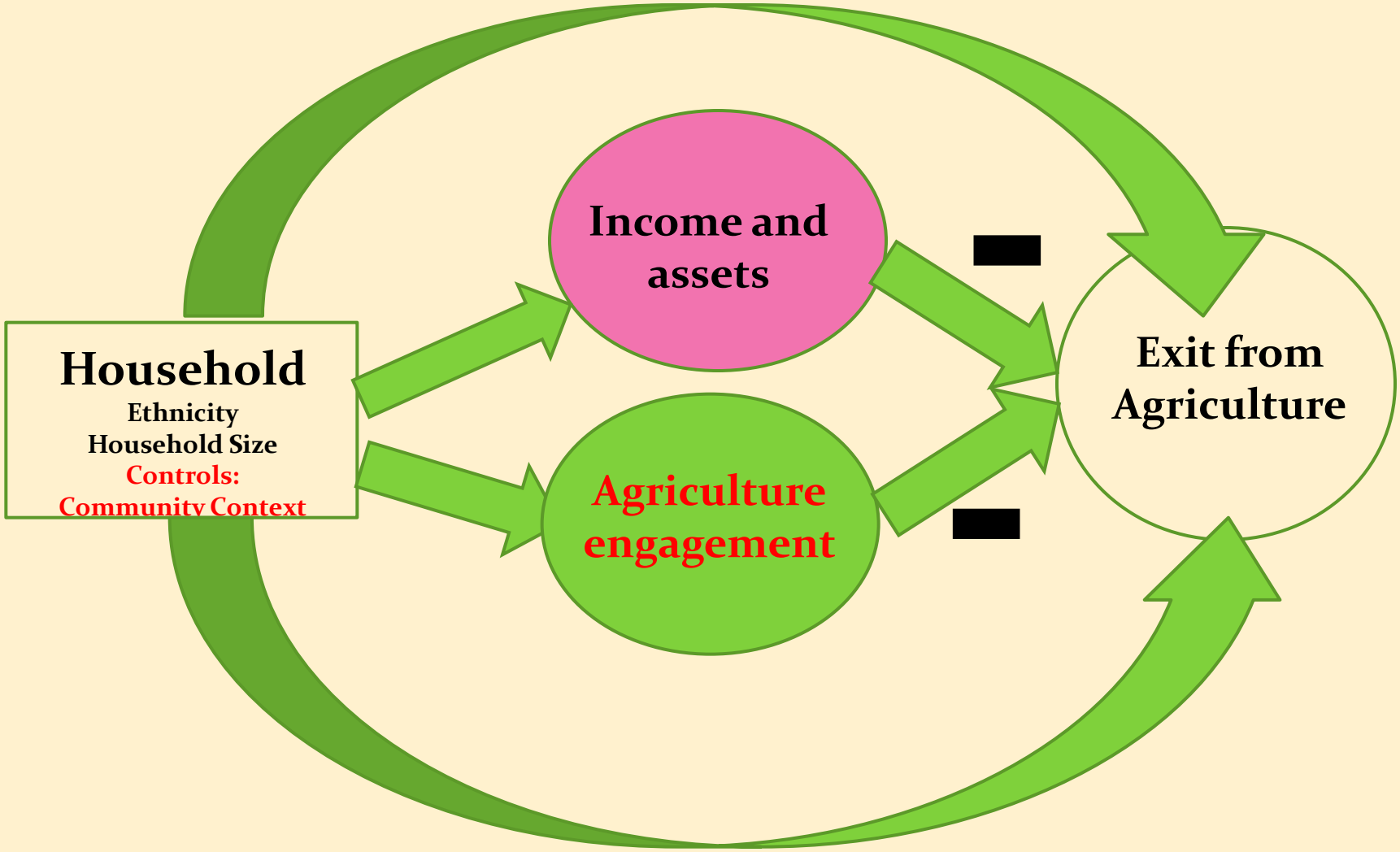


Table 3. Multilevel Logistic Regression Estimate of Effects of Household Characteristics on Hazard of Exit from Agriculture (N=1436 Households)

Measures		
	Model 3	Model 4
Household engagement in agriculture		0.80**
		(-5.23)
Household assets and income	0.93**	0.96+
	(-3.39)	(-1.53)

Theoretical Framework: Migration and Remittance

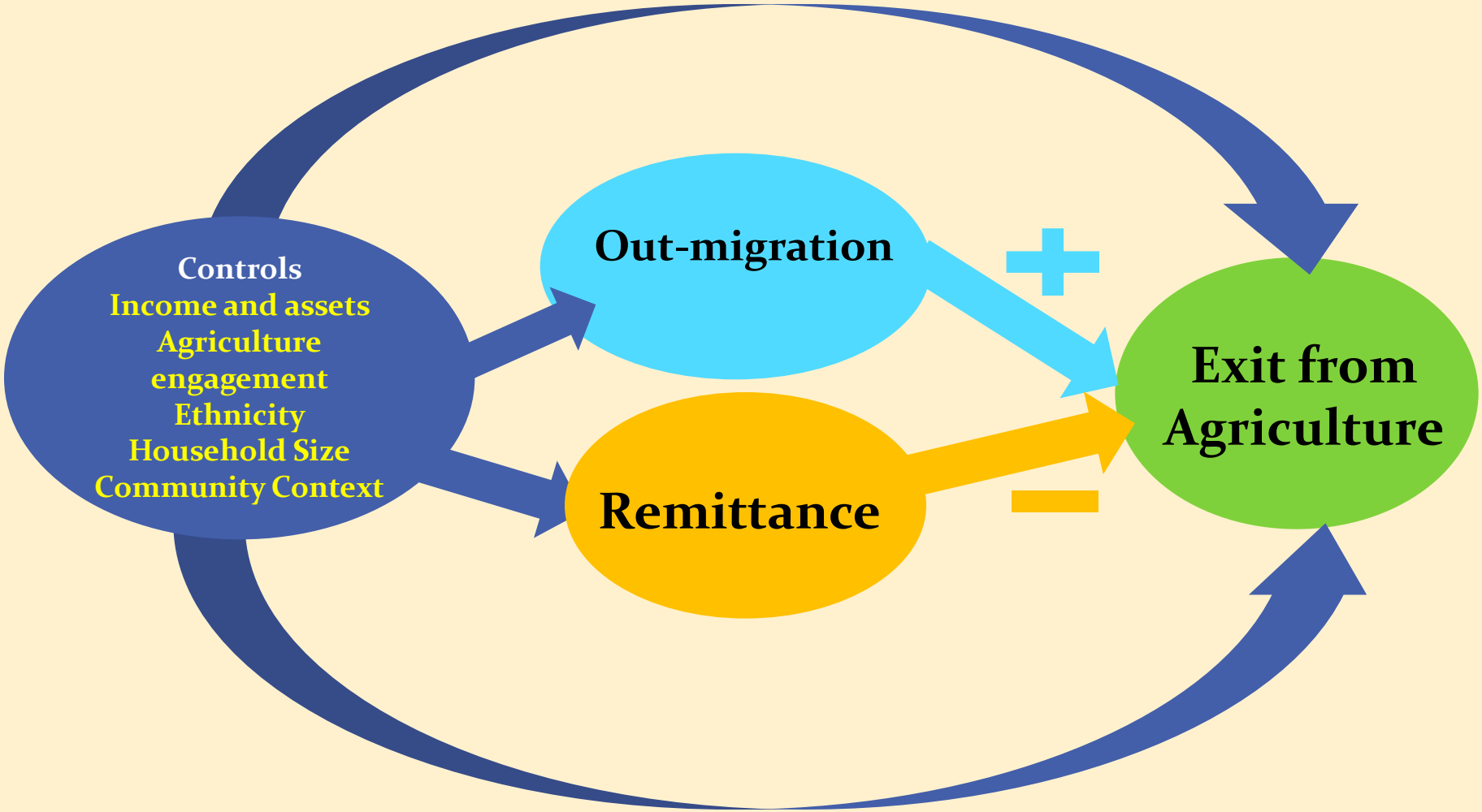


Table 4. Multilevel Logistic Regression Estimates of the Effect of Migration and Remittance on Hazard of Exit from Agriculture (N=1436 Households)

Measures	Model 1	Model 2
Remittance		
Amount of remittance received		0.92*
		(-1.71)
Migration		
Number of migrants	1.11**	1.14*
	(1.71)	(2.15)

Conclusions

- Access to community services increases exit from agriculture.

- Out-migration increases the hazard of exit from agriculture.

- The amount of remittance, on the other hand, decreases the hazard of exit from agriculture.