

Overview of English, Math, and ESL Basic Skills and Pre-transfer Courses Outcomes

Logistic regression measures the relationship between the categorical outcome (DV) and predictors (IVs –continuous or categorical), by estimating probabilities. That is, it is used to predict a binary response based on one or more predictor variables.

LR analyses were performed to ascertain the effects of demographic groups (e.g., ethnicity, gender) and special populations (e.g., EOPS, veteran) on student outcomes in English, Math, and ESL courses.

Criteria for Analyses

1) Logistic regression

- Outcomes:
 - A) Course success rate
 - B) Persistence rate to subsequent term
 - C) Progression to transfer level course (TLC)
 - a) attempt rate
 - b) success rate for all students
 - c) success rate for only students who attempted TLC

Model 1a: Demographic groups

- Predictors: one model tested with all 4 demographic groups simultaneously
 - Age: 4 groups (<= 19, 20-24, 25-34, >= 35 years old)
 - Ethnicity: 5 groups (African American, Asian, Hispanic, White, Other)
 - Gender: 3 groups (female, male, unknown)
 - Income status: 3 groups (low income, not low income, unknown)
 - Reference groups: <=19, White, male, not low income

Model 1b: Demographic groups

- Predictors: 4 models tested with each demographic group separately
 - Age: 4 groups (<= 19, 20-24, 25-34, >= 35 years old)
 - Ethnicity: 5 groups (African American, Asian, Hispanic, White, Other)
 - Gender: 3 groups (female, male, unknown)
 - Income status: 3 groups (low income, not low income, unknown)
 - Reference groups: <=19, White, male, not low income

Model 2: Special populations (SP)

- Predictors: 5 models tested (each predictor with controls)
 - CalWORKs: 2 groups (yes, no)
 - DSPS: 2 groups (yes, no)
 - EOPS: 2 groups (yes, no)

- Foster youth: 2 groups (yes, no)
- Veteran: 2 groups (yes, no)
- Controls: Age, ethnicity, gender, and income status
- Reference groups: No group for each SP

Model 3: Interactions

- Interaction between two predictors: 4 models tested
 - Income status and age, income status and ethnicity, income status and gender, ethnicity and gender
- Interaction among 3 predictors: one model tested
 - Sample sizes for unknown income group too small to conduct 3-way interaction among income status, ethnicity, and gender

2) Transfer to 4-year institutions (data available only for Math)

* indicates that the results for Model 1b differ from Model 1a. Unless specified, Model 1a and Model 1b show similar trends.

English Basic Skills Course Fall 2013 to Fall 2014

➤ Data selection restricted to English 204A only

A) Course Success Rate (n = 793)

- ❖ 66.3% success rate
- **Age:** 20-24 and 25-34 age groups are less likely to show success than ≤ 19 age group
- **Ethnicity:** African American and Hispanic students are less likely to show success than White students
- **Gender:** No significant effect
- **Income:** Low income students are less likely to show success than non-low income students
- **SP:** Foster youth students are less likely to show success than non-foster youth students
- No significant interactions

B) Persistence Rate (n = 793)

- ❖ 65.2% persistence rate

- **Age:** 3 older age groups are less likely to show persistence than ≤ 19 age group
- **Ethnicity:** African American students are less likely to show persistence than White students, Asian students are more likely to persist than White students
- **Gender:** No significant effect
- **Income:** No significant effect
- **SP:** CalWORKs, DSPS, EOPS students are more likely to show persistence than non-member students
- No significant interactions

C) Progression to Transfer Level Course (unduplicated students starting in 204A)

a) TLC Attempted (n = 780)

- ❖ Overall 44.6% attempt TLC
- **Age:** 3 older age groups are less likely to attempt TLC than ≤ 19 age group
- **Ethnicity:** African American and Hispanic students are less likely to attempt TLC than White students (Model 1b – Hispanic students show marginally lower attempt)*
- **Gender:** No significant effect
- **Income:** No significant effect
- **SP:** EOPS students are more likely to attempt TLC than non-EOPS students
- No significant interactions

b) TLC Success (n = 780)

- **Age:** No significant effect
- **Ethnicity:** African American and Hispanic students are less likely to succeed in TLC than White students
- **Gender:** No significant effect
- **Income:** No significant effect
- **SP:** No significant effect
- No significant interactions

c) TLC Attempted and Success (n = 259)

- **Age:** No significant effect
- **Ethnicity:** African American and Hispanic students are less likely to succeed in TLC than White students
- **Gender:** No significant effect
- **Income:** No significant effect
- Interaction between demographic groups (as well as special populations) are not assessed because of small sample sizes

Math
Summer 2008 to Fall 2014

Basic Skills Courses (Math 250, 253)

A) Course success rate (n = 4,130)

- ❖ Overall 47.7% success rate
- **Age:** 25-34 and ≥ 35 age groups are more likely to show success than ≤ 19 age group
- **Ethnicity:** African American and Hispanic students are less likely to show success than White students
- **Gender:** no significant effect
- **Income:** Low income students are less likely to show success than non-low income students
- **SP:** DSPS, EOPS students are less likely to show success than non-member students
- No significant interactions

B) Persistence rate (n = 4,130)

- ❖ 51.7% persistence rate
- **Age:** 3 older age groups are less likely to show persistence than < 19 age group
- **Ethnicity:** African American students are less likely to show persistence than White students
- **Gender:** Female students are more likely to show persistence rate male students (Model 1b: no gender effect)*
- **Income:** No significant effect
- **SP:** DSPS, EOPS students are more likely to show persistence than non-member students
- No significant interactions

C) Progression to Transfer Level Course (unduplicated, all terms)

- Students starting in 250 or 253

a) TLC Attempted (n = 3,385)

- ❖ For all terms 14.9% attempt TLC, 12.5% in 5 primary terms
- **Age:** 20-24 age group is less likely to attempt TLC than ≤ 19 age group
- **Ethnicity:** African American students are less likely to attempt TLC than White students
- **Gender:** Female students are more likely to attempt TLC than male students
- **Income:** Low income students are less likely to attempt TLC than non-low income students
- **SP:** No significant effect
- Low income African American students are less likely to attempt TLC

- Low income and ≥ 35 age group students are less likely to attempt TLC

b) TLC Success (n = 3,385)

- **Age:** 20-24 age group is less likely to succeed in TLC than ≤ 19 age group
- **Ethnicity:** African American and Hispanic students are less likely to succeed in TLC than White students
- **Gender:** No significant effect
- **Income:** No significant effect
- **SP:** No significant effect
- No significant interactions

c) TLC Attempted and Success (n = 440)

- **Age:** No significant effect
- **Ethnicity:** No significant effect (Model 1b: African American students are less likely to succeed in TLC than White students)*
- **Gender:** No significant effect
- **Income:** No significant effect
- Interaction between demographic groups (as well as special populations) are not assessed because of small sample sizes

Pre-transfer Courses (Math 201, 203, 206)

A) Course success rate (n = 8,436)

- ❖ 55.6% success rate
- **Age:** 20-24 age group is less likely to show success than ≤ 19 age group; 25-34 and ≥ 35 age groups are more likely to show success than ≤ 19 age group
- **Ethnicity:** African American and Hispanic students are less likely to show success than White students
- **Gender:** Female students are more likely to show success than male students
- **Income:** Low income students are less likely to show success than non-low income students
- **SP:** EOPS students are less likely to show success than non-member students
- No significant interactions

B) Persistence rate (n = 8,436)

- ❖ 54.5% success rate
- **Age:** 20-24 and 25-34 age groups are less likely to show persistence than < 19 age group

- **Ethnicity:** African American, Asian, and Hispanic students are less likely to show persistence than White students
- **Gender:** No significant effect
- **Income:** No significant effect
- **SP:** CalWORKs, DSPS, EOPS students more likely to show persistence than non-member students
- No significant interactions

C) Progression to Transfer Level Course (unduplicated, all terms)

- Students starting in 201, 203, or 206

a) TLC Attempted (n = 5,898)

- ❖ For all terms 41.3% attempt TLC, 40.0% in 5 primary terms
- **Age:** 20-24 age group is less likely to attempt TLC than ≤ 19 age group (Model 1b: no effect for 20-24 group; 25-34 age group shows higher attempt rate)*
- **Ethnicity:** African American and Hispanic students are less likely to attempt TLC than White students
- **Gender:** Female students are more likely to attempt TLC than male students (Model 1b: no gender effect)
- **Income:** Low income students are less likely to attempt TLC than non-low income students
- **SP:** No significant effect
- Low income African American students are less likely to attempt TLC

b) TLC Success (n = 5,898)

- **Age:** 25-34 age group is more likely to succeed in TLC than ≤ 19 age group
- **Ethnicity:** African American and Hispanic students are less likely to succeed in TLC than White students
- **Gender:** Female students are more likely to succeed in TLC than male students
- **Income:** Low income students are less likely to succeed in TLC than non-low income students
- **SP:** EOPS students are more likely to show success than non-EOPS students
- No significant interactions

c) TLC Attempted and Success (n =2,279)

- **Age:** 25-34 age group is more likely to succeed in TLC than ≤ 19 age group
- **Ethnicity:** African American and Hispanic students are less likely to succeed in TLC than White students

- **Gender:** Female students are more likely to succeed in TLC than male students
- **Income:** No significant effect (Model 1b: Low income students are less likely to succeed in TLC than non-low income students)*
- **SP:** DSPS students are less likely to show success than non-member students
- No significant interactions

Transfer Level Course (Math 13 – Statistics)

A) Course success rate (n = 5,801)

- ❖ 62.4% success rate
- **Age:** 20-24 age group is less likely to show success than ≤ 19 age group (Model 1b: 20-24 and ≥ 35 age group is less likely to show success)*
- **Ethnicity:** African American and Hispanic students are less likely to show success than White students
- **Gender:** Female students are more likely to show success than male students
- **Income:** Low income students are less likely to show success than non-low income students
- **SP:** No significant effect
- Significant interaction between ethnicity and income: only for unknown income groups

B) Persistence rate (n = 5,801)

- ❖ 42.2% persistence rate
- **Age:** 3 older age groups are less likely to show persistence than < 19 age group
- **Ethnicity:** Hispanic students are less likely to show persistence than White students (Model 1b: Asian show higher persistence; Hispanic students no effect)*
- **Gender:** Female students are less likely to show persistence than male students
- **Income:** Low income students are more likely to show persistence than non-low income students
- **SP:** DSPS, EOPS students more likely to show persistence than non-member students
- No significant interactions

ESL

High Intermediate Courses (216A/B, 223A/B, 233A/B)

Fall 2012 to Fall 2014

A) Course Success Rate (n = 706)

- ❖ 83.3% success rate
- **Age:** No significant effect
- **Ethnicity:** No significant effect
- **Gender:** Female students are more likely to show success than male students
- **Income:** No significant effect

B) Persistence rate (n = 706)

- ❖ 56.9% persistence rate
- **Age:** 25-34 and ≥ 35 age groups are less likely to show persistence than < 19 age group
- **Ethnicity:** No significant effect
- **Gender:** No significant effect
- **Income:** No significant effect

C) Progression to Transfer Level Course (unduplicated)

➤ Data selection restricted to **ESL 223A/B** to ESL 52A/English 1A only

a) TLC Attempted (n = 287)

- ❖ Overall 53.3% attempt TLC
- **Age:** 25-34 and ≥ 35 age groups are less likely to attempt transfer level course than ≤ 19 age group
- **Ethnicity:** No significant effect
- **Gender:** No significant effect
- **Income:** No significant effect

b) TLC Success (n = 287)

- **Age:** No significant effect
 - **Ethnicity:** No significant effect
 - **Gender:** No significant effect
 - **Income:** No significant effect
- Interaction between demographic groups (as well as special populations) are not assessed because of small sample sizes

c) TLC Attempted and Success

- Sample sizes too small to assess effects for demographic groups

**Transfer to 4-year Institutions (UC, CSU)
Math Courses: Summer 2008 to Spring 2013**

Level	Transfer Rate
Basic Skills Courses	3.6%
Pre-Transfer Courses	10.5%
Statistics Course	17.2%

Transfer to 4 year institutions: Math

Math Level	African American	Asian	Hispanic	White
Basic skills	3.8%	1.7%	2.8%	4.3%
Pre-transfer	8.2%	9.3%	9.9%	12.4%
Transfer (Math 13)	15.4%	15.3%	17.7%	18.6%

Distribution of Income Status across Levels of Math

Math Level	Low Income	Not Low Income	Unknown
Basic skills	71.9%	20.6%	7.4%
Pre-transfer	62.9%	31.6%	5.5%
Transfer (Math 13)	52.2%	44.5%	3.2%

Transfer Level Course Attempt rates

Subject	Attempt Rate
English	44.6%

Math Basic Skills Courses	14.9%
Math Pre-Transfer Courses	41.3%
ESL	53.3%

Conversion chart for odds ratio

Odds Ratio	Conversion
0.10	10 times
0.15	6.67 times
0.20	5 times
0.25	4.00 times
0.30	3.33 times
0.35	2.86 times
0.40	2.50 times
0.45	2.22 times
0.50	2 times
0.55	1.82 times
0.60	1.67 times
0.65	1.54 times
0.70	1.43 times
0.75	1.33 times
0.80	1.25 times
0.85	1.18 times
0.90	1.11 times
0.95	1.05 times
1.00	equivalent