

The Use of State Longitudinal Data Systems to Track Outcomes of Head Start Programs

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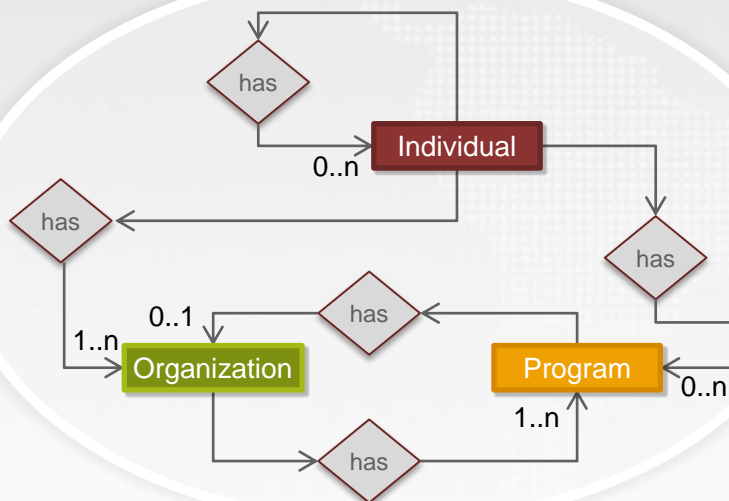
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SLDS – STATEWIDE LONGITUDINAL DATA SYSTEM

The SLDS is designed to put relevant and timely information for better decision making into the hands of appropriate stakeholders (parents, teachers, principals, superintendents, political leaders). It does so by creating an integrated data model and by framing information within the context of individuals, programs, and organizations.



nSPARC developed a nationally recognized data model to integrate pre-kindergarten through high school and college into the workforce



nSPARC developed a nationally recognized web-based tool to identify best practices to improve individual, organization, and program performance across the education and workforce spectrum



**CULTURE OF
COOPERATION**

**STRUCTURAL &
TECHNICAL
CAPACITY**

DATA USE

HEAD START OUTCOMES K – 3RD

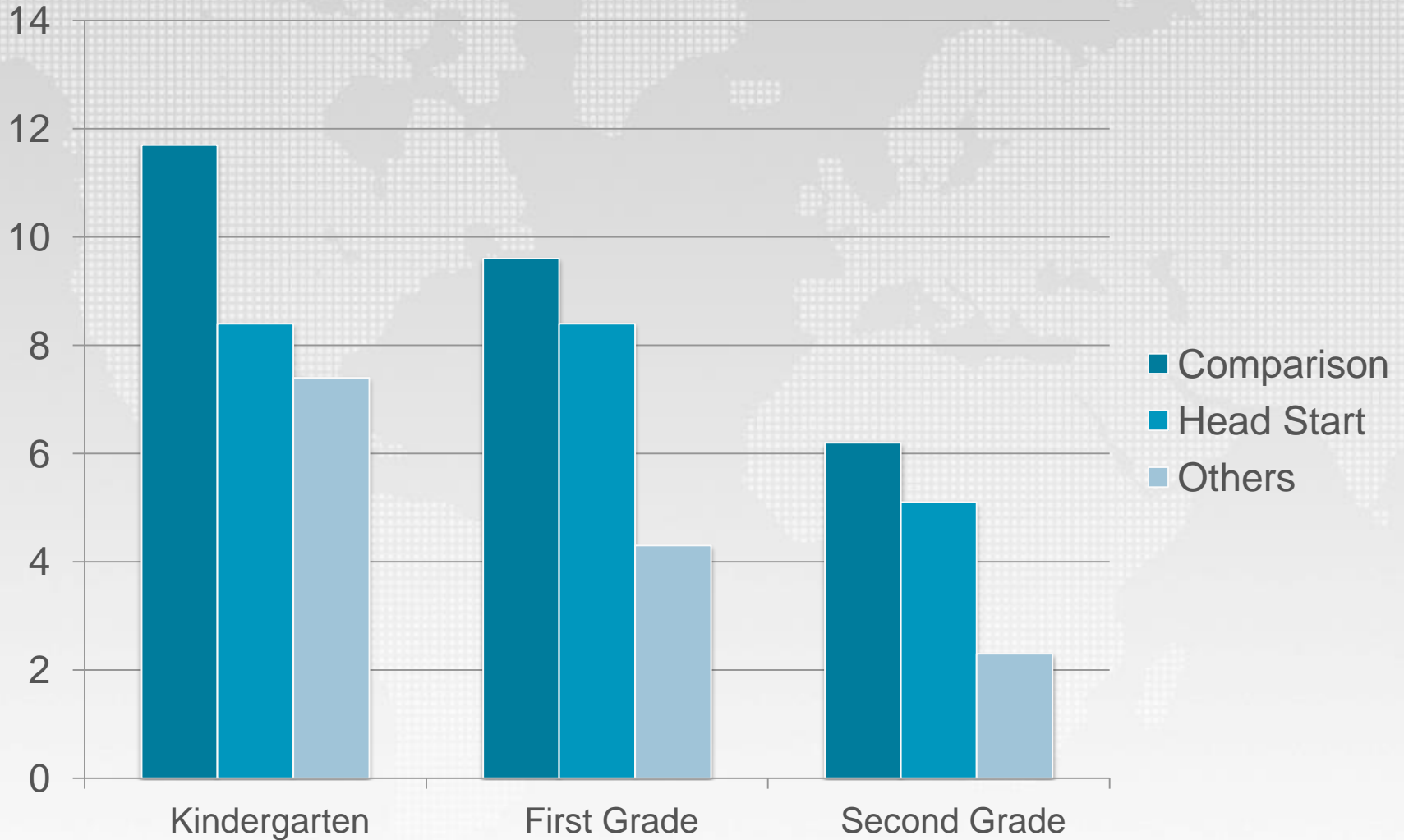
- ⊙ **Are Head Start students more likely to be retained than an equivalent comparison group and more economically advantaged students?**
- ⊙ **Are Head Start students more likely to receive special education services than an equivalent comparison group and more economically advantaged students?**
- ⊙ **Are Head Start students more likely to be proficient in reading and math than an equivalent comparison group and more economically advantaged students?**

METHODOLOGY

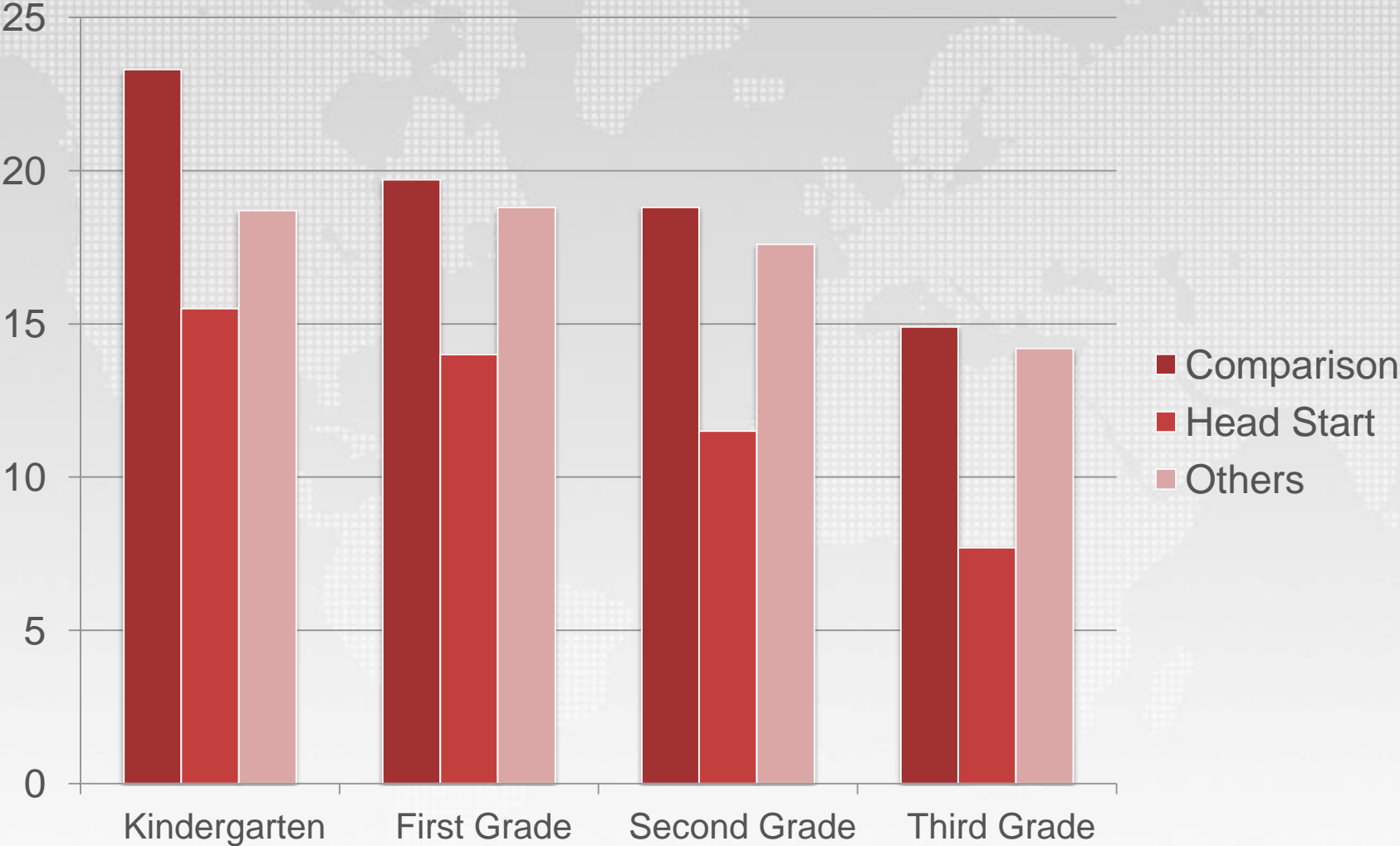
◎ SLDS Data

- Administrative Data from Head Start Districts, Covering 16 Counties to identify the treatment group of four-year old children receiving one year of service.
- Administrative Data from the Mississippi Department of Human Services to identify the equivalent comparison group eligible for Head Start services but not receiving them.
- Administrative Data K – 12 from the Mississippi Department of Education (MDE) to track outcomes for Head Start students, comparison group, and other students.
- Data from the National Center of Education Statistics and U.S. Census to measure school and community characteristics.

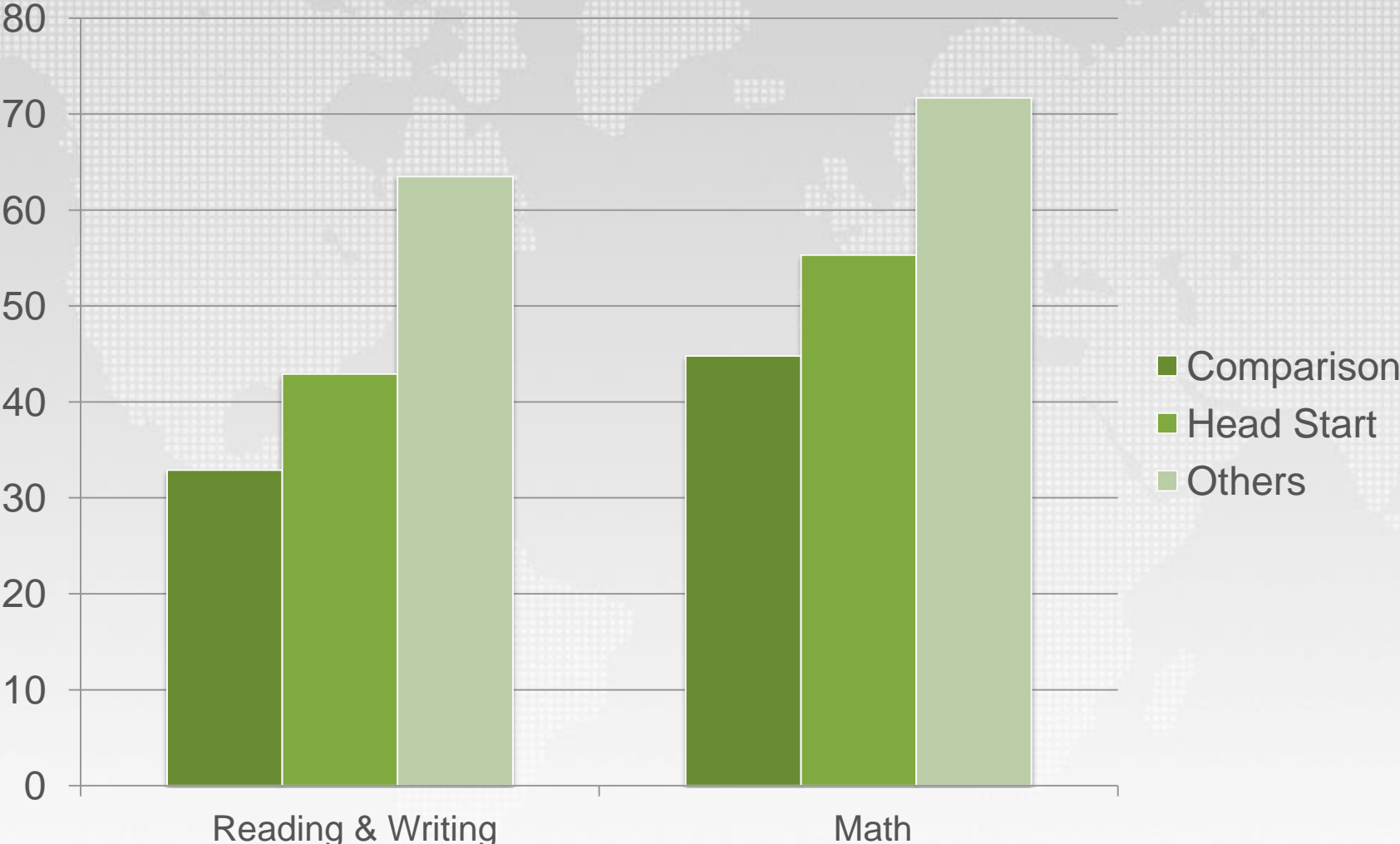
STUDENT RETENTION



SPECIAL EDUCATION

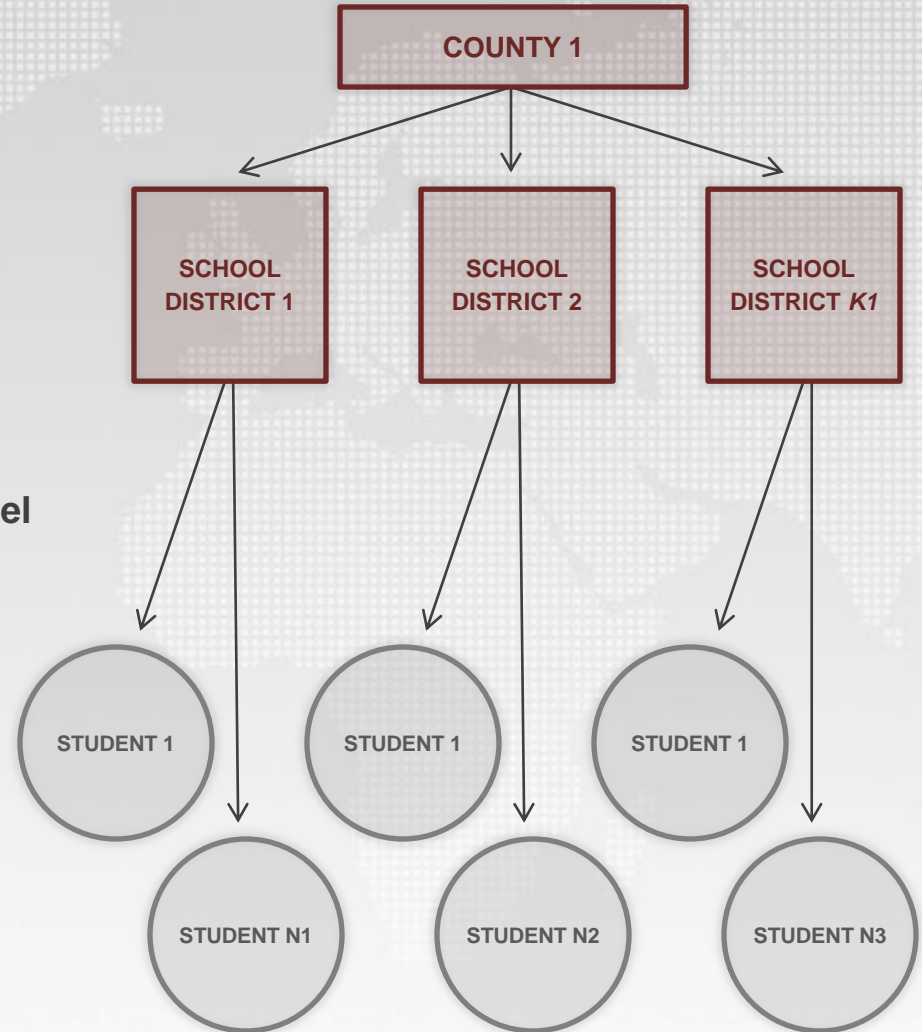


3rd GRADE PROFICIENCY



MULTI-LEVEL MODEL

© Estimation Procedure



Three-Level Logistic Random-Intercept Model

Multilevel Mixed-Effect Logistic Regression of Student Status on Retention, Net of Student Demographic, School, and Community Characteristics

	MODEL 1		MODEL 2		MODEL 3		MODEL 4	
	B	SE	B	SE	B	SE	B	SE
STUDENT GROUP								
Comparison (Reference)								
Head Start	-0.16*	0.07	-0.14*	0.07	-0.20**	0.07	-0.20**	0.07
Others	-0.68***	0.06	-0.61***	0.07	-0.64***	0.07	-0.64***	0.07
STUDENT CHARACTERISTICS								
Gender (Female = reference)								
Male			0.41***	0.05	0.41***	0.05	0.41***	0.05
Race (Black = reference)								
White			-0.20**	0.07	-0.22**	0.07	-0.22**	0.07
Hispanic			0.05	0.15	0.03	0.15	0.03	0.15
Others			-0.25	0.29	-0.26	0.29	-0.26	0.29
Special Education (No = reference)								
Yes			0.51***	0.06	0.49***	0.06	0.49***	0.06
SCHOOL CHARACTERISTICS								
Student Teacher Ratio					-0.05	0.05	-0.06	0.05
Total Expenditure per Student (1,000)					-0.07	0.05	-0.07	0.05
Percent Black in School District					0.01	0.01	0.01	0.01
Grade (Kindergarten = reference)								
First Grade					-0.31***	0.06	-0.31***	0.06
Second Grade					-0.84***	0.07	-0.84***	0.07
COMMUNITY CHARACTERISTICS								
Percent in poverty							-0.02	0.01
Intercept	-2.39***		-2.70***		-1.00		-0.54	
Chi-square	25852.16		25642.64		25399.28		25401.30	
Loglikelihood	149974.9		150901.6		152052.4		152073.8	

Note: *p<.05, **p<.01, ***p<.001

Multilevel Mixed-Effect Logistic Regression of Student Status on Special Education, Net of Student Demographic, School, and Community Characteristics

	MODEL 1		MODEL 2		MODEL 3		MODEL 4	
	B	SE	B	SE	B	SE	B	SE
STUDENT GROUP								
Comparison (Reference)								
Head Start	-0.38***	0.05	-0.28***	0.05	-0.31***	0.05	-0.31***	0.05
Others	-0.10**	0.04	-0.19***	0.04	-0.22***	0.04	-0.22***	0.04
STUDENT CHARACTERISTICS								
Gender (Female = reference)								
Male			0.77***	0.03	0.77***	0.03	0.77***	0.03
Race (Black = reference)								
White			0.39***	0.04	0.39***	0.04	0.39***	0.04
Hispanic			-0.86***	0.12	-0.88***	0.12	-0.88***	0.12
Others			-0.59**	0.19	-0.60**	0.19	-0.60**	0.19
SCHOOL CHARACTERISTICS								
Student Teacher Ratio					0.02	0.05	0.01	0.05
Total Expenditure per Student (1,000)					0.01	0.04	-0.01	0.04
Percent Black in School District					0.01	0.01	0.01	0.01
Grade (Kindergarten = reference)								
First Grade					-0.06	0.04	-0.06	0.04
Second Grade					-0.16***	0.04	-0.16***	0.04
Third Grade					-0.47***	0.04	-0.47***	0.04
COMMUNITY CHARACTERISTICS								
Percent in poverty							-0.01	0.01
<i>Intercept</i>	-1.57***		-2.14***		-2.43*		-2.09*	
<i>Chi-square</i>	33875.00		33782.14		33764.80		33768.42	
<i>Loglikelihood</i>	164743.3		167225.5		167637.1		167647.8	

Note: *p<.05, **p<.01, ***p<.001

Multilevel Mixed-Effect Logistic Regression of Student Status on Proficiency in Reading and Writing, Net of Student Demographic, School, and Community Characteristics

	MODEL 1		MODEL 2		MODEL 3		MODEL 4	
	B	SE	B	SE	B	SE	B	SE
STUDENT GROUP								
Comparison (Reference)								
Head Start	0.62***	0.07	0.78***	0.08	0.80***	0.08	0.80***	0.08
Others	1.11***	0.06	0.84***	0.06	0.84***	0.06	0.84***	0.06
STUDENT CHARACTERISTICS								
Gender (Female = reference)								
Male			-0.45***	0.05	-0.45***	0.05	-0.45***	0.05
Race (Black = reference)								
White			1.02***	0.06	1.00***	0.06	1.00***	0.06
Hispanic			0.44**	0.14	0.43**	0.14	0.43**	0.14
Others			1.27***	0.28	1.26***	0.28	1.26***	0.28
SCHOOL CHARACTERISTICS								
Student Teacher Ratio					0.02	0.05	0.01	0.05
Total Expenditure per Student					0.03	0.05	0.03	0.05
Percent Black School					-0.01*	0.01	-0.01	0.01
COMMUNITY CHARACTERISTICS								
Percent in poverty							-0.03	0.02
<i>Intercept</i>	-1.00***		-1.06***		-1.16		-0.47	
<i>Chi-square</i>	7656.06		7658.72		7658.34		7659.49	
<i>Loglikelihood</i>	33545.1		33978.1		34004.1		34010.7	

Note: *p<.05, **p<.01, ***p<.001

Multilevel Mixed-Effect Logistic Regression of Student Status on Proficiency in Math, Net of Student Demographic, School, and Community Characteristics

	MODEL 1		MODEL 2		MODEL 3		MODEL 4	
	B	SE	B	SE	B	SE	B	SE
STUDENT GROUP								
Comparison (Reference)								
Head Start	0.59***	0.07	0.74***	0.07	0.74***	0.07	0.74***	0.07
Others	1.00***	0.06	0.72***	0.06	0.72***	0.06	0.72***	0.06
STUDENT CHARACTERISTICS								
Gender (Female = reference)								
Male			-0.21***	0.05	-0.21***	0.05	-0.21***	0.05
Race (Black = reference)								
White			1.00***	0.06	0.99***	0.06	0.99***	0.06
Hispanic			0.62***	0.15	0.61***	0.15	0.61***	0.15
Others			1.58***	0.35	1.58***	0.35	1.58***	0.35
SCHOOL CHARACTERISTICS								
Student Teacher Ratio					-0.01	0.09	-0.01	0.09
Total Expenditure per Student					-0.01	0.07	-0.01	0.07
Percent Black School					-0.01	0.01	-0.01	0.01
COMMUNITY CHARACTERISTICS								
Percent in poverty							-0.01	0.03
<i>Intercept</i>	-0.50**		-0.66***		-0.13		0.06	
<i>Chi-square</i>	7645.21		7651.41		7652.65		7653.55	
<i>Loglikelihood</i>	33871.0		34245.2		34274.5		34285.3	

Note: *p<.05, **p<.01, ***p<.001

CONCLUSION

- ◎ **SLDS is an excellent tool to track Head Start outcomes**
- ◎ **It will allow to empower people within local programs**
- ◎ **It will allow to identify best practices around the country**