

Applications of Qualitative Comparative Analysis at Rural HSIs

Dr. Jessica Maxine Castillo

University of Colorado Colorado Springs





Community of Practice Workshop

- **Overview of the dissertation and its findings**
- **Resources for HSI advocates**
 - **Hispanic Association of Colleges and Universities fact sheets**
 - **NCES reports**
 - **IPEDS data pulls**
 - **HSI Division documents**
 - **HSID Eligibility Matrix**



Chapter I: Introduction

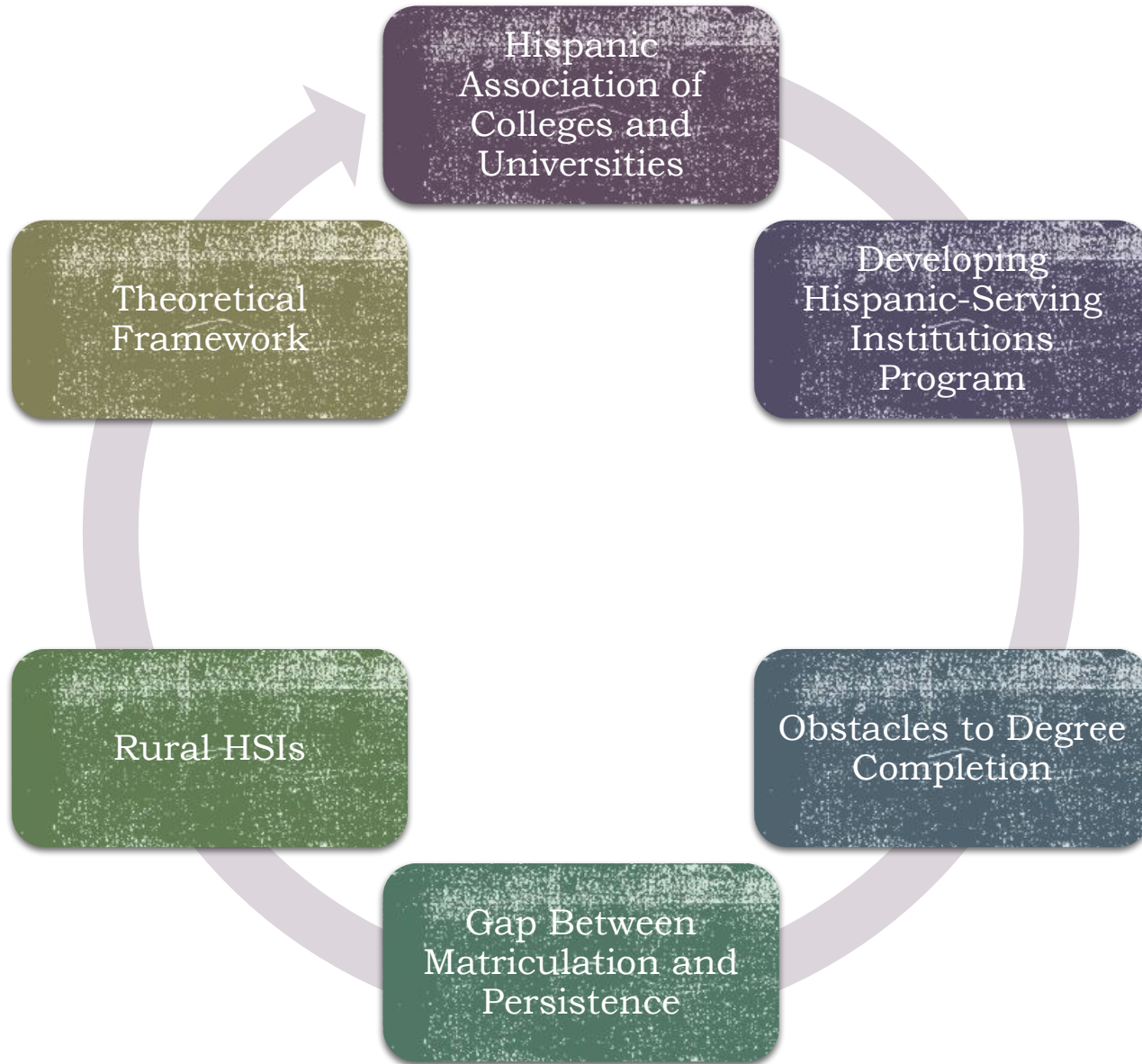
- Purpose of the Study: Use Qualitative Comparative Analysis (QCA) to determine whether the Developing Hispanic-Serving Institutions (DHSI) competitive grant program is a causal condition of increased graduation rates among Hispanic undergraduates at rural Hispanic-Serving Institutions (HSIs)
 - 16 cases
 - 16 causal conditions
- Research Questions
 - Have those rural, four-year HSIs that have received DHSIP grants experienced increases in graduation rates of undergraduate Hispanic students?
 - What combination of causal conditions is present at HSIs that have experienced increased graduation rates?
 - How does that combination manifest differently at each institution?



Chapter I: Introduction

- **Overview of Methodology**
 - **Question 1 will be answered using Integrated Postsecondary Education Data Systems (IPEDS) and Hispanic-Serving Institutions Division (HSID) data**
 - **Questions 2 and 3 will be answered by working through the QCA process**





Chapter II: Literature Review



Chapter III: Methodology

1. Rural, four-year HSIs that have seen increased graduation rates
2. Combination of causal conditions at those HSIs
3. Different manifestations of that combination at each institution

Crisp-set
Qualitative
Comparative
Analysis
(QCA)

Institutional
Theory:
Macro- and
Micro-
Structures
Elements

Crisp-set QCA causal conditions (student demographic data, institutional data, and institutional programs and initiatives identified by Calderon's (2015) collective impact model tenets that positively impact postsecondary success

IPEDS

Document
Analysis

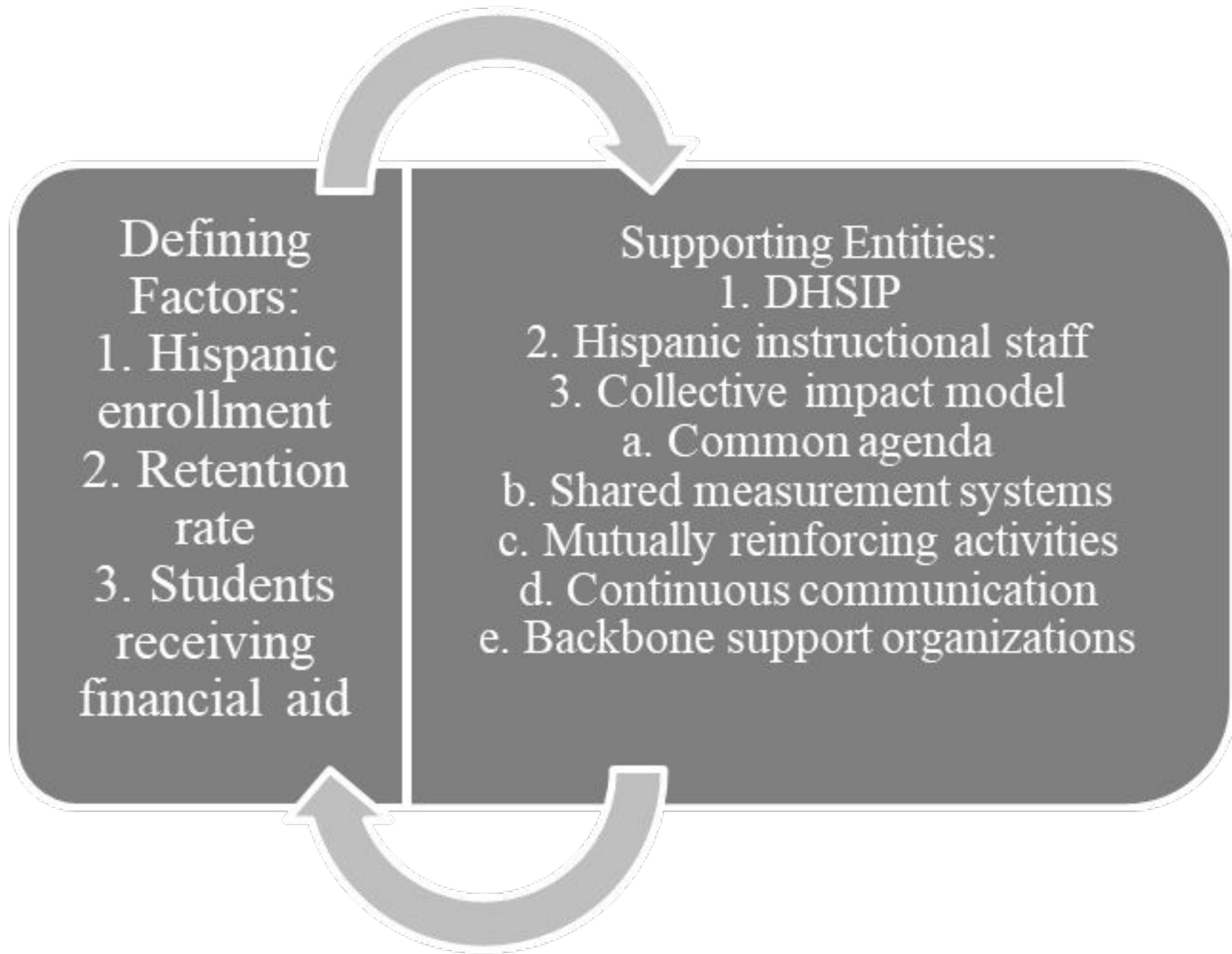
Staff
Interviews

Positive cases (Rural four-year HSIs that experienced increased graduation rates) used to establish a truth table of casual conditions

Undergraduate
Hispanic Student
Graduation Rates

DHSIP Grant
Acquisition





Chapter III: Methodology

Table 1
Comparison Table

Cases (Rural HSIs)	Sector	Location	Locale	FTE	% Hispanic	% FTFT Pell Recipients	% H/L Staff	DHSIP
ASU	Public	Colorado	Remote town	2,026	35%	54%	18%	Yes
ENMU	Public	New Mexico	Remote town	2,890	35%	51%	7%	Yes
Heritage	Private	Washington	Rural fringe	919	68%	71%	10%	Yes
Humboldt	Public	California	Remote town	7,885	35%	54%	4%	Yes
NSC	Public	Nevada	Rural fringe	1,539	27%	49%	8%	Yes
NM Tech	Public	New Mexico	Remote town	1,655	31%	30%	7%	Yes
NNMC	Public	New Mexico	Distant town	590	67%	78%	44%	Yes
Schreiner	Private	Texas	Remote town	1,131	35%	39%	10%	Yes
SFSC	Public	Florida	Rural fringe	945	35%	60%	3%	No
SAU	Private Christian	Texas	Fringe town	679	45%	56%	10%	No
Sul Ross	Public	Texas	Rural town	1,538	65%	57%	22%	Yes
TAMU-K	Public	Texas	Distant town	6,759	65%	-	21%	No
TAMU-S	Public	Texas	Rural fringe	2,627	65%	-	21%	No
TLU	Private Lutheran	Texas	Fringe town	1,225	32%	37%	7%	No
U Southwest	Private	New Mexico	Rural fringe	491	49%	55%	9%	No
Western	Public	New Mexico	Remote town	1,673	40%	68%	14%	No

Table 2
Crisp-Set QCA Cases and Causal Conditions Table

Cases (Rural HSIs)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
ASU															
ENMU															
Heritage															
Humboldt															
NSC															
NM Tech															
NNMC															
Schreiner															
SFSC															
SAU															
Sul Ross															
TAMU-K															
TAMU-S															
TLU															
U Southwest															
Western															



Chapter IV: Findings

- Solutions
 - Complex: **EH•MS•SO (HS•dp15•dp•he + DP•IA•hs) + MS (SO + IA•HS)**
 - Parsimonious: **HS•EH•MS•SO (HE + DP•ia) + MS•SO (dp•ia•eh) + IA•HS•MS**
 - Intermediate: **DP•EH•MS•SO (he•ia•hs) + MS•SO (he•hs•eh) + IA•HS•MS**
- Five of the seven which received grants prior to 2015 did not have positive outcomes
- Four of the six which received grants since 2015 did have positive outcomes

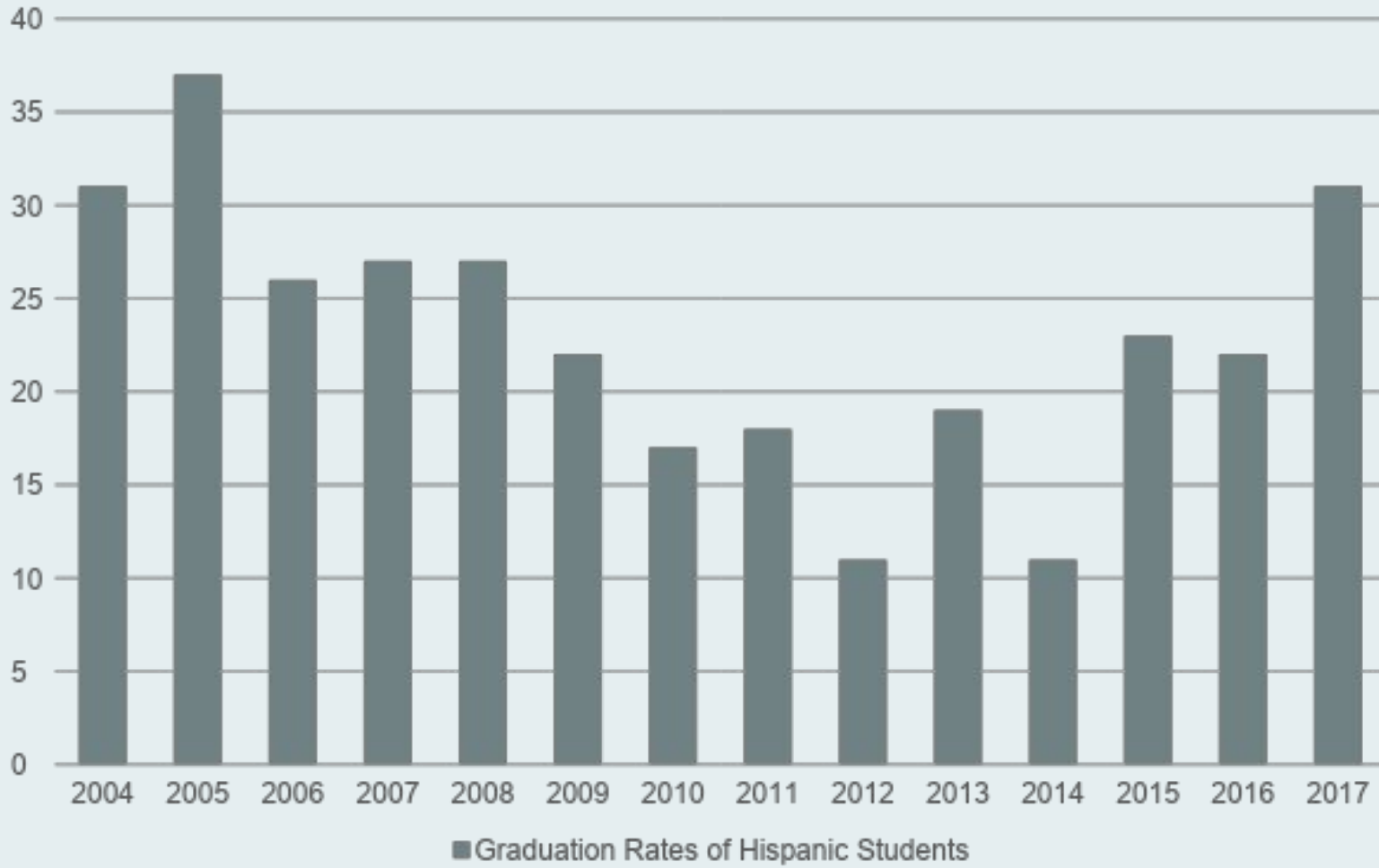


Chapter IV: Findings

Table 3

IPEDS 5-Year Averages Comparison Table with Graduation Rates by Institution

<u>Cases (Rural HSI)s</u>	<u>Sector</u>	<u>Location</u>	<u>Hisp. Enroll</u>	<u>Retention</u>	<u>Financial Aid Recipients</u>	<u>Pell Recipients</u>	<u>Inst. Aid</u>	<u>H/L Staff</u>
ASU 22% to 17%	Public	Colorado (Remote town)	31%	57%	94%	53%	69%	17%
ENMU 26% to 25%	Public	New Mexico (Remote town)	34%	59%	98%	53%	43%	6%
Heritage 19% to 21%	Private	Washington (Rural fringe)	57%	68%	99%	87%	96%	13%
Humboldt 34% to 38%	Public	California (Remote town)	27%	74%	76%	50%	48%	4%
NSC 5% to 11%	Public	Nevada (Rural fringe)	21%	68%	88%	55%	37%	9%
NM Tech 43% to 45%	Public	New Mexico (Remote town)	27%	76%	94%	29%	79%	7%
NNMC 18.6 to 18.4%	Public	New Mexico (Distant town)	69%	55%	88%	71%	10%	44%
Schreiner 46% to 41%	Private	Texas (Remote town)	30%	69%	99%	42%	99%	7%
SFSC 45% to 50%	Public	Florida (Rural fringe)	29%	-	90%	65%	10%	2%
SAU 44% to 45%	Private Christian	Texas (Fringe town)	38%	69%	98%	58%	94%	9%
Sul Ross 21% to 27%	Public	Texas (Rural town)	64%	53%	92%	63%	27%	20%
TA&M-K 33.4% to 33%	Public	Texas (Distant town)	69%	66%	90%	59%	50%	17%
TA&M-SA -	Public	Texas (Rural fringe)	65%	-	-	-	-	19%
TLU 42% to 39%	Private Lutheran	Texas (Fringe town)	30%	70%	99%	39%	98%	8%
U Southwest 38% to 21%	Private	New Mexico (Rural fringe)	44%	54%	97%	57%	94%	8%
Western 17.6% to 17.8%	Public	New Mexico (Remote town)	48%	53%	95%	69%	25%	15%



ASU Data

- SY 2006-2007 to SY 2010-2011 compared to SY 2011-2012 through SY 2015-2016: 22% to 17%
- SY 2007-2008 to SY 2011-2012 compared to SY 2012-2013 through SY 2016-2017: 19% to 21%
- SY 2003-2004 through SY 2009-2010 compared to SY 2010-2011 to SY 2016-2017: 27% to 19%



Chapter IV: Findings

Table 4

Crisp-Set QCA Cases and Causal Conditions Table

Cases (Rural HSI)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
ASU	1	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1
ENMU	1	0	0	0	1	1	0	1	1	1	1	1	1	0	1	1
Heritage	1	1	1	0	1	1	1	1	1	1	0	1	1	0	1	1
Humboldt	0	1	0	1	0	1	1	0	1	1	1	1	1	1	1	1
NSC	0	1	0	1	1	1	0	1	1	0	1	1	0	1	1	1
NM Tech	0	1	0	1	1	0	1	1	1	0	1	0	0	0	1	1
NNMC	1	1	1	0	1	1	0	1	1	1	1	1	0	1	1	1
Schreiner	1	0	0	0	1	1	1	1	1	0	1	0	0	0	1	0
SFSC	0	0	0	-	1	1	0	0	0	1	0	1	0	0	1	0
SAU	0	0	0	0	1	1	1	1	0	0	1	0	0	0	1	0
Sul Ross	1	0	1	0	1	1	0	1	1	1	1	0	0	0	1	1
TA&M-K	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1
TA&M-SA	0	0	1	-	-	-	-	1	0	1	1	1	1	1	1	0
TLU	0	0	0	0	1	1	1	1	1	1	1	0	1	0	1	0
U Southwest	0	0	1	0	1	1	1	1	0	0	1	0	0	0	1	0
Western	0	0	1	0	1	1	0	1	1	1	0	1	0	0	1	0

Table 5

Crisp-Set QCA Truth Table

Row	DHSIP 09-15	DHSIP	Hisp. Enroll.	Inst. Aid	H/L Staff	Est. HSI	Mgmt. Sys.	Supp. Orgs	Cases With	Cases W/O	Consistency
1	1	0	0	1	1	1	1	1		1	0.0
2	1	0	0	0	1	1	1	1		1	0.0
3	1	1	1	1	1	1	1	1	1	1	0.5
4	0	1	0	1	0	1	1	1	1		1.0
5	0	1	0	0	1	1	1	1	1		1.0
6	0	1	0	1	1	1	1	1	1		1.0
7	1	1	1	0	1	1	1	1		1	0.0
8	1	0	0	1	1	1	1	0		1	0.0
9	0	0	0	0	0	0	1	1	1		1.0
10	0	0	0	1	1	0	1	0	1		1.0
11	1	0	1	0	1	1	1	1	1		1.0
12	0	0	0	1	1	1	1	1		1	0.0
13	0	0	1	1	1	0	1	0		1	0.0
14	0	0	1	0	1	1	1	1	1		1.0



Chapter V: Discussion

- Causal condition combination present in all three solutions:
 - Being an established HSI
 - Having management systems
 - Having support organizations

Table 6		
<i>Positive Cases' Causal Condition Combinations</i>		
	<u>Institution</u>	<u>Combination</u>
Heritage		DHSIP before 2015, DHSIP after 2015, Hispanic Enrollment, Institutional Aid, Hispanic/Latino Staff, Established HSI, Management Systems, Support Organizations
Humboldt		DHSIP after 2015, Institutional Aid, Established HSI, Management Systems, Support Organizations
NSC		DHSIP after 2015, Hispanic/Latino Staff, Established HSI, Management Systems, Support Organizations
NM Tech		DHSIP after 2015, Institutional Aid, Hispanic/Latino Staff, Established HSI, Management Systems, Support Organizations
SFSC		Management Systems, Support Organizations
SAU		Institutional Aid, Hispanic/Latino Staff, Management Systems
Sul Ross		Hispanic Enrollment, Institutional Aid, Hispanic/Latino Staff, Management Systems
Western		Hispanic Enrollment, Hispanic/Latino Staff, Established HSI, Management Systems, Support Organizations

Causal Conditions Within the Theoretical Framework

Implications

Practice at Rural Four-Year HSIs

DHSIP Policy

Future Research Concerning the DHSIP and Hispanic Student Achievement

Practice, Policy, and Future Research at Adams State University

Chapter V: Discussion

