

A STUDY OF TEXAS COMMUNITY COLLEGE PROPERTY TAX FUNDING AND
SELECTED PERFORMANCE MEASURES

by

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DISSERTATION

Presented to the Faculty of
The University of Houston-Clear Lake

In Partial Fulfillment

Of the Requirements

For the Degree

DOCTOR OF EDUCATION

in Educational Leadership

THE UNIVERSITY OF HOUSTON-CLEAR LAKE

May, 2019

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Dedication

I dedicate this body of work to the memory of my father, Joe Cantu, who always dreamed this dream with me and to my grandmother, Amelia Mayorga, who has always loved me best.

Acknowledgements

This work would not have been possible without the help of many people. I would like to thank my committee chair, Dr. Antonio Corrales, for his mentoring, encouragement, and support. His examples of fearlessness and determination are matched only by his work ethic, and I am lucky to have learned from his example. I also appreciate the help of Dr. Michelle Peters, whose knowledge of quantitative data is so expansive it is a shame I did not complete twenty more dissertations just to watch her teach the methodology required from all of them. I would like to offer my thanks to Dr. Richardson whose seminar-style teaching is something I will never forget; he made the study of law such a powerful experience. When I start my “It Depends” t-shirt company, I vow to share the proceeds with him. Lastly, I would like to express my sincere gratitude to Dr. Roberta D. Raymond whose support, enthusiasm, and approach to qualitative coding made me regret I did not find her sooner.

I will forever be indebted to the community college chancellors and presidents who allowed me to interview them for the purpose of my study. My 15 face-to-face interviews and one phone interview allowed me to speak with amazing community college leaders and pioneers. Because of their examples, I will remember to always offer my time to doctoral students and pay the kindness forward.

Pursuing a terminal degree is no easy feat, and the last three years would have been a great deal more challenging without the friends and family who selflessly gave of their time to help me achieve this dream. My best friend, Lauren Allen, lovingly and enthusiastically took care of my children week after week for three years. I can never repay this debt to her, but I will always try. My mother, Marie Morgan, did the same, stepping in to keep my house running and my little people on track. I thank her for her unconditional support. My in-laws, Charley and Infa Wilson, and my sister-in-law,

Denise also never hesitated to jump in when they were needed and have been some of my most enthusiastic supporters throughout this journey. I have been blessed to have the support and love of my amazing siblings, Marc, Billy, Veronica, Sarah, and Gabe. They will never know how much I love them and how proud they make me. I thank my very big, very loud, very fun, and very loving Mayorga family in Brownsville, Houston, and Austin. I have always known who I was because of you. In the best and worst of times, my aunts and uncles were a foundation of great strength that was always applied with great humor. Sylvia, Sandra, Cleo, Christina, Lonnie, Sara, and Michael taught me that laughter makes everything in this world better, and I love them for that life lesson. I celebrate this endeavor with the Mayorga Cousins; as the oldest of 25 grandchildren, I offer this work as proof that we are all capable of amazing things. And because it's a very Mayorga thing to do, I'll thank each of you by name: Jennifer, Marc, Billy, Veronica, Sarah, Johnny, Kimberly, Jessie, Abby, Benny, Laura, Junior, Kelly, Lonnie Boy, Brittney, Ben, Brenda, Angie, Jessica, Ashley, Bobby, Mikey, Vivi, and Tori – thank you. I would also be remiss if I did not take this opportunity to put into a document that is now published and will live on forever the following statement: Uncle Lonnie loves me best.

In the last year, I was lucky to have the timely and always effective coaching and encouragement of my friend and business partner, Gary. Thank you, Gary, for helping me to always see the best path forward; I absolutely treasure your friendship, and I am very proud of the work we are doing together. In addition, I am grateful for the support of my work colleagues, Amy, Sue, Rene, Stanley, Emily, and Tanya. How lucky I am to have such amazing people in my professional life. Through floods, fires, freezes, and flu, we have stuck together. My Ranger College dance team friends-of-a-lifetime also cheered me on during this process. Shannon, Leticia, and Trisha – you mean the world to me.

I would like to thank my little ones, Emma, Ava, and Easton who are the most well behaved children in the world. They so seldom complained about my workload that I wondered if they believed that I just really enjoyed staring fiercely at a computer for three years. Their patience and benevolence with me is something I hope to always return to them. I hope they will remember that anything worth doing is worth doing well, that chasing big dreams is the stuff of life, and that loving all people is the most important art to master in this world. In addition, I wish to thank my husband, Brock. He has never once wavered in his support of me, and his love and friendship are truly unconditional. I'm proud of the way we have always encouraged each other to be our best selves.

Finally, I would like to thank my cohort member, Holly whose friendship has been the most unexpected gift of this experience. Aside from being grateful that I could reach out to her before dawn seven days a week for the last three years, I have been inspired by her example. I could not have made it through this program without her - of this I am sure.

ABSTRACT

A STUDY OF TEXAS COMMUNITY COLLEGE PROPERTY TAX FUNDING AND SELECTED STUDENT PERFORMANCE MEASURES

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The purpose of this sequential mixed methods study was to examine the relationship between Texas community college property tax revenue and student transfer, licensure, and completion. This study reviewed data obtained from the Texas Higher Education Coordinating Board and the Texas Association of Community Colleges for a purposeful sample of the 50 community college districts in Texas in order to determine funding impact. A purposive sample of 16 community college presidents was used for semi-structured interviews which allowed for a deeper understanding of the relationship between property tax funding and student transfer, licensure, and completion. Findings of this study concluded that there was a relationship between Texas community college property tax revenue and transfer, licensure, and completion. For both rural and non-rural community colleges in Texas, there was a relationship between property tax revenue and transfer, licensure, and completion. For border and non-border community colleges, there

was a relationship between property tax revenue and transfer, licensure, and completion. Regarding the 10 education regions in Texas, there was a relationship between property tax revenue and transfer in Regions 3, 6, and 8. There was also relationship between property tax revenue and licensure in Regions 3, 6, 7, and 8. Findings of this study showed there was a relationship between property tax revenue and completion in Regions 2, 3, 4, 6, 7, and 8. Lastly, findings from the semi-structured interviews revealed that 65% of the community college chancellors and presidents felt there was a relationship between property tax revenue and student transfer, 50% felt there was a relationship between property tax revenue and student licensure, and 94% felt there was a relationship between property tax revenue and student completion.

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CHAPTER I: INTRODUCTION

The relationship between funding and student performance is not a new issue in education, but it is one that has been explored and debated more deeply at the K-12 public education level (Baker, 2012). Texas community college funding and its impact on student performance requires an equal focus because these institutions are faced with the task of educating 50% of higher education students (The Higher Education Coordinating Board, 2018) in the state despite a serious state funding decrease from 66.0% to 25.0% in the last thirty years (Texas Association of Community Colleges, 2019). Following the structure and function of K-12 funding models (Mullin & Honeyman, 2007), community colleges are subjected to a multi-faceted structure that includes: (a) a base state allotment, (b) funding for the number of hours students spend in class, (c) outcome-based funding, and (d) local property tax revenue funding, and (e) federal funding (THECB, 2018).

Due to higher education not being mandated through state or federal constitutions (Mullin & Honeyman, 2007), however, community colleges ultimately face decisions about how to make up for monetary shortfalls (Katsinas & Tollefson, 2009) caused by internal factors like declining student achievement (Bound, Lovenheim, & Turner, 2010) and external influences such as enrollment changes due to economic factors (Barr & Turner, 2013; Juszkievicz, 2016) like the Great Recession of 2008 (Mitchell, Leachman, & Masterson, 2017). Due to the complicated nature in which community colleges are funded, the idea of local control has become increasingly important to these two-year public institutions. Local control of revenue streams presents itself in two different ways at the community college level.

Historically, one local control technique for reducing budgetary shortfalls has been to raise student tuition and fees (Barr & Turner, 2013; Shannon & Smith, 2006). However, because this is an immediate fix at the institutional level, it is also the most susceptible to over-application (Nelson, Brenneman, & Gustafson, 1981). In addition, because of the wide disparity in local property tax revenue efforts, this option puts an undue burden on the students of property poor colleges (Matula, 2001) and goes against the purpose of open access, two-year institutions to provide a quality, affordable education (Shannon & Smith, 2006). It also threatens to effectively price middle income families out of higher education if the rising costs of community college tuition cannot be offset by the assistance in the form of federal support (Barr & Turner, 2013). Since the Great Recession of 2008, there has been a 35% increase in higher education tuition nationally, and although higher education federal funding levels rose by 68% between 2008 and 2016 (Mitchell, Leachman, & Masterson, 2017) in order to help offset post-secondary budget cuts, this assistance has not been advantageous to academically and economically disadvantaged students (Mitchell, Leachman, & Masterson, 2017). This is significant because community colleges enroll a larger percentage of minority and low-income students (US Department of Education, 2013). With community colleges struggling in the endeavor to make significant gains in retention and persistence, (McKeown, Moak, 2013), the idea of putting additional burden on an already challenged population of students may not be feasible to legislators or college administrators.

Another method of local control involves raising property tax rates (Kenyon, 2007) for the college taxing districts. However, because community colleges in Texas operate from widely varied property tax bases (Brockman, 2001) and because such a decision is based on college board approval and voter support, colleges are limited to what they can do locally to make up for funding lost each biennium.

Community colleges are an integral entry point to higher education (Miller, 2006) for a large population of students who are minorities and historically both academically disadvantaged (Miller, 2006) and economically disadvantaged (Shannon & Smith, 2006). Since the Great Recession of 2008, there has been mounting pressure on these colleges to increase graduate numbers (THECB, 2018) and fill a need in local industry for highly skilled workers (Mitchell, Leachman, & Masterson, 2017). Though state revenues have returned to pre-Recession of 2008 levels, funding for higher education remains at rates below 2008 levels (Center, 2012). And while both state and local revenue are major sources of support for community colleges, the significant reduction in state allocations means that community colleges will struggle to find ways to meet state and national completion goals (Center, 2012). This forces institutions to depend on local revenue efforts to make up for what the state fails to provide. For these reasons, it is necessary to examine the impact of property tax revenue on student achievement at Texas community colleges by using outcome measures established by the Texas Legislative Budget Board. This study will be a contribution to the limited research that exists on this important issue and will seek to answer the following question: Does property tax revenue impact student achievement in the areas of transfer, licensure, and completion?

Research Problem

In order to fully understand the funding and student achievement issues facing Texas community colleges, it is necessary to frame the discussion by reiterating that the policies surrounding funding originated from K-12 policies (Mullin & Honeyman, 2007) because community colleges were once under the oversight of the public-school state education agencies (Witt, 1994). Because of this, the complex funding model in the state was created not as a linear effort but rather as a model that evolved to meet the changing needs of the state and its institutions (Mullin & Honeyman, 2007) and to accommodate a

growing population of students (Honeyman, Williamson, & Wattenburger, 1991) whose goals include transfer, licensure, or completion.

In addition, because postsecondary education is not compulsory by the state or federal government, (Zumeta, 1996), the responsibility of funding community colleges fell to the state. As a result, the current funding model was developed based on the needs of the institutions, the state's standards for these institutions, and the capacity of the state itself (Mullin & Honeyman, 2007). To that end, the state depended on the property tax funding used at the K-12 level and added other funding components such as tuition and fees revenue, enrollment based-funding, state base allocation, contact hour funding which is much like the per-pupil allotment in K-12, and outcome-based funding (THECB, 2018; Mullin & Honeyman, 2007). This type of funding is relevant to this study because any reduction in state funding means added pressure on colleges to mount local efforts to make up for shortfalls and thus could impact an institution's commitment to support students in their goals of transfer, licensure, or completion.

In a post Great Recession of 2008 era, the idea that the pursuit of higher education is not essential for success in life (Nelson, Brenneman, & Gustafson, 1981) has faded and has been replaced by hard data showing an increasing need for college educated workers (Mitchell, Leachman, & Masterson, 2017). Indeed, the U.S. has progressively shown its willingness to depend on community colleges to provide the type of market-skills training that used to occur in the workplace (Townsend & Dougherty, 2006). It is also increasingly true that community colleges play a central role in meeting college completion goals (Center, 2012). Student goals are varied and can extend from transferring after the completion of the college core courses to obtaining a license in one or two semesters to graduating with an associate's degree. It is clear that funding must stretch to accommodate these goals and support students in these individual endeavors.

In Texas, the role of community colleges has been largely illustrated through the creation of state education initiatives. The first was in 2000, when the Texas Higher Education Coordinating Board developed the Closing the Gaps by 2015 initiative which focused on improving student retention and persistence of minority students in particular (THECB, 2018). The second point was after the Great Recession of 2008, when the economic implications of this event became relevant to higher education institutions and an integral part of the development of the state's second initiative, 60X30TX (THECB, 2015). Due to both the dramatic influx of displaced workers to higher education institutions and the eventual budgetary cuts to these institutions because of the economic downturn (Barr & Turner, 2013), the state created a new higher education initiative that aims to ensure that 60% of the population in Texas aged 25-34 will have a certificate or degree by the year 2030 and will have graduated from programs that teach marketable skills (THECB, 2018). However, the ability of institutions to support students in their completion endeavors depends on funding (THECB, 1968), and a key higher education report that detailed the impact of the Great Recession on higher education funding offered results from a survey of the National Council of State Directors of Community Colleges. This report showed concern on the part of respondents over significant increases in tuition and cuts to technical and vocational programs (Katsinas, Tollefson, & Terrence, 2009). Factors like tuition increases and programmatic cuts could affect student completion and licensure attainment and can force two-year institutions to rely on other sources of local funding like local property tax revenue in order to keep tuition affordable and keep technical and vocational programs open.

In Texas, the main source of local funding is property tax revenue. Community colleges are required by law to institute local property taxes for the maintenance and operations of district facilities and instructional purposes. Local community college

governing boards determine the tax rates for their districts, and these tax rates can also include bonds for the construction of new facilities. The taxes for each community college district are based on property value within that taxing district and vary across the state per institution because property value varies per community college district. While tax rates for both rural and urban community colleges do not differ greatly, revenues generated by those tax rates do differ, with revenue being lower for more rural institutions (Waller et al., 2007). For states like Texas that depend on local revenue to partially fund community college maintenance and operations and instructional costs, differences in property wealth between college taxing districts can mean inequities when it comes to per-student funding (Brenneman & Nelson, 1981). In addition, community college budgets must cover the costs of campuses that are in their service districts but not their taxing districts, meaning they collect no property tax revenue for them. Though branch campuses in the service districts can be funded through a branch campus maintenance tax, this requires voter support from service district taxpayers (TEC 130.253, 2018). Service districts, legislatively created in 1995, can also be funded through an institution's use of out-of-district tuition (TACC, 2018). Figure 5.1 illustrates the service districts and Figure 5.2 illustrates the taxing districts for Texas community colleges.

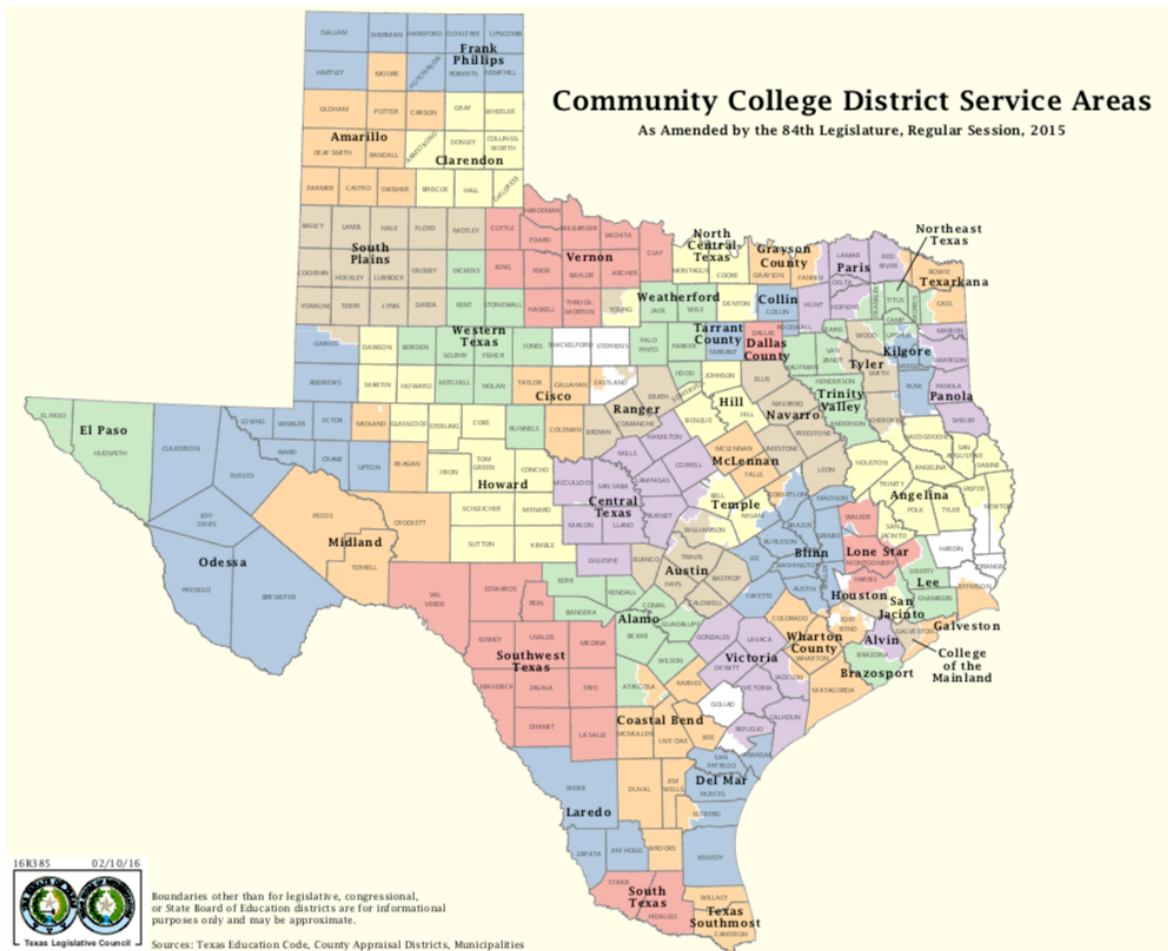


Figure 5.1 Texas Community College Service Districts

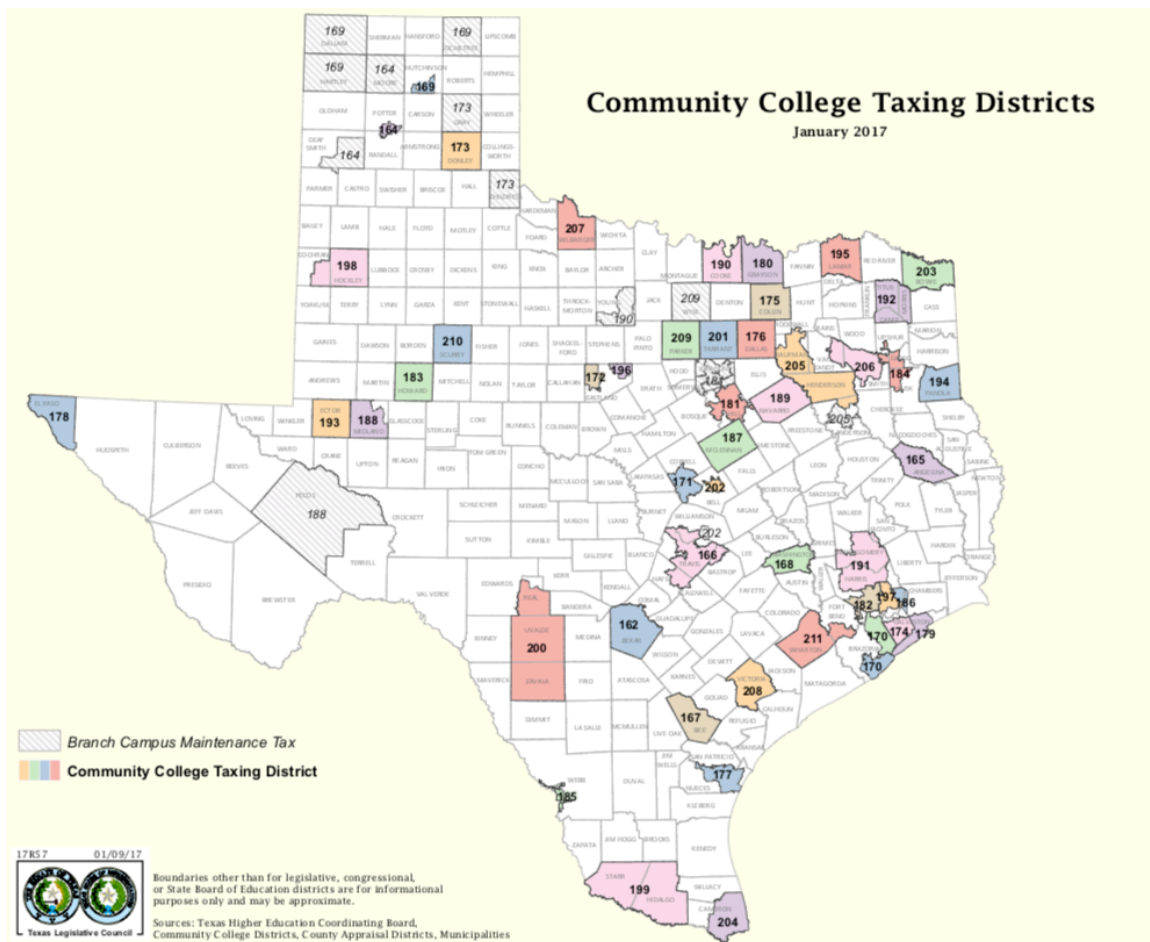


Figure 5.2 Texas Community College Taxing Districts

As shown in Figure 5.1, Texas community colleges collect property taxes for much smaller geographic areas than the larger service areas for which they are responsible. Colleges with large service areas and low property tax revenue can see lower per-student expenditures, a clear disparity from institutions that have higher property tax revenue (TACC, 2019). Ultimately and according to research cited in this study, this is something that can affect student achievement directly and indirectly.

At the public education level, there have been many studies conducted to analyze the connection between school funding and student achievement (Baker, 2012; Houck &

Kurtz, 2010; Konstantopolous & Borman, 2011; Sanford & Hunter, 2011). In Texas and perhaps nationwide, the same efforts could be expended to determine how funding affects student outcomes like transfer, licensure, and completion.

The Texas community college funding model, reminiscent of the Texas public education funding model (Mullin & Honeyman, 2007), creates inequities, putting small and rural and property poor community colleges at a disadvantage (Dowd & Grant, 2006; Kahlenberg, 2015). State shortfalls in funding, especially after historical economic downturns like the Great Recession of 2008, can impact a campus' ability to keep tuition affordable at these open access institutions so students can meet their transfer, licensure, and completion goals (Barr & Turner, 2013). The present study will be a contribution to former studies that have sought answers to an increasingly important question: Is property tax revenue a determinant factor in student transfer, licensure, and completion at community colleges?

Significance of the Study

The central role of community colleges has been well documented, especially since the Great Recession of 2008 (Barr & Turner, 2013; Carlson, 2013). The ability of two-year institutions to offer transfer pathways, licensure, and completion credentials depends greatly on their ability to have some control of funding (THECB, 1968). The Texas community college funding model, reminiscent of the Texas public education funding model, puts rural and property poor community colleges at a distinct disadvantage (Matula, 2001). Decreases in state funding as a result of economic downturn can impact the function of the entire funding model of community colleges in Texas, adding pressure to colleges that are trying to improve student metrics in order to earn funding through the outcome-based part of the funding model and also causing

institutions to rely on other revenue-generating methods such as raising local tax rates or increasing tuition and fees (Hemelt & Marcotte, 2011).

In Texas in the fall of 2018, 1.5 million students were enrolled in higher education institutions (THECB, 2018). Over 50% of those students were enrolled in a Texas community college (THECB, 2018) putting a focus on student performance and degree attainment at this level because of the key role community colleges play within the scope of the job market for mid-level employees in particular (Grubb, 1996). With such a large population of Texans attending these open access institutions, it is imperative to know the effect that local funding efforts have on student transfer, licensure, and completion rates.

Research Purpose and Questions

The purpose of this mixed methods study was to determine if a relationship exists between Texas community college property tax revenue and student transfer, licensure, and completion. The study addressed the following research questions:

1. Is there a relationship between Texas community college property tax revenue and transfer?
2. Is there a relationship between Texas community college property tax revenue and licensure?
3. Is there a relationship between Texas community college property tax revenue and completion?
4. What are the perceptions of Texas community college chancellors and presidents on the relationship between property tax revenue and selected student performance measures as set forth by the Texas Legislative Budget Board?

Definitions of Key Terms

Completion: Defined as short and long term certificates and associates degrees awarded by two-year institutions for an academic year (Dadgar & Trimble, 2015).

Enrollment: The number of students enrolled during an academic year. In this study, the number of students enrolled for academic year 2018 (THECB, 2018).

Licensure: Defined as the type of certification awarded to students in a career and technical program that requires the successful completion of an exam that allows for the practice in that industry. This is calculated for an academic year. (THECB, 2018).

Performance Measures: These are the criterion used for assessing performance of community colleges and are set by the Texas Legislative Budget Board (LBB, 2018).

Property Tax Revenue: Monies generated from local levies that are based on property valuation within a taxing district (Song & Zenou, 2006).

Service District: The geographical market for community college education services as defined by the Texas Education Code, Chapter 130, Subchapter J (THECB, 2017; TEC, 1965).

Taxing District: A portion of the state created to serve as a property tax base for a community college district (Song & Zenou, 2006).

Transfers: Defined as the number of students who transfer to a university for an academic year (THECB, 2018).

Conclusion

This chapter provided a general overview of the need and purpose of the study, the overall significance of the problem, the research purpose and questions, and the key terms that relate to this study. This study seeks to answer questions regarding the relationship between Texas community college property tax revenue and student transfer,

licensure, and completion. The subsequent chapter provides a thorough literature review for the most significant topics covered in this study.

CHAPTER II:

REVIEW OF THE LITERATURE

At the community college level, studies that have addressed the relationship between funding and student achievement have largely focused on issues such as outcome-based funding, (Banta, Rudolph, Van Dyke, & Fisher, 1996; Bogue & Johnson, 2010; Harnisch, 2011; Umbricht, Fernandez & Ortagus, 2017) effects of the Great Recession of 2008 on community college funding, (Barr & Turner, 2013; Hiltonsmith & Draut, 2014; Douglass, 2010; Zumeta, 2010), or the effects of community colleges on labor market outcomes (Jepsen & Troske, 2014; Marcotte, Bailey & Borkoski, 2005; Martorell & McFarlin, 2011).

Very few researchers have examined the relationship between local funding in the form of property tax revenue and its impact on student achievement. This lack of focus on the area of local control can be concerning to community college stakeholders and administrators in particular who know that the state's decreasing support means they must find other ways to keep their institutions viable. In an age of increasing accountability from both the state of Texas with its 60X30TX initiative and from local industry, two-year colleges are increasingly pressured to do more with less (Mullin, 2010).

The purpose of this study was to examine the relationship between property tax revenue and student achievement in the areas of transfer, licensure, and completion. To address these areas, this literature review focused on community college (a) transfer, (b) licensure, (c) completion, and (c) property revenue.

Student Transfer

In the most significant study completed on the relationship between community college funding and student outcome measures like transfer, Matula (2001) found a

statistically significant correlation between property tax revenue and student transfer. In this quantitative study, the author examined the institutions in the 43-county state, comparing border colleges to non-border colleges and rural colleges to urban colleges in relation to results on performance outcomes set by the Legislative Budget Board and local property tax funding. In this detailed study, the author took self-reported institutional data from all 50 community colleges in Texas and focused on enrollment, performance outcomes, property tax capacity, and tax effort for each institution. Using bivariate correlation analysis, the researcher analyzed thirty variables and conducted deeper analysis using a Mann-Whitney approach. The results of this study indicated a correlation between higher property tax revenue and higher numbers of transfer. Other research has delved into another important area of transfer: transfer preparation programs offered by community colleges. In this more current quantitative study, Kim (2018), closely evaluated the effect of transfer preparation on transfer rates for community college students, effectively making the case that community colleges should provide transfer training and services to students. Kim (2018) investigated the factors of tuition subsidies and transfer pathways for students. The findings of the study indicated that when community college students were offered information and training on transferring to universities, enrollment increased by 19.0%, and transfer rates increased by 27.5%.

Other research endeavors have highlighted the importance of offering transfer services at community colleges. Bouck (2012) conducted a mixed methods study in order to determine differences in persistence between community college students who participated in a transfer program and those who did not. The study followed a cohort of students who transferred to a university and ultimately determined that while students who participated in the transfer program did not show increased levels of persistence, there were ultimately other factors found to influence student persistence. These factors

included participation in learning communities, relationship building with key stakeholders, and academic integration. Additionally, the researcher concluded that states needed to allocate more funding to transfer efforts in community colleges, indicating that funding levels were not sufficient for influencing positive transfer behavior. This study lends to the idea that transfer initiatives require funding support (Bouck, 2012).

When funding is adequate, transfer is positively impacted. In a significant study by Hopkins (2017) that examined the impact of transfer programs on student retention, credentialing rates, and culture shock, funding was found to influence successful transfer of community college students. This quantitative study followed 1,500 students who participated in a transfer program called “Transitions to Higher Education” which was implemented for ten years at a Hispanic Serving Institution in the southwest and then discontinued for a period of three years. Students who participated in the two-unit course were analyzed against 1,500 students who did not enroll in the course. Findings concluded that students who participated in the transfer course had better persistence rates and better graduation rates, stressing the importance of implementing intervention programs that aid in transition, particularly for first generation students and indirectly showing the relationship between the funding needed to implement and support such a program and its ultimate results, which were increased transfer rates.

While successful transfer is a clear focus of many studies, post-transfer assimilation and success has also proven to be affected by funding. In an effort to determine what works in helping students succeed and persist after transferring, Peters (2018) conducted a phenomenological study, following the experiences of seven community college transfer students. Using interpretive phenomenological analysis, the study determined that providing sufficient information to community college transfer

students is key to their sense of preparation. Peters determined that factors like intense transfer orientations before actual transfer from community colleges and post-transfer supports positively influence student assimilation and success. In addition, the provision of comprehensive visits that include opportunities to interact with college professors influenced student transfer success, and the study recommended that faculty and staff be trained to work with community college transfer students. Students also depended on tutoring opportunities and benefited from study groups. This study and its focus on four-year institutions highlights the idea that transfer success depends upon the provision of robust and organized transfer experiences for students both at the community college and at the four-year institution (Peters, 2018).

Even the more prepared college students require transfer services, according to research. In a key study conducted in 2015, Iwankow examined the perceptions of high-achieving transfer students on the transfer process, seeking to determine how high-achieving community college students felt about the transfer process to a four-year university. In this study that combined qualitative research and case study analysis, the researcher examined student perceptions of the specific transfer event, drawing from experiences and communications the students had. Twenty-three students from eight different community colleges participated in this study. Findings included student reports on receiving limited support on transfer information from their community colleges, and reports that the information they did receive was generic. Students stated that they wanted access to transfer information in the form of gatherings or trainings and said that the traditional email and poster forms of communication were not effective. Most relevant to this study were students' feelings that a transfer advisor was or would have been instrumental to their success in understanding and achieving transfer. Students also reported that regular academic advisors needed to be trained on the transfer process.

Students also reported that transfer information exchange needed to occur early in the community college experience, citing first year experience programs as an example of where this information would best reach students. This powerful study of high-achieving community college students highlighted the need for college-supported transfer interventions and posited that the provision of transfer advisors and programmatic changes would require funding that is specifically designated for transfer initiatives (Iwankow, 2015).

The perceptions of college leaders regarding the importance of transfer efforts and how to implement them has also been researched. In a 2017 qualitative study, Bragg investigated the interactions between two-year and four-year institutions as they related to the process of transferring and student achievement and how these efforts support the eventual attainment of a four-year degree. Using interpretive phenomenological analysis, the author conducted semi-structured interviews of five community college administrators and five university administrators. The subsequent analysis and findings indicated that college leaders feel that the transfer process should be a collaborative, incentivized process. Further, these administrators felt it was important to have the resources in place to facilitate a successful transfer process for students. In support of this study, Bragg's interview participants communicated a concern about having the funding to address transfer supports for students, citing the reduction in funding at all levels: local, state, and federal. Administrators also referenced the financial strain of engaging in collaborative transfer efforts between their two-year and four-year institutions. Studies on the relationship of community college funding and student achievement also covered the area of completion.

Student Completion

The attainment of a post-secondary credential is the single biggest reason students enroll in higher education (Allen, 1999). In a key 2006 study, the issue of community college credentialing rates was discussed at length. The team of researchers utilized data from Postsecondary Education Data System (IPEDS) surveys and used a least squares method for clustered data to assess a college completion-estimates configuration. In seeking to ascertain issues that determine college completion, the study's most significant finding was that greater institutional spending was related to an increased likelihood of college completion. This reinforces the relationship between community college funding and completion (Bailey, Calcagno, Jenkins, Leinbach & Kienzl, 2006).

In addition to focusing on increasing completion rates, research has also highlighted what influences declining completion rates. One particular study of significant findings was conducted by Bound, Lovenheim, and Turner (2010) and sought to determine what caused completion rates to decrease. Analyzing the National Longitudinal Study for the graduating classes of 1972 and 1992, team of researchers focused on eight-year graduation rates and found that there was a national decrease in credentialing rates across the groups. Most significant in the findings was the data that showed that there is credibility to what the authors call "supply side constraints," meaning the decrease in per-student resources. The study asserts that it will be increasingly difficult for open access two-year institutions to fulfill completion agendas in the face of decreasing state budgets (Bound, Lovenheim, & Turner, 2010).

State appropriations are a focus in other studies as well. In a higher education study that evaluated how state allocations impact student graduation rates, Zhang (2009) found a possible correlation between funding and credentialing rates. The author analyzed graduation rates at four-year institutions and their direct relationship to resource

provision. Using panel data from IPEDS, the author evaluated state funding allocations for full-time equivalent students enrolled in public institutions. Using other funding factors such as in-district and out-of-district tuition, the study showed that higher state funding equaled increased completion rates.

Completion agendas are also a part of the research related to community college completion rates. In an effort to project the costs and effects of completion agenda reforms, Belfield, Crosta, and Jenkins (2014) created a financial model of student endorsement paths as connected to funding and generated revenue. The study included concise data from one college and figured total performance and performance differences among students who chose different endorsements. Using a simulation method, the authors effectively produced selected financial outcomes where the college purportedly met its outcome goals. Some of the findings related to the affordability of completion reforms indicated that efforts to raise completion rates must be coupled with sizeable increases in spending that supports these efforts.

The first official completion reform initiative in Texas, Closing the Gaps by 2015, was discussed at length in a previously mentioned study on the relationship between community college funding and student outcome measures like credentialing. Matula (2001) found a statistically significant correlation between property tax valuation and revenue and completion rates. In this quantitative study, the author examined the institutions in the 43-county state, comparing border colleges to non-border colleges and rural colleges to urban colleges in relation to results on performance outcomes set by the Legislative Budget Board and local property tax funding. In this detailed study, the author took self-reported institutional data from all fifty community colleges in Texas and focused on enrollment, performance outcomes, property tax capacity, and tax effort for each institution. Using bivariate correlation analysis, the researcher analyzed thirty

variables and conducted deeper analysis using a Mann-Whitney approach. The results indicated that community college districts with higher property valuation and lower property tax rates had higher completion rates. In addition to transfer and completion, licensure was another type of performance outcome discussed in the literature about the correlation between funding and student achievement.

Student Licensing

The relationship between funding and community college technical and vocational programs that result in state and national licensure has received some attention by researchers. This is well illustrated by the powerful program discontinuation study conducted by Fleming in 2014 of the California Community College System. Citing career and technical education (CTE) relevance within the overall mission of community colleges in the state, the author evaluated CTE program closures in order to determine the reasons for discontinuance and the impacts on stakeholders. Using a mixed methods approach and triangulation on distinct data, the author included archival information, policy evaluations, and interviews, which were applied in a case study design. In findings that are most significant to the current study, the researcher revealed that CTE program closure occurs when outside funding is decreased (Fleming, 2014).

Another relevant study upholds the value of CTE and its outcome of student licensure attainment and also addressed the supports needed for creating and maintaining these programs in community colleges. Discussing the importance of CTE programs to both community and local business industry, Lassiter (2012) used statistical analysis to determine the key parts of successful CTE programs in an effort to impart this knowledge to higher education institutions. This quantitative study revealed some of those factors as divided into three research objectives. In the first research objective, the author sought to determine the components that uphold the utilization of CTE programs and determined

the most statistically significant factors to be the following: teachers holding the appropriate credentialing to teach the CTE courses, the implementation of appropriate technical exams, and the proper sequence of precise courses as outlined by national standards. In the second research objective, the author sought to show what helps the growth of CTE programs and determined that, among other factors, collaboration between community colleges and universities, student access to licensure exams, and student job training were found to show statistical significance. In the third research question, the author addresses the continuation of CTE programs. Statistically significant factors influencing program continuation were continuing education for educators and educator access to the supplies and equipment relevant to the technical program. All of the results of these research questions indicate both directly and indirectly that CTE programs are important to student success and that funding is a key factor that affects these programs (Lassiter, 2012).

Licensure programs follow different models, but research has shown that one particular model is considered to be more effective than others. In a 2017 mixed methods study, Oldham discussed the national call for increases in licensure for CTE programs at community colleges. Due to well-known completion challenges in open access two-year institutions, Oldham posited that this call to action necessitated a deeper look at CTE instructional design best practices. The author used archival completion data, student survey results, and focus groups of faculty and staff. Findings indicated that in learning community models where CTE students were grouped into cohorts, student completion rates were higher when compared to non-cohort model students. In addition, students stated on survey results that training in laboratory settings was instrumental to their program completion. The study results indicate students, colleges, and local industry can benefit from a college's investment in this type of instructional model (Oldham, 2017).

In another impactful study that delineated the relationship between licensure and funding, Pham (2012) addressed CTE student persistence towards certificate completion and graduation. This study noted the high numbers of students who enroll in community college CTE programs and sought to determine how engagement levels within these programs affected the students' decisions to persist. In a two-part quantitative design, the author compared demographic variables with variables related to student engagement in order to find if they can be used to determine future enrollment. In the second stage of the study, the Community College Survey of Student Engagement (CCSSE) was given to CTE students only. The researcher then used descriptive statistics, correlational analysis, and logistic regressions to investigate the relationship between the engagement and demographic variables and student persistence. Though the researcher did not find correlation between the variables discussed, the results of the CCSSE as applied to CTE students indicated strong intent by students enrolled in these programs to obtain certificates and associate degrees and to transfer to universities for eventual completion of a bachelor's degree. This study shows that CTE programs draw students who have intents beyond licensure attainment, making the case for investing in and sustaining licensure programs.

In an effort to investigate the possibility of fortifying existing CTE programs, Cooper (2014) addressed the idea of embedding developmental education into CTE programs. Citing a demand from industry that colleges address gaps in reading, writing, and deeper thinking skills, Cooper explored the idea of instructional redesign. The author used information from semi-structured interviews, archived data, observations, and focus groups and then applied analysis and triangulation. Finally, cross-case comparison was used to determine findings. The study results indicated a need for professional training for instructors, the employment of content tutors for students, and the facilitation of

communication among faculty and between faculty and students. Ultimately, the study supported the application of remedial instruction as embedded in CTE programs because it supported student success, proving that CTE program redesign influences student success.

Another programmatic factor that influences student success was emphasized in a 2017 study that investigated student attainment of “stackable credentials” in community college CTE programs in an effort to determine the effectiveness of this technique for future employment of completers (Whittington, 2017). Stackable credentials refer to the attainment of certificates, degrees, and licenses within CTE programs. In this quantitative study, the researcher analyzed the results from a survey given to local industry professionals to determine if stackable credentials were beneficial for students and not simply an unnecessary expense in schooling. Descriptive statistics were used to analyze the data, and findings concluded that obtaining a national licensure would give job candidates preferential treatment from hiring managers. This conclusively shows relevance for community college CTE programs regarding the administration of stackable credential program design as a worthy investment that impacts student success in the job market. Whittington further indicates that even with limited budgets, there is a call for community college leaders to offer this design at their institutions because of its relevance to increasing state, national, and industry accountability standards. The final construct of this literature review on the relationship between funding and student achievement is a study of property tax revenue.

Property Tax Revenue

The most significant study completed on the topic of property tax revenue in Texas as it relates to student performance outcomes was completed in 2001. In this quantitative study, Matula examined the institutions in the 43-county state, comparing

border colleges to non-border colleges and rural colleges to urban colleges in relation to results on performance outcomes set by the Legislative Budget Board and local property tax funding. In this detailed study, the author took self-reported institutional data from all fifty community colleges in Texas and focused on enrollment, performance outcomes, property tax capacity, and tax effort for each institution. Using bivariate correlation analysis, the researcher analyzed thirty variables and conducted deeper analysis using a Mann-Whitney approach. The results indicated that community college districts with higher property valuation and lower property tax rates had higher credentialing rates, higher transfer rates, and higher graduation rates of certain students.

The role of community college local funding was also investigated in another powerful quantitative study by Dowd & Grant (2006). In an attempt to discuss the issues of equity and efficiency in and of community colleges, the researchers used various subsample datasets from a financial survey within the Integrated Postsecondary Education Data System (IPEDS) for two-year institutions only. This sample did not include technical colleges due to the high maintenance costs that characterize pure technical institutions, but the researchers recognized the existence of CTE programs at traditional college systems. Focusing only on revenue from local sources and state allocations, the researchers grouped institutions according to their most prevalent funding source, so colleges were classified as either predominantly locally funded or predominantly state funded.

The researchers then attempted to determine an institution's position on an index of state and local appropriations to determine revenue flows. The project used the number of students who receive federal aid as a means of determining service district overall wealth and used the full-time equivalency student data. Ultimately, the study's results showed that local-funding models were usually, but not always, regressive and that the

local finance model as compared to the state finance model creates significant funding disparities for the states in the study who had a local role model of funding or a local role model comingled with a state role model. This study establishes a premise for investigating equity and efficiency impacts of local funding in the form of property tax revenue. The study goes as far as to say that states with local control revenue models should keep them and find ways to maximize this revenue stream by increasing tax rates in order to make up for the lack of funding in low-revenue college districts (Dowd & Grant, 2006).

In a higher education policy analysis, Kahlenberg (2015) evaluated the funding formulas common to higher education institutions. Evaluating the revenue streams separately in terms of local, state, and federal sources, he established several key tenets based on his study of postsecondary funding as compared to K-12 funding and then diversified according to two-year or four-year functions. Kahlenberg argued that persistently low student outcomes at the community college level necessitated a hard look at the effectiveness of separate funding streams, especially because of stricter institutional accountability standards at the state and federal level. Kahlenberg effectively argued that higher education systems, due to a lack of the funding litigation history K-12 systems have had, were due for a thorough evaluation. He established that a global model for determining educational costs per student was needed to establish equitable funding, citing local funding models as one particular area of concern. Aside from inequities among student subsidies between private universities, state universities, and community colleges, the author addressed inequities within the community college base. These inequities are due in large part to property wealth differences between college districts (Kahlenberg, 2015).

In a funding review of Texas community colleges, Cloud (1989) discussed the various revenue streams for community colleges and examined the impact of these funding models for the next decade. The study evaluated institutional functions, enrollment data, and educational costs as well as educational and financial trends in the nation. The researcher discussed both the issues of declining revenue and how states can remediate this occurrence. While the paper largely focused on the contact hour part of the Texas funding model, he did address other sources of revenue, including local funding, which is earmarked for use on the maintenance and operations of college campuses. Listing community colleges as integral to state economic growth because of their role in responding to local industry needs with qualified workers, Cloud effectively predicted state and industry dependence on two-year institutions and also addressed the now-present diversity in community college student populations. The overall significance of this analysis is the author's emphasis on the idea that the state of Texas would continue to be the main source of funding for community colleges, that federal support would not be likely to increase, and that local funding levels would not be efficient in generating more revenue because of tax rates being close to their capped levels. For all three points, the study was ineffective at predicting the complete reversal in the distribution within the funding model for the state, but the author's implication that community college funding is influenced by political factors offered some insight into what factors might have caused such a shift (Cloud, 1989).

In a qualitative study that addressed minority-serving colleges in New Mexico, Hunter (2017) did an evaluation of the correlation between state and federal finance support and the ability of post-secondary institutions to support economically disadvantaged and minority students. Using the Recession of 2008 as an example of a negative catalyst for funding disruption, Hunter noted the decline in state allocations to

post secondary institutions. Using a case study methodology, the author studied one tribal community college, one state community college, and one state university in order to see how the institutions reacted to funding changes within the state landscape. The findings of the study concluded that community colleges are hugely dependent on local revenue for maintaining institutional viability.

In an examination of how local and state funding decreases can negatively impact community colleges, Miller (2013) offered a framework to community colleges that needed other revenue sources in order to maintain stability. Miller recognized economic downturns as a reason that community colleges will increase tuition and fees but also noted that these institutions are especially susceptible to cuts in state allocations due to their funding model, which offers different revenue sources. The author concluded that property tax values decline during recessionary periods and this impacts community colleges due to shrinkage of the tax base and the total revenues that it supplies to these two-year institutions.

In a quantitative study done on the subject of postsecondary institutional capacity of financial foundations, Johnson (1999) used archival data from IPEDS for the years 1992-1993 and 1996-1997 to analyze the institutional local funding capacity and financial base of rural two-year institutions and small, medium, and large rural community colleges. The results of the study were that expenses at a small, rural institution were almost \$2,500 higher per full-time-equivalent student. The study also concluded that rural institutions received less local revenue than other colleges and were therefore reliant on state allocations. In his recommendations, Johnson advised that the state, as a matter of policy, should equalize property taxes for community colleges. The author also notes that rural colleges that needed expensive equipment for CTE programs needed special attention and budgetary oversight.

Another important study regarding the issue of local funding was conducted by Augenblick (1981) and included a multi-state analysis of community college financial models. The author set out to analyze the funding models of states that include a local revenue source as part of the funding structure in order to justify the need for the state to oversee finance function and recognize gaps that may exist as a result of this structure. At the center of the study is a focus on equity among college districts in California, Illinois, and New Jersey. The study included practical analysis of the funding models in these states for the period of two years. The findings supported the idea that community college finance systems are inequitable due to variations in factors such as property tax rates, tuition rates, and the amount of revenue allocated per student (Augenblick, 1981).

Summary of Findings

Research shows that increased funding influences a school system's ability to offer better educational opportunities to students (Baker, 2012). Texas community colleges receive funding through federal, state, and local means, with state efforts decreasing dramatically in the last thirty years (Center, 2012). Additionally, Texas community colleges are under increasing pressure to make up for budgetary shortfalls influenced by state allocation reductions and economic downturns like the Great Recession of 2008 (Michell, Leachman & Masterson, 2017). Further, these institutions are expected to show progress on state accountability initiatives such as 60X30TX on performance outcomes like transfer, licensure, and completion (THECB, 2018).

Facilitating successful student transfer to universities is one of the central functions and goals of community colleges (Bouck, 2012). Part of successful transfer includes a necessary education on transfer processes (Bouck, 2012; Peters, 2018; Iwankow, 2015). Transfer rates are influenced to some degree by budgetary support as evidenced by several studies (Bragg, 2017; Hopkins, 2017; Kim, 2018; Matula, 2001).

Attaining a post secondary credential is the main reason students enroll in colleges (Bailey et al., 2006). Stagnant and declining completion rates have prompted various research efforts aimed at finding the factors that influence this nationwide trend (Bailey et al., 2006; Bound, Lovenheim & Turner, 2010). Community college funding has been shown to influence completion rates (Matula, 2001; Zhang, 2009), and researchers have proposed that completion rates can be influenced positively through increased levels of funding (Belfield, Crosta & Jenkins, 2014).

Career and technical programs fill an important role in community colleges (Cooper, 2014; Lassiter, 2012; Pham, 2011; Whittington, 2017). CTE programs allow institutions to respond to local industry needs (Lassiter, 2012), and allow students to earn credentials that are stackable and increase their employee market value and thus earning potential (Whittington, 2017). These programs that result in professional licenses earned by students are expensive to create and maintain (Lassiter, 2012) and they require adequate operational funding both on the supply and instructional sides in order to meet the completion standards set by industry, the institutional programs, and the state (Fleming, 2014; Lassiter, 2012; Oldham, 2017).

Property tax revenue represents the local control community colleges have over funding efforts. Some community college districts are able to ameliorate budgetary shortfalls through the increase of local tax rates, but some college districts are not able to do so due to local constraints (Matula, 2001). Because of the variance in local property wealth per college district, inequities exist among community college districts (Dowd & Grant, 2006; Kahlenberg, 2015), but local control is still viewed as a helpful part of the funding structure for states that have it (Dowd & Grant, 2006). Economic downturns which result in state allocation cuts to higher education have been shown to influence property tax value, however, which is impactful to a college district's ability to generate

critical revenue (Miller, 2013). Having reviewed the community college constructs of transfer, licensure, and completion as well as property tax revenue, it is necessary to examine both the theoretical framework that bolsters this study and the research that supports its application to this research effort.

Theoretical Framework

Examining the relationship between funding and student achievement is most effectively done through the lens of education production theory (Baker, 2012). Developed in 1953 by Joan Robinson as a philosophy of economics, production function demonstrates a correlation between inputs and outputs in production processes. This theory is applicable to the industry of education and is thereby termed the education production theory. As it developed, it was applied toward the connection of educational factors that impact student learning or inputs like schooling, family, schoolmates, and communities to products like achievement test scores, credentialing rates, college enrollment and completion, and job success (Baker, 2012).

James S. Coleman made subsequent advancement of this theory possible in a document called the Coleman Report (1966) where he incorporated the idea of education production functions into his theory that certain educational issues affect students more than others. Coleman noted that the effect of relatives and friends was more impactful to students. In 1989, Eric A. Hanushek adapted an astute theoretical comparison between the ideas of production and particular academic accomplishments. Hanushek was more exacting in his framework, tying factors like funding levels, size of district, student retention efforts, career and college preparation programs, and limited English proficiency status to outcomes in education such as graduation rates and achievement.

This particular theory offers a reliable framework for evaluating the relationship between funding and student performance outcomes (Baker, 2012). School funding as a

topic of debate has been a contentious issue, particularly where funding is provided through local efforts and thereby taxpayer money. To guide this conversation, Baker offers that past research efforts have applied the education production function theory in such a way that effects of particular educational factors and student effort have been statistically compared to results. Methods of ascertaining this relationship are inclusive of the following: cost-function analysis as delineated by Berne (1996) and rate of return analysis as discussed by Betts (2001). In each of these methods, an effort is made to establish a mathematical association between the issues of expenses and knowledge outputs in a cost versus production style. To conclude, this particular theory offers a cogent framework for establishing the correlation between educational inputs like funding methods, student characteristics, and academic programs and their ultimate effect on student performance outcomes. The educational production function theory serves as the foundational basis of this study.

Conclusion

This chapter offered a thorough review of applicable literature relevant to the intent of this study, which was to evaluate the correlation between property tax revenue and transfer, licensure and completion of Texas community college students. Chapter III will offer the methodology of this research project and will include the operationalization of theoretical constructs, research purpose and questions, research design, population and sample selection, data collection procedures, data analysis techniques, privacy and ethical considerations, and research design limitations.

CHAPTER III:

METHODOLOGY

The purpose of this study was to examine the relationship between property tax revenue and transfer, licensure, and completion of community college students. This mixed method study collected archived data for a purposeful sample of community colleges in Texas and interview data from a purposeful sample of community college presidents. Quantitative data, collected from the Texas Higher Education Coordinating Board (THECB), were analyzed using Pearson's product moment correlations (r). Data obtained from the interviews were analyzed using an inductive coding process to look for themes that emerged from the interviewee's responses. This chapter presents the overview of the research problem, operationalization of theoretical constructs, research purpose and research questions, research design, population and sampling of participants, instrumentation, data collection procedures and analysis, validity, ethical considerations, and the limitations of the study.

Overview of the Research Problem

Community colleges are being asked to improve student performance even as state financial support is decreasing. Texas community colleges are mandated by law to generate revenue from local property taxes for the maintenance of campuses. This funding model sets the stage for inequity, since the 50 community colleges in Texas do not have the same property tax base from which to garner necessary funds. In addition, community colleges draw revenue for their campuses only from the tax district in which they reside; they gather no additional funding for their service districts which can include

branch campuses. In current research regarding community colleges, few studies have addressed the relationship between funding and student performance and how the state created and supports a formula that puts property poor college districts and their students at a financial disadvantage (Breneman & Nelson, 1981). Examining student performance measures will help determine how state funding impacts community colleges in Texas.

Operationalization of Theoretical Constructs

This study includes the following theoretical constructs: (a) property tax revenue, (b) transfer (c) licensure, and (d) completion. Property tax revenue is generated through the property taxes assessed to the community college taxing district (TEC, 1965). This construct was measured through the appraisal of local property tax value which is multiplied by the tax cap for a particular community college district. Transfers are defined as the number of students who transfer from a community college to a university and are determined by adding the transfers for a college district for the academic school year (THECB, 2018). Licensure is defined as the number of students who pass an exam in order to work in their industry. It is calculated by adding the total number of students who took a licensure exam at a community college for the academic school year (THECB, 2018). Completion is defined as the number of students who earned a degree or certificate and is determined by adding the total number of associates degrees and/or certificates earned at a community college for an academic school year (THECB, 2018).

Research Purpose and Questions

The purpose of the study was to examine the relationship between community college property tax revenue and transfer, licensure, and completion. The study addressed the following research questions:

R1: Is there a relationship between community college property tax revenue and transfer?

Ha: There is a relationship between community college property tax revenue and transfer.

R2: Is there a relationship between community college property tax revenue and licensure?

Ha: There is a relationship between community college property tax revenue and licensure.

R3: Is there a relationship between community college property tax revenue and completion?

Ha: There is a relationship between community college property tax revenue and completion.

R4: What are the perceptions of community college chancellors and presidents of the relationship between community college property tax revenue and student achievement on performance measures set by the Texas Legislative Budget Board?

Research Design

For this study, a sequential mixed methods design was used. The first phase of this study was quantitative, and the second phase was qualitative. Mixed methods studies allow for a more in-depth analysis of the quantitative data by following up with the use of qualitative methods. A purposeful sample of community college districts in Texas was

used. Archived data collected from this sample were for the 2018 academic year and included: (a) local property tax revenue, and the number of (b) transfers, (c) licensures, and (d) completions. The quantitative data were analyzed using Pearson's product moment correlations (r). For the qualitative analysis, the data from semi-structured interviews of community college chancellors and presidents were analyzed using a constant comparative coding process whereby relevant themes were extracted (Coffey & Anderson, 1996).

Population and Sample

The population in this study was all higher education institutions in Texas. There are 148 higher education institutions in Texas with a preliminary fall 2018 total enrollment of 1.5 million students (THECB, 2018). Of the total Texas higher education population, 35.5% of the students were White, 36.8% were Hispanic, 13.4% were African American, and 8.1% identified as other (THECB, 2018). For this study, the purposeful sample included all of the 50 community college districts in Texas. In fall 2018, the preliminary enrollment in the 50 colleges was 744,175, which was 46.4% of the total higher education enrollment in the state (THECB, 2018). At the community college level, 43.5% were White, 38.6% were Hispanic, 12.5% were African American, and 5.4% were other. Further, 26.6% of the students were identified as academically disadvantaged, and 35.7% were identified as economically disadvantaged.

Participant Selection

A purposeful sample of community college presidents were selected to be interviewed for the purpose of this study. Three presidents were from small community colleges, six were from medium colleges, one was from a large college, and six were from community college systems. College sizes are determined by enrollment numbers. College systems are located in major metropolitan locations in the state and serve

between 20,000 and 60,000 students. Large colleges serve between 9,000 and 20,000 students. Medium colleges serve between 6,000 and 9,000 students, and small colleges serve between 1,000 and 6,000 students (THECB, 2018). Thirteen of the interview participants were male, and three of the presidents were female. Fourteen of the participants were White, and four were Hispanic.

Data Collection Procedures

The researcher acquired approval from the University of Houston-Clear Lake's (UHCL) Committee for the Protection of Human Subjects (CPHS) before any data was collected for the purpose of this project. Once approval was granted, data were collected from the THECB and the Texas Association of Community Colleges. Data collected included community college local tax revenue, enrollment and demographic data, and number of transfers, licensures, and completions. Once collected, the data were uploaded into an SPSS database for analysis.

A purposeful sample of community college presidents from small, medium, large and college systems were solicited to participate in the qualitative portion of this study. The participants were asked to engage in a 20-30 minute semi-structured interview. The college presidents were originally contacted via email with a formal request to participate in the interview. Once consent was given, the interviews were scheduled, and the participants were formally apprised of the study details through a consent form. The form also included assurance that participation in the study was voluntary, that their identities would remain confidential, and that the participants would experience no undue harm while participating in the interview. Participants were also provided with the consent forms which included information on the interview process (see Appendix B).

The interview questions asked the participants to consider how community college funding affects student performance. Specifically, participants were asked what

they thought about the impact of property tax revenue on performance measures set forth by the Texas Legislative Budget Board which included the number of students who transfer to a university, the number of students who pass a licensure exam, and the number of students who complete a certificate or degree. Interview questions are listed in the Interview Guide that is included as Appendix C. All interview sessions were audio recorded. After the sessions, the interviews were transcribed. The interview transcripts were then emailed back to the presidents for the opportunity to review and/or clarify the data. The data collected was stored in three locations: on the researcher's external drive, on a cloud server, and on a memory drive. This confidential data will be stored for three years and then will be destroyed at the conclusion of the study.

Data Analysis

Quantitative

All data collected were uploaded to IBM SPSS for analysis. Data were collected from the THECB and TACC on property tax revenue, and the number of transfers, licensures, and completions for each community college district involved in the study for the 2018 academic year. Research Questions 1–3 were answered using Pearson's product moment correlations (r) to determine if there was a relationship between community college tax revenue and the number of transfers, licensures, and completions. All variables are continuous in measurement. Effect size was measured by calculating the coefficient of determination (r^2) to determine the proportion of variance in the dependent variable that could be attributed to the independent variable. A significance value of .05 was used to separate the most unlikely (or extreme) 5% of the sample means from the most likely 95% of the sample means (Gravetter & Wallnau, 2009).

Qualitative

After the quantitative data analysis, findings were used to create community college president interview questions in order to provide a clearer and more in-depth understanding of the possible relationship between property tax revenue and student transfer, licensure, and completion. The open-ended questions allowed for the emergence of deeper thoughts on the part of the community college chancellors and presidents regarding the topic. The interview data were analyzed using a constant comparative inductive coding process in order to create an understanding of the impact of property tax rates on student transfer, licensure, and completion. The data analysis included a process of data reduction, display, conclusions, and verifications (Berg, 2001). Data reduction allowed for data to be more accessible and coherent and allowed for the extraction of relevant themes and patterns. This process occurred through the transcription of the interview audio recordings, the organization of the data into recurring themes, and the translation of the data into written summaries. The coding process involved recognizing in-vivo codes. Once the codes were identified, effort was made to search for patterns and themes (Coffey & Atkinson, 1996) in order to put them into categories. After the establishment of categories, subcategories were created, and the findings recorded. The findings were then used to draw conclusions about the data.

Validity

Validity for the qualitative portion of the study was established through triangulation, member checking, and peer review. The data collected during the interviews was subjected to member checking by having college administrators review the transcripts in order to ensure the validity of the responses provided. The questions themselves were peer reviewed by experienced college administrators in order to ensure the questions were valid. The peer reviews were intended to solicit feedback regarding

the question type and structure. Member checking was used to ensure the voices of the participants was properly captured, increasing the validity of the findings.

Privacy and Ethical Considerations

The researcher gained permission from UHCL's CPHS prior to the collection of any data. A consent form and interview questions were provided to the interview participants, and the data collected was properly stored. In addition, the identities of the participants were kept confidential. For data reporting, pseudonyms were used to further protect participant identity. Participants were not exposed to undue risk at any time during the process. The researcher maintained neutrality during the interviews and avoided offering personal beliefs about the topic to the participants. The audio recordings were accurately transcribed in order to protect the validity of the data. Further, during the coding process, the researcher used the automatic coding capabilities of the NVivo software in order to secure objective themes and patterns.

Research Design Limitations

There were six limitations to this study. First, for the quantitative data, information entered into the state databases could be subject to human error, and these errors could compromise the study and the validity of its findings. Secondly, the researcher depended upon the honest feedback of the interview participants in order to effectively draw conclusions about the themes of the interviews. Third, if the interview subjects were not honest in their answers, the qualitative data would be skewed and therefore not valid. Fourth, the tendency towards political correctness versus the offering of candid answers by the interviewees could threaten the validity of the findings. Fifth, since all the community colleges are located in Texas, the findings of the study are not generalizable to other states. Sixth, the small sample size of interview participants makes it difficult to draw any generalizations about the interview data. Seventh, this

study was of one year's worth of data. To get a better picture of the relationship between funding and performance, a multi-year analysis should be done.

Conclusion

The purpose of this study was to determine if there was a relationship between Texas community college property tax revenue and selected student performance measures. This chapter in the study provided an overview of the problem, the operationalization of theoretical constructs, the research purpose, questions, hypothesis, and study design. In addition, the population and sample, the data collection procedures and the data analysis were included. Finally, the privacy and ethical considerations and the research design limitations were presented. This study involved a mixed methods approach in order to determine the impact of community college local property tax revenue on selected student performance measures. The quantitative data was analyzed using Pearson's product moment correlation (r), and the qualitative data in the form of interviews were coded used constant comparative coding analysis via NVivo software. This sequential mixed methods approach was utilized in order to provide more detailed data and a deeper look into the variables being analyzed. In Chapter IV, the interview data and property tax, transfer, licensure, and completion data will be discussed in further detail.

CHAPTER IV:

RESULTS

The purpose of the study was to examine the relationship between Texas community college property tax revenue and the number of transfers, licensures, and completions for 2018. Using self-reported institutional data from the Texas Higher Education Coordinating Board (THECB) and the Texas Association of Community Colleges (TACC), one year of Texas community college data (property tax revenue, transfers, licensures, and completions) were loaded into the SPSS database for analysis. This quantitative data was analyzed using Pearson's product moment correlation, and the qualitative data collected from college chancellor and president interviews were analyzed using an inductive coding process. This chapter offers a description of the community colleges studied and the findings of the four research questions.

Participant Demographics

Demographic information about the purposeful sample of fifty community colleges in Texas was collected from the Texas Higher Education Coordinating Board (THECB) and the Texas Association of Community Colleges (TACC). This data included information on the total population and subgroups including ethnicity and academically and economically disadvantaged populations. In fall 2018, the preliminary enrollment in the 50 colleges was 744,175, which was 46.4% of the total higher education enrollment in the state of Texas (THECB, 2018). At the community college level, 43.5% were White, 38.6% were Hispanic, 12.5% were African American, and 5.4% were other. Further, 26.6% of the students were identified as academically disadvantaged, and 35.7% were identified as economically disadvantaged.

Community colleges in Texas are categorized by their rural or non-rural status and further grouped by location relative to the Texas-Mexico border. For the purpose of

this study, non-rural colleges have taxing districts located within the 100 largest cities in the United States and within the 10 largest cities in Texas (U.S. Census 2010). All other colleges are considered rural. According to this criteria, 28 colleges in Texas are rural, and 22 colleges are non-rural.

Border colleges are those whose taxing districts are located within the 43-county Texas-Mexico border area plus Coastal Bend College which is not in one of the 43 counties but whose service district is within the counties that are on the Texas-Mexico border. According to this criteria, eight colleges are considered border colleges, and 42 institutions are considered non-border colleges. Table 4.1 provides specific demographic information for the colleges. In addition, colleges are organized by the THECB into ten separate regions (THECB, 2019). Table 4.2 provides detailed information regarding demographics by region. Demographic information about the interview participants is included in Table 4.3. Of the 16 interview participants, 13 were male and three were female. Twelve of the participants were White, and four were Hispanic. In addition, three of the participants were chancellors of community college systems, and 13 were presidents of community college campuses.

Table 4.1

Descriptive Statistics for Texas Community Colleges 2018

	Frequency (n)	Percentage (%)
1. Race/Ethnicity		
African American	86,177	12.5
Hispanic	214,412	38.6
White	295,211	43.5
Other	60,012	5.4
2. Academically Disadvantaged	197,950	56.0
3. Economically Disadvantaged	279,065	37.5
4. Rural	28	56.0
5. Non-Rural	22	44.0
6. Border	8	16.0
7. Non-Border	42	81.0
Total Enrollment	744,175	

Table 4.2

Descriptive Statistics for Texas Community Colleges by Region

Region	Transfer		Licensure		Completion	
	Frequency (n)	Percentage (%)	Frequency (n)	Percentage (%)	Frequency (n)	Percentage (%)
1	9,298	47.0	4,016	20.2	9,069	46.0
2	3,554	33.0	4,079	37.3	3,027	28.0
3	90,074	49.1	53,479	29.1	54,446	30.0
4	13,971	38.4	16,521	45.4	14,819	48.0
5	2,100	40.2	1,970	38.0	2,312	44.3
6	109,573	59.0	53,102	29.0	74,026	40.0
7	36,110	43.0	21,822	26.0	22,222	26.4
8	107,751	80.0	21,038	16.0	50,034	37.0
9	9,773	60.3	3,786	23.4	3,263	20.1
10	23,581	88.0	10,969	41.0	13,809	51.3

Table 4.3

Descriptive Statistics for Interview Participants 2018

	Frequency (n)	Percentage (%)
1. Race/Ethnicity		
African American	0	0
Hispanic	4	63.0
White	12	75.0
2. Gender		
Female	3	19.0
Male	13	81.3
3. Position		
Chancellor	3	19.0
President	13	81.3
Total	16	

Research Question One

Research question one, Is there a relationship between property tax revenue and student transfers?, was answered by conducting Pearson's product moment correlations (r) between property tax revenue and student transfers. Table 4.4 displays the

demographics of community college property tax revenue and student transfers. The average number of transfers for the 50 community colleges was 393.06, and the average property tax revenue was \$43,578,670.66.

Table 4.4

Descriptive Statistics for Transfer and Property Tax Revenue 2018

	N	Mean	Std. Deviation
1. Transfer	50	393.06	469.76
2. Property Tax Revenue	50	\$43,578,670.66	\$70,122,013.88

Regarding the relationship between student transfers and property tax revenue for all 50 community colleges, findings of the Pearson's r suggested that a statistically significant positive relationship existed between transfer and property tax revenue, $r(50) = .835, p < .001, r^2 = .697$. As the amount of property tax revenue increased, so did the number of transfers. The proportion of variation in transfers attributed to property tax revenue was 69.7%. Regarding the relationship between transfers and property tax revenue at rural community colleges, findings of the Pearson's r suggested that a statistically significant positive relationship existed between transfers and property tax revenue, $r(32) = .768, p < .030, r^2 = .168$. As the amount of property tax revenue increased, so did the number of transfers at rural community colleges in Texas. The proportion of variation in transfers attributed to property tax revenue was 16.8%. For the relationship between transfers and property tax revenue at non-rural colleges, findings of the Pearson's r suggested that a statistically significant positive relationship existed

between transfer and property tax revenue, $r(22) = .857, p < .001, r^2 = .734$. As the amount of property tax revenue increased, so did the number of transfers at non-rural colleges in Texas. The proportion of variation in transfers at non-rural colleges attributed to property tax revenue was 73.4%.

For the relationship between transfers and property tax revenue at border colleges, findings of the Pearson's r suggested that a statistically significant positive relationship existed between transfers and property tax revenue, $r(8) = .867, p = .005, r^2 = .752$. As the amount of property tax revenue increased, so did the number of transfers at border community colleges in Texas. The proportion of variation in transfer rates at border community colleges attributed to property tax revenue was 75.2%. Regarding the relationship between transfers and property tax revenue at non-border colleges, findings of the Pearson's r suggested that a statistically significant positive relationship existed between transfers and property tax revenue at non-border colleges in Texas, $r(42) = .836, p < .001, r^2 = .700$. As the amount of property tax revenue increased, so did the number of transfers at non-border colleges in Texas. The proportion of variation in transfers at non-border colleges attributed to property tax revenue was 70.0%.

Regarding the relationship between transfers and property tax revenue in Region 1, the results of the Pearson's r did not support a relationship between transfers and property tax revenue for colleges in the High Plains region of Texas, $r(4) = .628, p = .372$. For the relationship between transfers and property tax revenue in Region 2, the results of the Pearson's r did not support a relationship between transfers and property tax revenue for colleges in the Northwest region of Texas, $r(4) = .808, p = .192$.

Regarding the relationship between transfers and property tax revenue in Region 3, findings of the Pearson's r suggested that a statistically significant positive relationship existed between transfers and property tax revenue in the Metroplex area of Texas, $r(7) =$

.856, $p = .014$ $r^2 = .733$. As the amount of property tax revenue increased, so did the number of transfers at community colleges in Region 3. The proportion of variation in transfer rates at colleges in Region 3 attributed to property tax revenue was 73.3%. For the relationship between transfers and property tax revenue in Region 4, findings of the Pearson's r did not support a relationship between transfers and property tax revenue for community colleges in the Upper East region of Texas, $r(7) = .707$, $p = .075$.

Regarding the relationship between transfers and property tax revenue in Region 6, findings of the Pearson's r suggested that a statistically significant positive relationship existed between transfers and property tax revenue at community colleges in the Gulf Coast region of Texas, $r(9) = .982$, $p < .001$ $r^2 = .964$. As the amount of property tax revenue increased, so did the number of transfers at community colleges in Region 6. The proportion of variation in transfer rates at community colleges in Region 6 attributed to property tax revenue was 96.4%.

For the relationship between transfers and property tax revenue in Region 7, findings of the Pearson's r did not support a relationship between transfers and property tax revenue at community colleges in the Central Texas region of Texas, $r(6) = .341$, $p = .508$. Regarding the relationship between transfers and property tax revenue in Region 8, findings of the Pearson's r suggested that a statistically significant relationship positive relationship existed between transfers and property tax revenue at community colleges in the South Texas area, $r(8) = .933$, $p = .001$, $r^2 = .870$. As the amount of property tax revenue increased, so did the number of transfers at community colleges in the Region 8 of Texas. The proportion of variation in transfers at community colleges in Region 8 attributed to property tax revenue was 87.0%. For the relationship between transfers and property tax revenue in Region 9, findings of the Pearson's r did not support a relationship between transfers and property tax revenue and community colleges in the

West Texas area of the state, $r(3) = .498, p = .668$. Table 4.5 displays the relationship between student transfers and property tax revenue for all 50 colleges, rural and non-rural colleges, border and non-border colleges, and all 10 community college regions in Texas.

Table 4.5

Correlations: Student Transfer and Property Tax Revenue

Variable	N	<i>r</i> -value	<i>p</i> -value	<i>r</i> ²
All Transfers	50	.835	<.001	.697
Rural	28	.411	<.030	.168
Non-Rural	22	.857	<.001	.734
Border	8	.867	.005	.752
Non-Border	42	.836	<.001	.700
Region 1	4	.628	.372	-----
Region 2	4	.808	.192	-----
Region 3	7	.856	.014	.733
Region 4	7	.707	.075	-----
Region 5	1	*	*	*
Region 6	9	.982	<.001	.964
Region 7	6	.341	.508	-----
Region 8	8	.933	.001	.870
Region 9	3	.498	.668	-----
Region 10	1	*	*	*

Note: * Statistically significant ($p < .05$)

*Findings are inconclusive for these regions because they consist of only one college.

Research Question Two

Research question two, Is there a relationship between property tax revenue and student licensure?, was answered by conducting Pearson's product moment correlations (*r*) between property tax revenue and student licensure. Table 4.5 displays the demographics of college property tax revenue and student licensures. The average number of licensures was 397.72, and the average property tax revenue was \$43,578,670.66.

Table 4.6

Descriptive Statistics for Licensures and Property Tax Revenue

	N	Mean	Std. Deviation
1. Licensure	50	397.72	328.369
2. Property Tax Revenue	50	\$43,578,670.66	\$70,122,013.88

Regarding the relationship between licensure and property tax revenue for all 50 community colleges in Texas, findings of the Pearson's r suggested that a statistically significant positive relationship existed between licensure and property tax revenue at the 50 community colleges in Texas, $r(50) = .838, p < .001, r^2 = .702$. As the amount of property tax revenue increased, so did the number of licenses. The proportion of variation in licensure attributed to property tax revenue was 70.2%.

Regarding the relationship between licensure and property tax revenue at rural community colleges in Texas, findings of the Pearson's r suggested that a statistically significant positive relationship existed between the number of licensures and property tax revenue at rural community colleges, $r(28) = .850, p < .001, r^2 = .723$. As the amount of property tax revenue increased at rural community colleges in Texas, so did the number of licensures. The proportion of variation in licensure at rural community colleges attributed to property tax revenue was 72.3%.

Regarding the relationship between licensure and property tax revenue at non-rural community colleges in Texas, findings of the Pearson's r suggested that a statistically significant positive relationship existed between licensure and property tax

revenue, $r(22) = .851, p < .001, r^2 = .724$. As the amount of property tax revenue increased at community colleges in Texas, so did the number of licensures at non-rural community colleges. The proportion of variation in licensures at non-rural colleges attributed to property tax revenue was 72.4%.

For the relationship between licensure and property tax revenue at border community colleges, findings of the Pearson's r suggested that a statistically significant positive relationship existed between licensure and property tax revenue, $r(8) = .802, p = .017, r^2 = .643$. As the amount of property tax revenue increased, so did the number of licensures at border community colleges. The proportion of variation in licensures at border community colleges attributed to property tax revenue was 64.3%. Regarding the relationship between licensure and property tax revenue at non-border community colleges, findings of the Pearson's r suggested that a statistically significant positive relationship existed between licensure and property tax revenue, $r(42) = .853, p < .001, r^2 = .728$. As the amount of property tax revenue increased, so did the number of licensures at non-border community colleges in Texas. The proportion of variation in licensures at non-border community colleges attributed to property tax revenue was 72.8%.

Regarding the relationship between licensure and property tax revenue in Region 1, the results of the Pearson's r did not support a relationship between the number of licenses and property tax revenue for community colleges in the High Plains region of Texas, $r(4) = .879, p = .121$. For the relationship between licensure and property tax revenue in Region 2, the results of the Pearson's r did not support a relationship between the number of licenses and property tax revenue for community colleges in the Northwest region of Texas, $r(4) = .732, p = .268$.

Regarding the relationship between licensure and property tax revenue in Region 3, findings of the Pearson's r suggested that a statistically significant positive relationship

existed between licensure and property tax revenue in the Metroplex area of Texas, $r(7) = .981, p < .001, r^2 = .962$. As the amount of property tax revenue increased, so did the number of licensures at community colleges in Region 3. The proportion of variation in licensure rates at community colleges in Region 3 attributed to property tax revenue was 96.2%.

For the relationship between licensure and property tax revenue in Region 4, the results of the Pearson's r did not support a relationship between the number of licenses and property tax revenue for community colleges in the Upper East region of Texas, $r(4) = .401, p = .373$. Regarding the relationship between licensure and property tax revenue in Region 6, findings of the Pearson's r suggested that a statistically significant positive relationship existed between licensure and property tax revenue in the Gulf Coast area of Texas, $r(9) = .863, p = .003, r^2 = .745$. As the amount of property tax revenue increased, so did the number of licensures at community colleges in Region 6. The proportion of variation in licensures at community colleges in Region 3 attributed to property tax revenue was 75.0%.

Regarding the relationship between licensure and property tax revenue in Region 7, findings of the Pearson's r suggested that a statistically significant positive relationship existed between licensure and property tax revenue in the Central Texas area of Texas, $r(6) = .854, p = .030, r^2 = .729$. As the amount of property tax revenue increased, so did the number of licensures at community colleges in Region 7. The proportion of variation in licensures at community colleges in Region 7 attributed to property tax revenue was 72.9%.

Regarding the relationship between licensure and property tax revenue in Region 8, findings of the Pearson's r suggested that a statistically significant positive relationship existed between licensure and property tax revenue in the South Texas area of Texas, $r(8)$

$= .889, p = .003, r^2 = .790$. As the amount of property tax revenue increased, so did the number of licensures at community colleges in Region 8. The proportion of variation in licensures at community colleges in Region 7 attributed to property tax revenue was 79.0%.

For the relationship between licensure and property tax revenue in Region 9, the results of the Pearson's r did not support a relationship between the number of licenses and property tax revenue for community colleges in the West Texas region of Texas, $r(3) = .101, p = .936$. Table 4.7 displays the relationship between student licensure and property tax revenue for all 50 community colleges, rural and non-rural community colleges, border and non-border community colleges, and all 10 community college regions in Texas.

Table 4.7

Correlations: Student Licensure and Property Tax Revenue

Variable	N	<i>r</i> -value	<i>p</i> -value	<i>r</i> ²
All Licensures	50	.838	<.001	.702
Rural	28	.850	<.001	.723
Non-Rural	22	.851	<.001	.724
Border	8	.802	.017	.643
Non-Border	42	.853	<.001	.728
Region 1	4	.879	.121	-----
Region 2	4	.732	.268	-----
Region 3	7	.981	<.001	.962
Region 4	7	.401	.373	-----
Region 5	1	*	*	*
Region 6	9	.863	.003	.750
Region 7	6	.854	.030	.729
Region 8	8	.889	.003	.790
Region 9	3	.101	.936	-----
Region 10	1	*	*	*

Note: * Statistically significant ($p < .05$)

*Findings are inconclusive for these regions because they consist of only one college.

Research Question Three

Research question three, Is there a relationship between property tax revenue and student completion?, was answered by conducting Pearson's product moment correlations (r) between property tax revenue and student completion. Table 4.8 displays the demographics of Texas community college property tax revenue and student completion of certificates and degrees. The average number of completions of

certificates and degrees in 2018 for the 50 community colleges in Texas was 2,375.42 and the average property tax revenue was \$43,578,670.66.

Table 4.8

Descriptive Statistics for Performance Measures and Property Tax Revenue

	N	Mean	Std. Deviation
1. Completion	50	2,375.42	2,933.84
2. Property Tax Revenue	50	\$43,578,670.66	\$70,122,013.88

Findings of Pearson's r suggested that a statistically significant positive relationship existed between numbers of completion and property tax revenue, $r(50) = .914, p < .001, r^2 = .835$. As the amount of property tax revenue increased, so did the number of completions at Texas community colleges. The proportion of variation in completion rates at Texas community colleges attributed to property tax revenue was 83.5%.

Regarding the relationship between student completions and property tax revenue at rural community colleges, findings of the Pearson's r suggested that a statistically significant positive relationship existed between completion of certificates and degrees and property tax revenue, $r(28) = .718, p < .001, r^2 = .516$. As the amount of property tax revenue increased, so did the number of completions at rural community colleges. The proportion of variation in completion rates attributed to property tax revenue was 51.6%. For the relationship between student completions and property tax revenue at non-rural

community colleges, findings of the Pearson's r suggested that a statistically significant positive relationship existed between number of completions and property tax revenue, $r(22) = .906, p < .001, r^2 = .821$. As the amount of property tax revenue increased, so did the number of completions at non-rural community colleges. The proportion of variation in completion attributed to property tax revenue was 82.1%.

Regarding the relationship between student completions and property tax revenue at border community colleges, findings of the Pearson's r suggested that a statistically significant positive relationship existed between the number of completions and property tax revenue, $r(8) = .949, p < .001, r^2 = .910$. As the amount of property tax revenue increased, so did the number of completions at border community colleges. The proportion of variation in completion at border colleges attributed to property tax revenue was 91.0%. For the relationship between student completions and property tax revenue at non-border community colleges, findings of the Pearson's r suggested that a statistically significant positive relationship existed between the number of completions at non-border colleges and property tax revenue, $r(42) = .929, p < .001, r^2 = .863$. As the amount of property tax revenue increased, so did the number of completions at non-border community colleges. The proportion of variation in completion at non-border colleges attributed to property tax revenue was 86.3%.

Regarding the relationship between completion and property tax revenue in Region 1, results of the Pearson's r did not support a relationship between completions and property tax revenue for colleges in the High Plains region of Texas, $r(4) = .943, p = .057$. For the relationship between completion and property tax revenue for colleges in Region 2, findings of the Pearson's r suggested that a statistically significant positive relationship existed between the number of completions and property tax revenue for colleges in the Northwest region of Texas, $r(4) = .971, p = .029, r^2 = .943$. As the

amount of property tax revenue increased, so did the number of completions at community colleges in Region 2. The proportion of variation in completion at community colleges in Region 2 attributed to property tax revenue was 94.3%.

Regarding the relationship between completion and property tax revenue for colleges in Region 3, findings of the Pearson's r suggested that a statistically significant positive relationship existed between the number of completions and property tax revenue at community colleges in the Metroplex region of Texas, $r(7) = .985, p < .001, r^2 = .970$. As the amount of property tax revenue increased, so did the number of completions at community colleges in Region 3. The proportion of variation in completion at community colleges in Region 3 attributed to property tax revenue was 97.0%.

For the relationship between completion and property tax revenue in Region 4, findings of the Pearson's r suggested that a statistically significant positive relationship existed between the number of completions and property tax revenue in the Upper East region of Texas, $r(7) = .821, p = .023, r^2 = .674$. As the amount of property tax revenue increased, so did the number of completions at community colleges in Region 4. The proportion of variation in completions at community colleges in Region 4 attributed to property tax revenue was 67.4%.

Regarding the relationship between completion and property tax revenue in Region 6, findings of the Pearson's r suggested that a statistically significant positive relationship existed between the number of completions and property tax revenue in the Gulf Coast region of Texas, $r(9) = .926, p < .001, r^2 = .857$. As the amount of property tax revenue increased, so did the number of completions at community colleges in Region 6. The proportion of variation in completion at community colleges in Region 6 attributed to property tax revenue was 85.7%. For the relationship between completion

and property tax revenue in Region 7, findings of the Pearson's r suggested that a statistically significant positive relationship existed between the number of completions and property tax revenue in the Central Texas region of Texas, $r(6) = .818$, $p = .047$, $r^2 = .669$. As the amount of property tax revenue increased, so did the number of completions at community colleges in Region 7. The proportion of variation in completion attributed to property tax revenue was 66.9%.

Regarding the relationship between completion and property tax revenue in Region 8, findings of the Pearson's r suggested that a statistically significant positive relationship existed between the number of completions and property tax revenue in the South Texas region of the state, $r(8) = .954$, $p = .001$, $r^2 = .910$. As the amount of property tax revenue increased, so did the number of completions at community colleges in Region 8. The proportion of variation in completion at community colleges in Region 8 attributed to property tax revenue was 91.0%.

For the relationship between completion and property tax revenue in Region 9, findings of the Pearson's r did not support a relationship between completion and property tax revenue at community colleges in the West Texas region of the state, $r(3) = .743$, $p = .467$. Table 4.9 displays the relationship between student completion and property tax revenue for all 50 community colleges, rural and non-rural community colleges, border and non-border community colleges, and all 10 community college regions in Texas.

Table 4.9

Correlations: Student Completions and Property Tax Revenue

Variable	N	<i>r</i> -value	<i>p</i> -value	<i>r</i> ²
All Completions	50	.914	<.001	.835
Rural	28	.718	<.001	.516
Non-Rural	22	.906	<.001	.821
Border	8	.949	<.001	.910
Non-Border	42	.929	<.001	.863
Region 1	4	.943	.057	-----
Region 2	4	.971	.029	.943
Region 3	7	.985	<.001	.970
Region 4	7	.821	.023	.674
Region 5	1	*	*	*
Region 6	9	.926	<.001	.857
Region 7	6	.818	.047	.669
Region 8	8	.954	<.001	.910
Region 9	3	.743	.467	-----
Region 10	1	*	*	*

Note: * Statistically significant ($p < .05$)

*Findings are inconclusive for these regions because they consist of only one college.

Research Question Four

Research question four, *What are the perceptions of community college presidents concerning the relationship between community college property tax revenue and selected student performance measures?*, was answered using a qualitative inductive coding process. To achieve a deeper level of understanding about the impact of property tax revenue on student performance measures, sixteen community college chancellors and presidents were interviewed. (3 small, 6 medium, 1 large, 6 college system). Fifteen

of the interviews were conducted in a face-to-face setting at the chancellors' and presidents' offices, and one interview was conducted via telephone. An inductive coding process revealed four themes related to property tax revenue and its effect on student outcome measures: (a) student transfer issues, (b) student licensure issues, (c) student completion issues, and (d) property tax revenue issues. Three subcategories under property tax revenue issues were (1) state disinvestment and (2) tuition and fees, and (3) equity concerns. The emergent themes and related chancellor/president comments are included in the subsequent section.

Student Transfer

The issue of community college student transfer to universities was a prevalent theme in the semi-structured interviews of the 16 Texas community college chancellors and presidents. Of the interview participants, 63.5% felt there was a relationship between property tax revenue and student transfers while 25% of participants did not believe there was a relationship between property tax revenue and student transfers.

A chancellor from a rural, non-border, large college addressed the issue of how property tax revenue impacts student transfers to universities. He offered that, specifically, student advising is made possible through the use of property tax revenue, "What happens is it's so important to provide decent advisement and make sure students plan and that credits transfer, and you don't have excess credits or lose financial aid. And just with the revenue we have, we aren't able to do that justice." The chancellor also described in more stark terms what happens when state disinvestment forces colleges to use property tax revenue in ways it was not intended to be used:

You know, it's Sophie's Choice – which kids do you feel and which do you starve? And you're making decisions every day to stay in business, and they're not the best decisions for the students. I'm sure advising – even all those things

with success points – if you don’t have the revenue, you’re choosing between two – do I buy the equipment I need or do I repair the infrastructure?

This chancellor’s first observation was that more property tax revenue would allow a college to hire more advisors and that these advisors would help to aid in successful transfer. In addition, he referenced the idea that there was not enough funding to cover all needs.

A president from a rural, non-border, small college also connected property tax revenue to the issue of transferability through his commentary on advisement services:

The available property tax revenue is what’s gonna give you additional funding for student services, for student success coaches, for more in-depth, one-on-one contact with students through student success programs. The money is either gonna come from grants or local property taxes because you’re trying to keep your tuition and fees low. The state’s trying to give you what they give you, and they can say what they want, but it doesn’t cover costs much. And so the more property tax revenue you have, the more you should be able to invest in student success resources which I believe increases your transfer.

One president from a rural, non-border, medium college concurred with the idea that property tax revenue helps to provide advising services that impact transfer. “Yes, in general, the more money you get period and the better job you can do . . . you could staff better and you can afford to perhaps target your money toward advisors who will help your students to transfer, open up those doorways. I never really thought about it in particular – if I had more tax dollars I would be able to have a higher transfer rate. It makes sense – it’s logical.”

A president from a rural, border medium college felt there was an indirect relationship between property tax revenue and student transfers to universities, “. . . it

doesn't directly because it takes money . . . I have to take out of the tuition money to supplement facilities, which is money that could go towards, you know support services for some transfer students.”

Five of the interview participants or 31.2% believed that property tax revenue helped keep community colleges more affordable for students, something they felt affected transfer, while three of those five or 60% believed that urban, large colleges specifically were able to create that affordability for students due to higher property tax revenues. A chancellor from an urban, non-border college system linked property tax revenue to student transfer by stating, “I think the property tax revenue is such an integral part of the community college revenue model that if we didn’t have that, our prices would have to be so much higher, which could impact students and their transferability.”

Similar thoughts were voiced by a president from a rural, non-border, medium college who offered that, “My guess is if you have a healthier tax base and . . . are able to raise taxes when you need, I would assume you would have a student who would have a higher chance of transferring.” When asked to elaborate on this idea, the president added, “. . . additional revenue creates a more supportive initial environment for the student. So if some of that pressure is coming off (them) in terms of finances . . . maybe you’ve got a better chance to focus and stick in and stay in there and actually make it to transfer – closing a gap, right?”

A president of a rural, non-border, medium college echoed the previous leader’s thoughts, offering, “I think that the mid-size schools and the rural schools where the ad valorem tax is not as you know, we don't generate as much money as the larger ones, we are more focused on the career and technical side of the house, right? And so I would suspect those that are doing more transfer to the university you have those large ad valorem tax bases.” Leaders of two of the larger community colleges discussed the idea

that urban, large campuses affect transfer because their high property tax revenue makes college more affordable for students.

One president from an urban, border college system discussed the ability of larger, urban institutions to affect positive transfer of students and indicated that this was influenced by changes after the Great Recession of 2008. This president stated that prior to the Great Recession, 75% to 80% of students went to school within a 150-mile radius of their homes. This trend lessened dramatically to a 50-mile radius after the Great Recession, something this president felt negatively impacted the small, rural colleges but did not dramatically affect the large urban campuses:

It's gotten to be more concentrated. So what you'll see is again the larger urban areas - they're not only going to have more community college campuses, but they're going to have more universities there in that 50-mile radius that are local. The transferring is going to be, again, if you have significant revenue of property taxes . . . you're going to be seeing more opportunities for students in the urban areas, but it's much more difficult in the rural areas.

A chancellor from an urban, non-border college system described the relationship between property tax revenue with a narrative about using this local funding source to “own the transitions” from high school to college and from college to university or industry. He stated, “It’s not that (students) weren’t capable of going, it’s just that they didn’t see a pathway forward to go, and so because no one owns transitions, we leave them to a very difficult part - that’s moving from one entity to another. And we need to be using our resources to make that happen.” This chancellor admitted that in his service district, property tax revenue allowed him to fund initiatives that impacted issues like transferability. He also addressed the idea that colleges with lower property tax revenue were not able to move college metrics in the same way.

On the issue of property tax revenue affecting transfer, four community college presidents or 25% of the participants had different views than those previously discussed. One president from an urban, non-border, small college felt that there was not a strong correlation between property tax revenue and student transfer, stating,

That's not that's not the way we look at it. And it's because it's you know property tax value and revenue allows us to do some things that - like keep tuition and fees low so that we don't put an extra burden on the student. But is it directly tied to student success or transfer? No, no. Now you can you can argue that . . . we're able to enhance that, but I mean, I spent a lot of years working where we didn't have property tax values, and we made it work. We had great student success ratios and successful transfers, and if you look at Medium College today - low property tax values and but high student success rates, high transfer rates, if you look at how they rank from when I was there even to today, they are always in the top two, three, four, five colleges in the state in terms of student success. And so the dollars in and of themselves in terms of property tax revenue are not necessarily the answer. Now, it's important, don't misunderstand me. It's important. But the absolute correlation is not there.

The president of a rural, non-border, medium college also believed there was no correlation between property tax revenue and student transfer at her particular campus because her campus was “unique” in that it housed a university center in partnership with two local universities. This university center provides advising and transfer assistance to the community college students. When asked if her community college campus offered transfer services, she replied, “We have a lot. We’re different from most of the other colleges because we have our university center here on campus.” This president also felt that articulation agreements between her college and local universities had more to bear

on successful transfer than property tax revenue. “We are just all together on it,” she stated.

The president of a large, urban campus in a college system felt that his transfer numbers were completely unrelated to property tax revenue because “we’re living in an affluent area in one of the most educated counties. I don’t think it’s a big influencer in terms of who transfers from us. Not a lot of first gen students in this area.”

A president from a rural, non-border medium college felt that property tax revenue had no significant affect on student transfer stating, “There’s probably not as big of an impact. Typically, students come in with a goal – many come thinking they’re going to transfer after they complete a year although we’re starting to see a transition to where they’re staying. I don’t see that it has a big impact.” The subsequent issue of licensing had similar results from the interview participants.

Student Licensure

Student licensure was a second major theme in the semi-structured interviews. Though there was not a consensus among the interview participants that property tax revenue directly influences the number of student licenses achieved, 50% of the participants offered that property tax revenue helps provide technical instructors for licensure programs, assists in offering test reviews for state exams, or keeps licensing programs in existence at their institutions. The absence of property tax revenue influencing the closure of licensing programs was another issue discussed.

On the issue of whether property tax revenue influenced the number of licenses achieved, a president from a rural, non-border small college stated, “I think it does in the same way (as transfer). It gives you the ability to provide more specific test reviews, tutoring, maybe even offsetting some of the licensure costs for certain populations of students and therefore, it should help you increase your licensure rate.” Similarly, a

president of a rural, non-border, small college discussed the influence of property tax revenue on licensure exam preparation for students, “I expect the licensing exam is - I think there's a strong correlation because many students couldn't take the courses to prepare for the licensing exam.” Community college leaders also discussed how property tax revenue was used to support their licensure programs.

One interview participant gave a specific example of how property tax revenue directly affected one of her licensure programs. A president from a rural, non-border, medium college stated, “We count on that revenue and we use it. Like last year, we got more revenue than what we were even expecting. We got more money. So guess what? We could buy that piece of sonography equipment that we had put on hold because it cost \$75,000.” The affordability of technical facilities and personnel was also affected by property tax revenue.

The president of a rural, non-border, medium college said, “I was just thinking in terms of if you want that surgical tech program. You have to have the facility and the equipment and supplies . . . we are increasing the number of nursing students we are admitting. We are adding an evening cohort for those working full-time jobs and . . . using a full-time faculty member from Local University, and she’s going to teach adjunct for us and teach that evening cohort

A president from a rural, non-border medium college also related property tax revenue to personnel and felt that the reason for the correlation between property tax revenue and licensure had to do with the quality of instructors hired:

We saw the programs that we have that lead to a state license are in the health careers field and affording nursing is a huge challenge . . . we implemented a market stipend to try and be more competitive with compensation. So our nursing, if you put the highest-paid individual at the college district to the lowest in a list,

after you get past maybe the fourth or fifth name the next 10 would be nursing instructors. We've worked hard to get them at a level we're good with because what happened is we turned into a training ground . . . they worked for us for two or three years and then they go take a job at Local University . . . so what the property taxes allow us to do is that is that piece - we can we don't have to charge so much tuition but still be able to pay that premium for those. And the quality of your instructors I think is what leads to being able to pass licensure exams.

The president of an urban, non-border college system also felt there was a correlation between property tax revenue and the number of licenses achieved because of the expense of technical programs, "I think that is highly correlated because a lot of our licenses are tied to work force . . . remember those are probably jobs within the high-wage, high-demand fields. So those are I think highly correlated and so you have to have the money to train them."

The president from an urban, non-border small college felt there was a relationship between property tax revenue and licensure but also believed that fiscal responsibility also played a role:

There are certain services you cannot provide, certain programs you cannot provide unless you got revenue sources to do it, right? I mean, that's the ultimate answer. For example, nursing programs are very expensive to operate and so the more nurses you have the more money it costs you so, you know the question becomes how big is your nursing program going to be? What resources can you allocate to it? Because you know, it's going to cost you money. And so you just have to make those decisions based on the revenues available. So I ultimately it does in a way drive how many students complete a particular program, how man

students transfer, go to work. But because if you can't put the programs you can place then you don't have the resources to do that.

A president from an urban, non-border college system was reluctant to say that there was a direct correlation between property tax revenue but did discuss the general effect of having an absence of property tax revenue, "So if you ask your question in terms of a global sense, if I were to lose 20 plus million dollars a year that this college generates, would I be concerned? Yeah . . . the reality is if the property tax revenue wasn't here . . . we would have some major problems in terms of trying to figure out how to make things work. So . . . would it would affect the number of licensures? It depends."

A president from a rural, non-border, medium college did not see a correlation between property tax revenue and licensure and stated, "I don't really see any correlation at all. We just do what we do and we put all the resources we can . . . we're trying to do our very best and we come together, our teammates in here every week. And we do some retreats to try to break down the silos and work together on projects. But it's just one bucket of money, and then you just try to do the most that you can with it." This thought was repeated by two more interview participants.

A president from an urban, border college system also felt there was no correlation between property tax revenue and student licensing numbers:

I will say that what I've seen is that I don't necessarily see a direct relationship between the tax base and licensure because we're all held to a standard. If our students aren't passing those licensure programs that we have - those programs are closed and so I see a concerted effort from all the community colleges in the state that have these programs, in particular nursing rad tech, physical therapy assistant and so on that have licensures. There is a concerted effort . . . the

smaller ones actually put more revenues into those programs because if they don't have those programs, they can't serve that community.

One chancellor from an urban, non-border college said she did not see a correlation between property tax revenue and student licensing numbers but did share that licensing programs did cost more than other programs, “Probably not, I mean licensing is normally your nursing programs and your health science and cosmetology. I guess on the nursing, it’s a more expensive program.” Of the three performance measures that arose as themes in the semi-structured interviews, the last one, student completion, seemed to generate the most affirmative responses in terms of its relationship to property tax revenue.

Student Completion

The third theme discussed was the relationship between property tax revenue and its influence on community college student completion. Interview participants discussed the relationship between property tax revenue and student completion as a direct or indirect one (94.0%). One president from a rural, non-border medium college believed the relationship had to do with the services that property tax revenue helped leaders provide:

It’s the same, more revenue in general that can be used to support activities in the college that would promote completion. Like for instance a few years back, we were able to direct some funds to a retention specialist retention core. Great to help keep our keep our kids in school so that they will complete. It was a foreign concept to my board except for one of my board members: ‘What are they really going to do and are they really going to make a difference?’ We were able to convince them to let us hire the position then we had show them the results of this

person, and it did make a difference. I mean she's able to do a lot of targeted activities including putting an early alert system in place.

A chancellor from a rural, non-border large college related completion to the ability to provide helpful student services, “. . . the completion rates we've seen elsewhere in all are very dependent on those extra services because these are students who are not part of a college-going culture or history and finding their way through that whole maze. It really requires somebody to do some hand holding.” The president of a rural, non-border small college also spoke of the services that property tax revenue helps to provide:

I'm very keenly aware of property revenue because we are the (one of the) smallest, and we are trying to accomplish the same things as everybody else. And so we have this - we are trying to provide the same functions and services that other schools are trying to provide yet our all of our state dollars are fairly divided out the same we have very great tuitions and fee but we are trying to keep those low. So the property tax is where you have some leeway to fund some things to help improvements in student success and another things, too. How we do it, is we have to be willing on occasion to put our money where our mouth is. When you look at positions needed and you look at services needed, they are all important: fiscal services, physical services, HR services, faculty, computers, technology - all that's important but the product we are trying to get is retained, completed, or transferred. So to answer your questions, the more available property revenue should give you more available money to fund student success programs and resources and services.

The president of a rural, non-border, medium college also discussed student programs and resources made available through property tax revenue. In his case, he

researched other community college campuses in the United States that had the same demographics in order to help more of his students graduate from college:

I'd looked at our graduation rate, and I compared it with 88 other institutions across the United States that are comparable in size, type of geography, type of population that we are serving. And our graduation rate is not high enough compared to that cohort. So when we start to look at what are they doing that we're not doing, some of these things we started to implement. But all of that is unfunded. The state reimbursement for contact hours doesn't address any of that. And so you have the core and the state funding, and then you have your ad valorem that that's what you that's the money you have to play with.

The president at an urban, non-border college system also discussed an impactful initiative he was able to put in place because of his property tax revenue. This initiative directly influenced the number of student completions. Out of concern for students who had excessive college hours and no certificate or degree, his campus went back five years to research these students. Students who were close to completion were offered scholarships so they could return to complete the limited number of courses that remained in a degree plan.

I think it does at College System for sure because of the fact that we've been here so long and we have so many students walking our communities who have a credential that don't know it or that are semester away from obtaining a degree or certificate that don't know . . . if we had more money, we could we could take it wider. We only went back five years and we hit thousands. This was an initiative. This was through the Coordinating Board. We got the permission to say how far can we go back? We said five years. We took every single student that had 45 or more hours and began to work and look at where there were people

that had the degrees who were short couple of classes. Actually, there were about 300 students that were just needing a speech class. So, we offered them a scholarship to come back and get their speech class. We can get them graduated.

A chancellor from an urban, non-border college system discussed completion in terms of how property tax revenue helps keep tuition and fees low, which she believes impacts first generation students and other subgroups, “without that tax revenue helping to supplement the budget the way we can and you look at our changing demographics. And you look at again a first-generation to college. Could they really if we had to put all that charge of the tuition and into tuition and fees? Could people pay?” The president of a rural, non-border medium college voiced the same opinion, relating the use of property tax revenue for relieving financial burdens from students, “So I don't see the relationship any differently. I think that it's all tied to whatever stress you've relieved or create within the life of the students - 75% of our students work, 75% of our students are part-time . . .”

On the discussion of student barriers removed by property tax revenue and the overall scope of the community college mission, the chancellor of an urban, non-border college system commented on how property tax revenue helped him solve three problems at his campuses. In a narrative based on specific students with whom he had personally interacted, he explained how integral property tax revenue was in providing services that allowed students to achieve their goals.

Issues like capping the property tax and others - it won't immediately cause the collapse of the College System Student Support Program here at College System. It will probably last five years or till the next economic downturn when we needed to do something there but couldn't make that happen. But it is the absolute backbone of how we can change the behavior of students coming out of high school going to college.

The chancellor addressed student needs like less expensive textbooks, assistance with paying for the meningitis shot required of all college students in Texas, and transportation issues. “We don't get any revenue specifically to pay for that. It's because we can remove a barrier because - again, we do have the revenue to solve that problem.” One campus president of an urban, border college system framed the impact of property tax revenue’s impact on student completion from a completion agenda perspective. He felt the campuses that had higher property tax revenue were able to provide more services, which impacted student completion. However, he felt that nationwide community college completion agendas from organizations like Achieving the Dream and Pathways were the impetus for creating the momentum around college completion.

I think that those movements had much more of an influence than our tax revenue. Now, what we've done is we've reallocated those resources and it's fortunate these larger institutions that have such a significant amount of the revenue that comes in from taxes are able to be much more focused on these particular areas. And so when you talk to President in College System, I know he has increased the number of advisors. I think he hired in the neighborhood of a hundred-plus advisors over the last few years to focus on this area. Those are only possible because of that additional revenue that you have from taxes and the kind of budget that you run.

A president of an urban, non-border small college agreed that the correlation between property tax revenue and student completion was more indirect than direct, “I think what is perceived is what we can or are able to do in terms of the numbers of programs and types of programs that we are able to offer which indirectly leads to students’ completion student success.”

A president from a rural, border medium college did not feel there was a strong relationship between property tax revenue and student completion despite a general funding shortage. When asked about completion, he stated, “It hasn't been an issue. And you know, we've been so focused on student success early on that, you know in spite of not having, you know, the adequate dollars from tuition and state to cover that, there's been a deliberate focus on student success. We have student success centers at all sites. We offer tutoring, writing lab, we have an initiative where if the student drops below two and a quarter below, there's an early intervention to keep them from dropping into probation . . . we've seen a lot of positive results on that.”

Property Tax Revenue

The theme of property tax revenue was evident throughout the semi-structured interviews and was addressed from various angles by the 16 community college chancellors and presidents.

There was dialogue on the purpose of property tax revenue and how that purpose has evolved over time. The participants discussed both how well the local property tax system has worked (31.3%) and how it has failed their campuses (19.0%) because they could not generate enough revenue to make up for the state funding shortfalls. In addition, the problem between service districts and taxing districts was highlighted with participants (13.0%) stating that their service districts were larger than their taxing districts. This meant they could not assess property taxes in the service area to serve the population of students from that service area. While out-of-district tuition and fees were discussed as a means of making up for this service district issue, none of the college presidents called it a solution to the problem. Five of the campus leaders (31.3%) discussed how property tax revenue is not being used as it was intended for maintenance and operations of facilities and is instead used to supplement many other programs. In

addition, the issue of fiscal management was discussed by three of the presidents (19.0%) who believed the financial function of an institution was ultimately the responsibility of its leader. The discussions on property tax revenue follow.

A president from a rural, non-border, small college explained how the Higher Education Code of Texas designates the purpose of higher education funding sources:

The state funding – the original contract back in the day that is so old now is that because we have local tax bases, state funding would be for instructional costs, and local property taxes would be for maintenance and operations and some instruction. What has evolved over the years is as state funding for instruction has decreased, you may be using some property taxes for instruction because it says you can. You may be doing that versus facilities and ground and maintenance and operations.

A chancellor from an urban, non-border college system described property tax revenue in the following way, “The beauty of tax dollars is we don’t have to sell or do anything to earn it. It is there as a resource to solve the problems.” The president of a rural, non-border large college described the types of problems that property tax revenue helped to solve:

If they (students) are struggling financially and they from day to day don't know if your car is going to get you here and gas for the car, and you can't buy a book . . . If you are able to put in place some of the services of renting books or emergency funds . . we've got a lot of that through donors where the faculty even have some discretion. If they see an emergency, they can help address it. But if you have such low tax revenue, you just can't put in all those nice programs.

The president of an urban, non-border, small college addressed the application of property tax revenue from the perspective of fiscal management. “You do what you need

to do with the resources you have . . . ultimately, we make the decisions in terms of where our tuition and fees are going to be and where our local taxes are going to be and what the state resources are to make it work.” The chancellor of an urban, non-border college system agreed: “How we really look at it is we need X to operate . . . the bottom line is you just put it all into a pot and try to figure out how you balance.” The same chancellor gave a more detailed explanation of how complicated a campus leader’s role is in relation to managing the “bottom line” referenced:

So I guess with the property taxes, I'll be honest. I think the biggest thing is being able to maintain your property tax relationships. So like when we did the bond, it passed by 70%. When you have your industry - the (local) industry, which is 52% of our tax base and all 90 companies endorse the bond, that's pretty significant knowing that they were going to have a tax increase because the debt service would go up. So I think the relationship with your taxing entities is so critical if you know - we're allowed right now to increase our taxes up to eight percent without going out for a vote. We'd have to have some hearings, but if we really got into a bind, I believe we could pass that 8% because of the relationships now and you know, and that's one of the things in this legislative session. There is a lot of pressure to control and lower property taxes. And I think that's where our challenge is going to be with even with what college system chancellor is doing in college system and how the property taxes are huge for his budget. What he's doing, and he's made it very clear some of the real successes and innovation that he's doing, he's having to fund it with property taxes. You limit that and then you limit our state's resources. What do you think's going to happen? It's only tuition and fees. So it goes down and ultimately impacts the student.

Property revenue was also framed in the following way. A president of a rural, border, medium college described the college's relationship to property tax revenue, "You know, property tax for us is . . . Number one, it's not sufficient to cover maintenance costs, really. So what we end up having to do – it's the opposite – it has an impact on operations because we have to draw out tuition revenue to supplement tax revenue for the facilities upkeep. It's so detrimental in that sense. Instead of helping, it hurts us because the values . . . they're not sufficient to maintain the facilities. And we're excluding the ones that are not in the taxing district." The same president discussed the limitations he faces financially as a result of having a conservative board:

And property taxes in the area have not been – the valuations have not been that great. Our board has been very conservative on taxes. It's hard for us to squeeze pennies. Generally, about every four or five years, I'm able to get a penny or two increase, and then we hold steady for four or five years, and then they'll give me another penny or two. And it's tough to work in that environment.

A chancellor from a rural, non-border large college discussed how property taxes are not sufficient to make up for funding shortfalls from the state, "The big part of our revenue now comes from student tuition and fees, student housing, cafeteria. And we're really throwing the operations onto the backs of the students, and we've had to raise the local taxes and been able to see the colleges that aren't getting any state money. (They say) 'I'm not getting enough to live.' I see some neighbors selling off land and closing programs."

There was also a discussion of how citizens in some community college districts feel about the increase of property tax revenue. One president from a rural, non-border small college offered a story about a failed tax increase referendum that would have funded three branch campuses that were in his service district but not in his taxing

district. The president shared that an anti-tax political action committee became involved in the referendum, and as a result, the vote failed, making it impossible for the small college to proceed with its plans to grow.

We had three referendums: one for Rural County 1, one for Rural County 2 and one for Rural County 3. And I thought we had a fighting chance, and about a month before it was over (political action group) came in . . . that's a radical political group who opposes all bond issues, but they have some really high-powered people . . . after they came in we got beat badly in all three counties even though our enrollment in those counties is very substantial. So they think the only way that you ought to raise money is through sales tax.

The president of a rural, non-border, small college shared his limitations in having only one taxing district in his service area, “My school – our tax district is one county which is unfortunate for us we don’t get to tax this county and there are seven of us in the same boat around the state. So our one county taxed happens to be the third smallest tax base of the 50 colleges and that’s not going to change. This is an example of the rich get richer and the poor get poorer.”

The chancellor of a rural, non-border, large college discussed the growing dependence of community colleges on property tax revenue since the 1980’s, “You know in the 1980’s nobody really cared about the local taxes. That was kind of gravy. Now it's lifeblood.” This president followed up with the same idea voiced by his colleagues in leadership which was that the imbalance in the state funding model and decreased funding from the state forced some campuses to put the burden on students through higher tuition and fees.

Tuition and Fees. The use of property tax revenue to keep tuition and fees low was a sub-theme of the discussion on this local revenue. Campus leaders also discussed

the relationship between low property tax revenue and tuition and fees. The president of a rural, non-border small college discussed the idea that many students cannot pay the full tuition and fees and rely on outside sources to keep them in college because of the high tuition and fees at some campuses:

(The) cost of instruction is about four to four and a half times what the student pays. Students can't come up with what they have to pay now. (For) 80 to 85 percent of them, there's a third party payer paying the tuition and fees whether it be the Pell Grant the NSDL or some FSEOG or TPEG local scholarship.

In acknowledging the problem of high tuition for students, campus leaders shared that they believe that high property tax revenues keep tuition and fees low for students. A chancellor from an urban, non-border college system stated, "I think because of our tuition and fees model and the way property taxes play in with the state allocation and the over all financial picture, if we didn't have the property tax and if (this) college didn't have such a strong tax base, we'd have to increase tuition and fees much higher." A more detailed description of the relationship between property tax revenue and tuition and fees was offered by a president from a rural, non-border medium college, who discussed affordability:

Well, to me the relationship is there because the ad valorem tax helps us control affordability. So if you're struggling to raise taxes or to generate enough revenue out of taxes to do that, your tuition is going to go up and your state reimbursement is not going to change much. So as you charge more, your students are not going to take as many courses because they're going to make that financial decision. We don't offer any student loan program here. So really, that's also a factor. I think that if our property tax revenue goes down and we don't have enough, we have to raise tuition. We'd probably have to take a look at do we begin to offer

loans? So, I think one of the keys from my standpoint would be that it probably relates to affordability more than anything else.

The deliberate effort of using property tax revenue to keep tuition and fees low for the benefit of the student was further described by the chancellor of an urban, non-border college system, who stated:

So here's how it works. We've made a conscious decision to use property tax dollars to artificially buy down the cost of tuition, if you will. So we're at X dollars a credit hour and no fees. It's well below market and is very intentional, and we have kept our property tax revenue at the max each year. We've raked in the full amount of increased valuation with the specific intent of keeping the tuition as low as possible.

One president discussed the relationship between local property owners and tuition and fee rates. This president from an urban, non-border college system described how increases in tuition and fees resulted from the unwillingness of some local taxpayers to be taxed further. If taxpayers rejected local property tax increases, college presidents facing decreases in state allotments felt they had no other choice but to raise tuition and fees, "Then we have to put it on the backs of the students and raise tuition because surely the state's not going to give us any more money. They're decreasing so we have no other option but to raise tuition."

One small college president was direct about how low property tax revenue affected his rural, non-border, small campus, stating, "What the smaller schools are going, I can promise you is we are funding instruction more with your other source of funding – tuition and fees. So you continually raise tuition and fees to cover the increasing costs of instruction."

In discussing the relationship between high tuition and property tax revenue, participants also shared the difficulty of operating colleges that had campuses that were included in their service area but not in the taxing district, something that had an impact on tuition and fees. A chancellor from an urban, non-border college system discussed the experience of attempting to annex a portion of her service area into her taxing district, “Even though half of it is in our service area, they don't pay taxes. And so there was an annexation election to try to get it all in our taxing district. It lost by 90%.”

Four campus leaders (25%) discussed the use of out-of-district fees to alleviate the pressure of covering costs associated with campuses not paid for by local taxpayers, but also shared the idea that these out-of-district fees are not enough. A chancellor from a rural, non-border large college spoke of his own campus' attempts to collect out-of-district fees from the students who do not live within his taxing district:

We don't even have the county . . . it's by school district. We've got a little bit of District 1, District 2, District 3, District 4, and District 5. We're missing District 6, District 7, and District 8. We're missing all these areas. They're not - in they didn't vote, and we collect no revenue from them, even though it's part of our service district. So we charge an out-of-district fee. We call it an equalization fee to try to make up, but I did the calculations one time about students from our taxing district and how much we get per student, and it was like ten times what our equalization fee is. Really our equalization fee is 65 percent higher than in District 2; to truly equalize we would have to charge so much that it would be insane.

In discussing the difference between taxing districts and service districts, the chancellor emphasized that the state's property tax revenue structure created a difficult situation for campus leaders whose taxing districts did not raise enough revenue to help

them keep tuition and fees low. The state's role in in the relationship between property tax revenue and student performance measures was another sub-theme during the interviews from the perspective that the state had created an over-reliance on property tax revenue by reducing state allotments to campuses over the years. The discussion on state disinvestment follows.

State Disinvestment. Another sub-theme that emerged during the semi-structured interviews was the issue of state disinvestment, which was the idea that state allocations to the 50 community colleges have decreased dramatically since the 1980's. The interview participants cited both the dramatic drop in funding and also spoke of the effects of the funding reduction. Six interview participants (25%) shared their perspectives regarding a disinvestment from the state of Texas. The president of a rural, non-border, small college stated:

It's very inequitable. Originally, community colleges were set up so that sixty percent of your money came from the state, fifteen percent came from local taxes, fifteen percent came from tuition and fees, and ten percent came from federal and other. And of course, we try to get every federal program that's out there. But now, healthy community colleges get only between 15 and 25 percent of their money from state funds. Local taxes is statewide 47 percent, and we're looking at 2 percent. That is a huge inequity. You can make up a little bit with tuition and fees, but you're not making up a lot.

A chancellor from a rural, non-border large college spoke to the issue of the state's disinvestment in community colleges since the 1980's, "So in 1980, 80 percent of the money to run large college came from the state. It's down to about 19 percent now." Another president from an urban, border college system shared his state allocation reduction, "In 1984, 72 percent of my budget was state appropriations. A little over 30

years later, it's 22 percent and falling.” Similar numbers were shared by the president from a rural, non-border medium college who offered his observation of the state’s funding reduction, “The state’s pulled back so far. So state revenue is 17% of our revenue. When I started at Medium College, it was 65 percent of our budget.” He went further to explain, “What we’ve done as a college is adopted the philosophy that the local taxpayer and student will pick up that dollar together if a dollar drops out from the state. The local taxpayer will pay fifty more cents, and the students will pay fifty more cents.” Three more campus leaders shared the same type of observations during the semi-structured interviews on Texas community college property tax revenue.

A president from a rural, non-border small college shared his level of state funding, “We are about 28 percent from the state, so the rest has to come from – we are one of the highest in percent of tuition and fees – we’re about 52 percent tuition and fees revenue which is one of the highest in the state. We know that, and it’s driven by a higher out-of-district fee . . . our in-district tuition is fairly low still but our out-of-district tuition is one of the highest in the state.”

To follow with this line of thinking, the chancellor from an urban, non-border college system offered a chart from THECB showing the decrease in state support of community colleges and stated, “This is the state piece, and so you can see the state (funding) is really dwindling.” She also stated, “If you look at the percentage, you can see our property taxes are 35 percent almost – here they become almost 40 percent of our budget and that’s really because the state allocation has gone down so much from 41 percent to 23 percent.” She used the chart to explain that, at her campus, the role of property tax revenue was to make up for state losses.

A president from an urban, non-border college system also spoke to the change in funding levels from the state, “We used to be evenly distributed between property taxes,

tuition, and state. Well, now we're at 21% state, and it's decreasing every year." Just as the sub-theme of state disinvestment emerged during the semi-structured interviews of community college presidents and chancellors, the issue of equity also became a prevalent topic of conversation.

Equity Issues. The issue of equity arose naturally from the conversation about Texas community college property tax revenue. Interview participants discussed the issue of property rich versus property poor community college districts and also addressed the differences in per-student allocations as related to those differences. Campus leaders also shared that there are no state allocations for academically disadvantaged students, economically disadvantaged students, or minorities and that these students are especially affected by higher tuition and fees.

A chancellor from a rural, non-border large college spoke to the topic of inequity by showing the differences in property tax revenue among the 50 community colleges in Texas. To study the issue of inequity amongst the colleges, the chancellor created a spreadsheet of his own where he calculated the total tax revenue per student for each of the 50 colleges in Texas:

I looked up the state's most recent full-time equivalent. So I just divided the number of students into this, and that gives you how much local tax you have per student. If you've got a small taxing district – you know somebody who's getting - Small College, \$86 a student and another college is getting \$3500 – there's a vast difference there in the kind of support you're able to provide. I think every president, you know . . . didn't want to admit that they're struggling and it's like hey, I'm doing fine and it's almost like other presidents who have the high tax rate act as if they're geniuses like oh look how smart I am. What's its kind of the rich

and the poor right? It is kind of like the person born on third base and they think they hit a home run.”

A president from a rural, non-border, small college explained the issue of inequity by comparing other campuses to his:

Small College President has a smaller enrollment than I have and about five times the property tax money. Other Small College President has about the same enrollment I have and maybe 6 or 7 times the property tax money because of their value of their county. They have a small tax rate, but it still produces a lot of money. So ours is about X and the state average is 11. I asked my board a very controversial question just to get them to thinking . . . if the state is 11 and the range is 7 to 18 and we're at X, does that mean you have hired one of the most productive, efficient presidents in the state or does that mean we are shortchanging our students? I said is it a sign of our efficiency? Or are we giving our students 2,000 less per full time equivalency than the average in the state and they're settling in coming to us? And so my answer I told my board is I would never say we were shortchanging our students. I would not want to say that. I would say we are doing the best we can with our available resources. But we're certainly less than the average in the state so if a person – it's as simple as this and I even hate to admit this one – come to Small College and this is your student experience – go 2.5 hours this way and go to Other Small College that has a high tax base. Your student experience is going be much different in the classroom but even more so out of the classroom: your student success opportunities, your coaching, your extracurricular activities. So we meet a need, and we are doing the very best we can, but property tax inequities keeps us from doing more – a whole lot more.

The president of a rural, non-border, small college explained his perception of how Texas community college property tax revenue directly creates inequity among institutions:

(There are) colleges that have a 100 million dollar budget but they have 80,000 students, so their dollars per FTE (full-time equivalent) may not be much more than mine. Well, here's where I'm headed with that. Two years ago the average was \$11,000 per FTE. The range was from like 7 to 18 so there's some more of that inequity. And biggest driver of that inequity would be what? Property taxes.

In discussing property tax revenue at his own campus, the chancellor of an urban, non-border college system described a local constituent who had worked to get voters to approve the creation of the college district. He explained the taxpayer's vision of creating opportunities for anyone who wanted to attend college and connected the property tax revenue to his college's ability to fulfill that vision:

And it really was about the issue of equity and opportunity . . . today we kind of play with this concept of the American dream. Today people think it means individuals being able to pursue something. To her, it meant that everybody had a chance - everybody should have a chance for a better life . . . The beauty of tax dollars is we don't have to sell or do anything to earn it. It is there as a resource to solve the problems."

In discussing a unique transition-to-college program his colleges offer to high school students, the chancellor further enforced the idea that property tax revenue does help create equity among students, "It's important that all means all. So when we go into a high school and we say everyone has the opportunity . . . about 10% are not eligible because they're immigrants or DACA students or have something else going on. And therefore all has to mean all."

Interview participants further discussed the relationship of property tax revenue to the performance of economically disadvantaged students, academically disadvantaged students, and minority students. One urban, non-border college system chancellor felt that property tax revenue affected the performance of minorities directly, stating, “I think that it does impact the performance minorities because I think that you've got to keep the cost as low as you can for them.” In discussing economically disadvantaged students, one president from a rural, non-border, medium college was asked if she felt property tax revenue affected this group of students, and she replied, “Absolutely, because we need funds for all those wraparound services and to help the students.” The president at an urban, non-border college system believed property tax revenue affected how he was able to serve economically disadvantaged students at his campus, “Yes, that's the whole issue around serving our backyard. When you look at our backyard, it's economically deprived. We’ve got an average household income of \$12,000 a year in some zip codes. The revenue would go a long way to offset some of those shortcomings.”

Regarding academically disadvantaged students one rural, non-border large college chancellor felt there was a relationship between property tax revenue and academically disadvantaged students stating, “Oh sure. I mean I again there have been huge cutbacks in the developmental (education) programs.” The president of a rural, non-border, medium college agreed with the issue of property tax revenue affecting how academically disadvantaged students are supported, sharing, “I'd say yes, it has an impact on academically (disadvantaged) as well just the fact that you know, you can see it firsthand. We're not going to have the services. We're not going to have the number of advisors, right? We're not going to have the number of tutors that others have. And just not having the staff in place is a killer here.”

The chancellor of an urban, non-border college system discussed how property tax revenue specifically helped developmental education students at her campus:

The revenue that we've had has allowed us to try to invest in places we wouldn't be able to invest. We knew we needed to move college prep (developmental education) faculty full-time. We wouldn't have had that kind of revenue to make that investment without property taxes. I mean it comes back again to balancing the budget and juggling the pieces, but without that I don't think you could serve those populations.

The president of an urban, non-border college system voiced a similar opinion on how property tax revenue affects academically disadvantaged students, "It definitely would because the bottom line is we don't get state funding for developmental education students any longer. So as a result, I'm absolutely certain that we absolutely have to end up trimming some of those services back if those property taxes weren't there." The issue of services provided for sub-groups like the three mentioned was addressed by four more campus leaders.

The president of a rural, non-border medium college stated:

You know, I think that again, what can you afford to do? That's the that's the key thing and you've heard that every one of these I guess that's probably if you can't - again, you have to run a college like a business in terms of making sure that you make your payroll and the balance your budget and so forth. And so what services can you provide to academically disadvantaged students that within that budget. And so if you don't have the funding, you can't do it.

The president of a rural, non-border, medium college expressed his surprise at the impact of property tax revenue on academically disadvantaged students by referencing

how those funds are used to hire personnel, something he feels clearly impacts student achievement:

How can ad valorem taxes be so important to Texas funding model? How can you implement a new process like we've been talking about if for academically disadvantaged students you can't even hire one instructor at \$35,000? You know, you can maybe hire a part-time employee or staff member to implement this program. So for the larger institutions, it's probably not as big of an issue because of the ad valorem taxes they have are driving those services.

The president of an urban, non-border, small college expressed his opinion on a clear relationship between property tax revenue and the success of academically disadvantaged students, economically disadvantaged students, and minorities. He related the funding source to his ability to provide necessary services to these sub-groups:

Yes. Clearly the more services support programs that we can provide, the more likely they are to be able to enroll and move to success at-risk students. Whether they are minorities, whether they are academically or economically disadvantaged doesn't make any difference. It's basically the same type of concept.

The president at an urban, non-border college system also believed there was a strong connection between property tax revenue and academically disadvantaged students, "We could be doing so much more around here with more money and more resources around expediting that journey from developmental ed to college ready starting at the high schools so that when they come here, they're ready or even way before that (by) building Summer Bridge programs."

Lastly, one president from an urban, non-border college system affirmed that property tax revenue impacts minorities on his campus because it allows him to keep tuition and fees affordable:

I think the answer to that is yes, but in a convoluted way in this sense - in the fact that allows us to keep our tuition at historic lows. I don't believe it's true everywhere . . . but in terms of those minorities which happen in the lower income ranges along with non-minorities in the lower income, it would definitely affect the accessibility because we would have to raise tuition. I think in that sense the answer is yes.

The findings from the semi-structured interviews revealed the thoughts of Texas community college chancellors and presidents on the impact of property tax revenue on their campuses. The four themes and three sub-themes that emerged from the interviews offered an in-depth understanding of the influence of property tax revenue on student performance outcomes.

Summary of Findings

In regard to the possible relationship between property tax revenue and student transfer, findings of this study suggest that a statistically significant positive relationship existed between Texas community college property tax revenue and student transfers. As property tax revenue increased, so did the number of transfers. Regarding rural community colleges, a statistically significant positive relationship was found between rural community college transfers and property tax revenue. In addition, a statistically significant relationship was found between non-rural community college transfers and property tax revenue. For border community colleges in Texas, a statistically significant positive relationship was found between border community college transfers and property tax revenue. A statistically significant positive relationship was also found between non-border community college transfers and property tax revenue. For rural and non-rural and border and non-border community colleges in Texas, as property tax revenue increased, so did the number of transfers.

For the 10 community college regions in Texas, the following findings were recorded. In Region 1, the High Plains region of Texas, there was no relationship between transfers and property tax revenue. In Region 2, the Northwest region of Texas, there was no relationship between transfers and property tax revenue. For Region 3, the Metroplex region of Texas, a statistically significant positive relationship was found between transfers and property tax revenue. As property tax revenue increased, so did the number of transfers. For Region 4, the Upper East region of Texas, there was no relationship between transfers and property tax revenue. For Region 6, the Gulf Coast region of Texas, a statistically significant positive relationship was found between transfers and property tax revenue. As property tax revenue increased, so did the number of transfers. In Region 7, there was no relationship found between transfers and property tax revenue. For Region 8, the South Texas region of Texas, a statistically significant positive relationship was found between transfers and property tax revenue. As property tax revenue increased, so did the number of transfers. In Region 9, no relationship was found between transfers and property tax revenue.

In alignment with these findings, the majority of the Texas community college presidents interviewed for the purpose of this study believed that property tax revenue influences student transfer. During the semi-structured interviews of 16 Texas community college presidents, 63.5% of the participants believed there was a relationship between property tax revenue and student transfer. Six of the community college chancellors and presidents (38.0%) felt that property tax revenue allowed them to provide transfer services in the form of advising or other student services.

For the relationship between property tax revenue and student licensure, findings of this study suggest that a statistically significant positive relationship existed between Texas community college property tax revenue and student licensure. As property tax

revenue increased, so did the number of transfers. For rural community colleges in Texas, a statistically significant positive relationship was found between licensure and property tax revenue. For non-rural community colleges in Texas, a statistically significant positive relationship was found between licensure and property tax revenue. Regarding border colleges in Texas, a statistically significant positive relationship was found between licensure and property tax revenue. For non-border colleges in Texas, a statistically significant positive relationship was found between licensure and property tax revenue. For rural and non-rural and border and non-border community colleges in Texas, as property tax revenue increased, so did the number of licensures.

For the 10 community college regions in Texas and the relationship between licensure and property tax revenue, the following findings were recorded. For Region 1, the High Plains region of Texas, there was no relationship between licensure and property tax revenue. For Region 2, the Northwest region of Texas, there was no relationship between licensure and property tax revenue. For Region 3, the Metroplex region of Texas, a statistically significant positive relationship was found between licensure and property tax revenue. As property tax revenue increased, so did the number of licensures. For Region 4, the Upper East region of Texas, there was no relationship between licensure and property tax revenue. For Region 6, the Gulf Coast region of Texas, a statistically significant positive relationship was found between licensure and property tax revenue. As property tax revenue increased, so did the number of licensures. In Region 7, the Central Texas region of Texas, a statistically significant positive relationship was found between licensure and property tax revenue. As property tax revenue increased, so did the number of licensures. For Region 8, the South Texas region of Texas, a statistically significant positive relationship was found between licensure and property tax revenue. As property tax revenue increased, so did the number of licensures.

In Region 9, the West Texas region of Texas, there was no relationship between licensure and property tax revenue.

Regarding the results of the semi-structured interviews, while there was not a consensus within the group that property tax revenue influences the number of licenses achieved, 50% of the participants did state that property tax revenue helps to support licensure in various ways. This local revenue source helps participants provide test reviews for state exams, technical instructors for their programs, or keeps licensure programs in existence at campuses.

For the relationship between property tax revenue and student completion, findings of this study suggest that a statistically significant positive relationship existed between Texas community college property tax revenue and student completions. As property tax revenue increased, so did the number of completions. For rural community colleges in Texas, a statistically significant positive relationship was found between completion and property tax revenue. At non-rural community colleges in Texas, a statistically significant positive relationship was found between completion and property tax revenue. For border community colleges in Texas, a statistically significant positive relationship was found between completion and property tax revenue. For non-border community colleges in Texas a statistically significant positive relationship was found between completion and property tax revenue. For rural and non-rural and border and non-border community colleges in Texas, as property tax revenue increased, so did the number of completions.

For the 10 community college regions in Texas and the relationship between completion and property tax revenue, the following findings were recorded. In Region 1, the High Plains region of Texas, there was no relationship between completion and property tax revenue. For Region 2, the Northwest region of Texas, a statistically

significant positive relationship was found between completion and property tax revenue. As property tax revenue increased, so did the number of completions. For Region 3, the Metroplex region of Texas, a statistically significant positive relationship was found between completion and property tax revenue. As property tax revenue increased, so did the number of completions. For Region 4, the Upper East region of Texas, a statistically significant positive relationship was found between completion and property tax revenue. As property tax revenue increased, so did the number of completions. For Region 6, the Gulf Coast Region of Texas, a statistically significant positive relationship was found between completion and property tax revenue. As property tax revenue increased, so did the number of completions. In Region 7, the Central Texas region of Texas, a statistically significant positive relationship was found between completion and property tax revenue. As property tax revenue increased, so did the number of completions. For Region 8, the South Texas region of Texas, a statistically significant positive relationship was found between completion and property tax revenue. As property tax revenue increased, so did the number of completions. For Region 9, the West Texas region of the state, there was no relationship between completion and property tax revenue.

In alignment with these findings, the majority of the Texas community college presidents interviewed for the purpose of this study believed that property tax revenue influences student completion. During the semi-structured interviews of 16 Texas community college chancellors and presidents, 94% of the participants stated that there was a correlation between property tax revenue and student completion. The campus leaders offered the idea that property tax revenue helps to pay for personnel like retention specialists, advisors, or for other student services that supported successful student completion. Participants also discussed the idea that property tax revenue helps them to remove financial barriers for students through student service programs that, for example,

lessen the cost of the state-required meningitis shot or help to provide lower cost textbooks.

To conclude the discussion on the relationship between property tax revenue and selected student performance measures, Chapter V provides a comparison analysis of the findings and the literature review of Chapter II. Also included in the subsequent chapter are the implications of the findings of this study and recommendations for future research endeavors.

CHAPTER V: SUMMARY, RECOMMENDATIONS, AND IMPLICATIONS

The correlation between education funding and student performance outcomes, which has more thoroughly been investigated and debated at the K-12 public education level (Baker, 2012), has significant implications at the community college level. In Texas, community college funding and its impact on student achievement requires the same level of focus for three key reasons. First, these two-year institutions share the same local revenue model that was deemed inequitable in the K-12 public education system, and secondly, these institutions educate 50% of all higher education students in the state (THECB, 2018). Lastly, despite the majority enrollment, community colleges in Texas receive only 27% of the funding allotted through local, state, and federal sources (Mullin, 2010) and increasingly depend on local resources in the form of property tax revenue in order to cover costs. Because of differences in revenue caused by varying levels of property value in their taxing districts, community colleges in Texas face differing levels of per-student funding. To investigate property tax revenue and its effect on student transfer, licensure, and completion numbers, this study evaluated data from THECB and TACC on the 50 community colleges in Texas and analyzed interview transcripts for 16 community college chancellors and presidents. This chapter offers a thorough discussion of the study's findings, implications of the findings, and recommendations for future research.

Summary

The findings of this study consistently determined that property tax revenue had an impact on community college student transfer, licensure, and completion. These findings coincided with the theoretical construct of this study, education production function theory, which states that educational inputs affect student outputs (Baker, 2012).

Together with education production theory, the findings were supported by additional research on the relationship between educational funding and student performance outcomes. Baker, for example, (2012) discussed at length the idea that funding influences a school system's ability to offer better educational opportunities while Miller (2013) offered the idea that funding reductions can impact community colleges. Beyond evaluating the relationship of property tax revenue to the Texas Legislative Budget Board performance outcomes, this research specifically addressed the areas of transfer, licensure, and completion for rural and non-rural community colleges, border and non-border community colleges, and all ten of the Texas community college geographic districts in Texas.

Previous research bolsters the results of this study, in which a statistically significant positive relationship was found between Texas community college property tax revenue and student transfers. As property tax revenue increased, so did the number of transfers to universities. Further, a statistically significant positive relationship was found between student transfers and property tax revenue at rural colleges. A statistically significant positive relationship was also found between student transfer and property tax revenue at non-rural colleges. For border colleges, a statistically significant positive relationship was found between transfers and property tax revenue, and a statistically significant positive relationship existed between student transfer and property tax revenue at non-border colleges. For rural, non-rural, border, and non-border colleges, as the amount of property tax revenue increased, so did the number of transfers. Furthermore, there was a statistically significant positive relationship found between student transfer and property tax revenue for three of the ten regions in Texas, Region 3 – Metroplex, Region 6 – Gulf Coast, and Region 8 – South Texas.

In alignment with these findings, the majority of the Texas community college presidents interviewed for the purpose of this study believed that property tax revenue influenced student transfer in that it allowed them to provide transfer support in the form of advising or other student services. Presidents spoke to the idea that property tax revenue also influenced transfer by helping them keep college affordable. Specifically, participants referenced their ability to use property tax revenue to keep tuition and fees low.

Regarding licensure, several studies have focused on the relationship between funding and this second student performance measures. In a significant 2014 study, Fleming found that career and technical education programs closed when funding was decreased. A study by Lassiter (2012) addressed the relationship between licensure and funding in a quantitative study and found that career and technical education programs are important to student success and that funding is a key factor that affects these programs. This research supports the findings of this study, which showed a statistically significant positive relationship between property tax revenue and student licensure. As property tax revenue increased, so did the number of licenses.

For rural community colleges in Texas a statistically significant positive relationship was found between licensure and property tax revenue. For non-rural colleges, a statistically significant positive relationship was found between licensure and property tax revenue. The same was true for border colleges where a statistically significant positive relationship was found between licensure and property tax revenue. Additionally, for non-border colleges there was a statistically significant positive relationship between licensure and property tax revenue. Furthermore, a statistically significant positive relationship between licensure and property tax revenue was found for four of the ten regions in Texas: Region 3 – Metroplex, Region 6 – Gulf Coast,

Region 7 – Central Texas, and Region 8, South Texas. In these regions, as the amount of property tax revenue increased, so did the number of licenses.

Regarding the results of the semi-structured interviews with the 16 Texas community college chancellors and presidents, there was not a consensus within the group that property tax revenue influences the number of licenses achieved; however, 50% of the participants did state that property tax revenue helps to support licensure in various ways. Interview participants stated that local revenue helps community colleges provide test reviews for state exams, technical instructors for their programs, and helps keep licensure programs in existence at campuses.

For the issue of student completion and its relationship to funding, several studies have shown a correlation between the two constructs. A study by Zhang (2009) showed that state allocations impact student graduation rates for higher education students while Matula (2001) specifically showed that Texas community colleges with higher property tax revenue had higher completion rates.

This follows with the findings of this study, which demonstrated a statistically significant relationship between Texas community college property tax revenue and student completion. As property tax revenue increased, so did the number of student completions. For rural community colleges in Texas, a statistically significant positive relationship existed between completion and property tax revenue. The same was true for non-rural community colleges in Texas where a statistically significant positive relationship was found between student completions and property tax revenue. For border community colleges in Texas, there was a statistically significant positive relationship between student completions and property tax revenue. Non-border colleges showed the same correlation; there was a statistically significant positive relationship between student completions and property tax revenue. Regarding the regions in Texas,

a statistically significant positive relationship was found between student completion and property tax revenue for six of the ten regions in the state: Region 2 - Northwest, Region 3 - Metroplex, Region 4 –Upper East, Region 6 – Gulf Coast, Region 7 – Central Texas, and Region 8 – South Texas. For these six regions, as the amount of property tax revenue increased, so did the number of student completions.

In support of these findings, the majority of the Texas community college presidents (94%) interviewed believed that property tax revenue influences student completion. Participants also discussed the idea that property tax revenue has helped them to remove financial barriers for students through the provision of student service programs that, for example, lessen the cost of the state-required meningitis shot or help to provide lower cost textbooks. Also discussed was idea that property tax revenue helps to pay for personnel like retention specialists, advisors, or for other student services that supported successful student completion

Implications

As indicated in the findings of this study, property tax revenue is related to the following Texas community college performance measures: student transfer, student licensure, and student completion. State policymakers in Texas should consider a deeper analysis of the effects of property tax revenue on Texas community college students in order to address the issue of equity for students who pay varying amounts of tuition and fees in order to achieve the same goals of transfer, licensure, or completion (Augenblick, 1981). Though higher education is privilege and not a right in Texas, students should not be priced out of higher education because of something they cannot control such as low property valuation in a community college's taxing district. Students should also not be priced out of a higher education because of a failure by the state of Texas to adequately fund its two-year institutions.

Because this study effectively showed that the more property tax revenue a campus received, the more students achieved transfer, licensure, and completion, state policymakers should also consider making appropriate changes to the Texas community college funding model. Dwindling state support (Hudson, 2008) has forced campus leaders to do more with less and to engage in the misapplication of property tax revenue towards keeping tuition and fees low instead of keeping facilities in good repair and supplementing instructional costs. This stretching of the budget to use these unrestricted funds in order to drive down the cost of tuition means campuses at the top or close to the top of their property tax cap are in untenable positions where the burden of funding the campus is put on the students' shoulders. Campus leaders whose property tax revenue is low shared that they were forced to raise tuition and fees in order to cover costs.

Considering the creation of the state's higher education initiative, 60X30TX and its ambitious goals of having 60% of the Texas population of people between the ages of 25 and 34 achieve a higher education credential by 2030 (THECB, 2019), policymakers should evaluate whether colleges with low property tax revenue and high tuition and fees will be able to make significant progress towards these goals. Goal 2 of the 60X30TX initiative specifically addresses identifying the number of completion of higher education students "by ethnicity, gender, and economic disadvantage" (THECB, 2019). Since the campus leaders interviewed for the purpose of this study have noted a correlation between property tax revenue and the subgroups of academically disadvantaged, economically disadvantaged, and minorities, policymakers should be aware that annual performance data may show the same relationship. This is particularly important because of the noted reduction in funding to developmental education programs in the state. Developmental education students are statistically first generation minorities who are also

academically disadvantaged (King, McIntosh, Bell-Ellwanger, Schak, Metzger, Bass & English, 2017)

In a continued discussion of 60X30TX, it should be noted that the state's goal to "reduce time to degree through alternative degree pathways" (THECB, 2009) could be impacted by the imbalanced funding model of the state. These alternative degree pathways include accelerated developmental education and co-requisite models. (King, et al, 2017). While the mechanism for expeditiously advancing students through a community college career pathway may be structurally sound, it may not take into account that 50% of community college students will most likely continue arrive to the campuses just as unprepared as they were prior to the creation of 60X30TX. Further, academically disadvantaged students, facing drastically shortened developmental education sequences, will be forced into the gateway courses of composition and algebra or algebra equivalent courses much faster than what educators would consider reasonable. Faculty and student success centers on campuses could find themselves hard-pressed to provide adequate tutoring for students who have significant gaps in learning. Minus the robust structure and function of traditional developmental education programs, campuses may increasingly rely on tutoring and advising services as well as the oversight of retention specialists. For community colleges with low property tax revenue, this will be a challenge because they may not have the revenue to retain such support in the form of additional or better-trained personnel.

Texas community college chancellors and presidents should continue to engage policymakers in deliberative discourse about the Texas community college funding model, drawing attention to the inequities created by the state's well-chronicled disinvestment in two-year institutions. In addition, campus leaders should work to assess the maintenance and operations needs on their campuses and both share these issues with

their students, staff, stakeholders, and boards and also discuss these needs with policymakers in an effort to find real solutions to their plant management needs. The effort should be made to draw attention to the fact that, while the Texas Education Code designates property tax revenue for the purpose of maintaining facilities, this is not how this local revenue is being applied. As indicated in this study, property tax revenue is being used to cover personnel, instructional, and programmatic costs that were once covered through state allocation. As a result, community college campuses are not being adequately maintained, a trend that, over time, could impact campus functions and possibly student learning.

Recommendations for Future Research

Because a relationship has been established between Texas community college property tax revenue and student transfer, licensure, and completion, future research should include a deeper analysis into how this local funding source impacts student subgroups. Future studies should investigate how property tax revenue affects minorities. Additionally, the sub-groups of academically disadvantaged and economically disadvantaged should be included in future studies. Further, the variables in this study showing the highest levels of positive statistical significance should be further analyzed for predictability. Future research should also include Texas community college student perspectives on what they believe influences their ability to meet performance outcomes. Per-student allocations for state and federal allocations were omitted from this study and could be included in future research endeavors. In addition, explicit per-student allocations from property tax revenue should be added as a variable in future studies. Finally, because this study did not differentiate between part-time and full-time students, future studies should consider exploring this important student characteristic.

Conclusion

The important role of community colleges and their effectiveness in offering transfer pathways, licensure, and completion credentials, especially since the Great Recession of 2008 (Barr & Burner, 2013; Carlson, 2013) has been effectively researched, as has the importance of adequate funding for improving student achievement (Baker, 2016). The nation's 2008 economic downturn impacted Texas community colleges directly and two-year institutions that experienced post-recession budget cuts never achieved their pre-recession funding levels once the downturn reversed. Already facing well-documented reductions in state allocations, Texas community colleges have been forced to rely on property tax revenue in order to make up for shortfalls caused both by external economic factors and a state disinvestment at a time when an ambitious state initiative, 60X30TX, has been put in place.

With 50% of the total higher education population in Texas enrolling in community colleges, the increased focus on student performance and the role of these institutions in the health of local job markets must be reinforced by further research into the relationship between property tax revenue and student performance measures of transfer, licensure, and completion. This study, in an effort to offer a contribution to existing research, also seeks to provide direction towards a continued study on the importance of an equitable community college funding system in Texas and one that both supports student progress toward the exacting goals laid out in the state's 60X30TX initiative and gives all community college leaders the same foundation from which to provide an excellent higher education experience for all students.

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APPENDIX A:

INFORMED CONSENT TO PARTICIPATE IN RESEARCH

You are being asked to participate in the research project described below. Your participation in this study is entirely voluntary and you may refuse to participate, or you may decide to stop your participation at any time. Should you refuse to participate in the study or should you withdraw your consent and stop participation in the study, your decision will involve no penalty or loss of benefits to which you may be otherwise entitled. You are being asked to read the information below carefully, and ask questions about anything you don't understand before deciding whether or not to participate.

Title: A Study of Texas Community College Property Tax Funding and Selected Student Performance Measures

Principal Investigator(s): Michelle Cantu-Wilson, M.Ed.

PURPOSE OF THE STUDY

The purpose of this research is to determine if Texas community college presidents believe there is a relationship between funding and the selected performance measures and to determine if they believe demographic subgroups are affected by community college funding.

PROCEDURES

Procedure: Community college presidents will participate in semi-structured interviews that will be twenty to thirty minutes in length to determine if they see a relationship between community college funding and selected performance measures. The college presidents will be selected according to campus size. Four presidents will come from small college districts, four presidents will come from medium-sized college districts, four presidents will come from large college districts, and four will come from very large college districts. The interview questions will be developed by the researcher. The presidents will be contacted via email or telephone for solicitation of their participation. Those who agree to be interviewed will sign consent forms prior to the interview. The interview will be audio recorded and transcribed.

EXPECTED DURATION

The total anticipated time commitment will be approximately twenty to thirty minutes to complete the interview.

RISKS OF PARTICIPATION

There are no anticipated risks associated with participation in this project.

BENEFITS TO THE SUBJECT

There is no direct benefit received from your participation in this study, but your participation will help the investigator(s) better understand how community college presidents feel about the relationship between community college funding and selected performance measures.

CONFIDENTIALITY OF RECORDS

Every effort will be made to maintain the confidentiality of your study records. The data collected from the study will be used for educational and publication purposes, however, you will not be identified by name. For federal audit purposes, the participant's documentation for this research project will be maintained and safeguarded by the Principal Investigator for a minimum of three years after completion of the study. After that time, the participant's documentation may be destroyed.

FINANCIAL COMPENSATION

There is no financial compensation to be offered for participation in the study.

INVESTIGATOR'S RIGHT TO WITHDRAW PARTICIPANT

The investigator has the right to withdraw you from this study at any time.

CONTACT INFORMATION FOR QUESTIONS OR PROBLEMS

The investigator has offered to answer all your questions. If you have additional questions during the course of this study about the research or any related problem, you may contact the Principal Investigator, Michelle Cantu-Wilson, M.Ed., at phone number 281-739.5179 or by email at WilsonM3253@uhcl.edu.

SIGNATURES: Your signature below acknowledges your voluntary participation in this research project. Such participation does not release the investigator(s), institution(s), sponsor(s) or granting agency(ies) from their professional and ethical responsibility to you. By signing the form, you are not waiving any of your legal rights.

The purpose of this study, procedures to be followed, and explanation of risks or benefits have been explained to you. You have been allowed to ask questions and your questions have been answered to your satisfaction. You have been told who to contact if you have additional questions. You have read this consent form and voluntarily agree to participate as a subject in this study. You are free to withdraw your consent at any time by contacting the Principal Investigator or Student Researcher/Faculty Sponsor. You will be given a copy of the consent form you have signed.

Subject's printed name: _____

Signature of Subject: _____

Date: _____

Using language that is understandable and appropriate, I have discussed this project and the items listed above with the subject.

Printed name and title: Michelle Cantu-Wilson: _____

Signature of Person Obtaining Consent: _____

Date: January 4, 2019

THE UNIVERSITY OF HOUSTON-CLEAR LAKE (UHCL) COMMITTEE FOR PROTECTION OF HUMAN SUBJECTS HAS REVIEWED AND APPROVED THIS PROJECT. ANY QUESTIONS REGARDING YOUR RIGHTS AS A RESEARCH SUBJECT MAY BE ADDRESSED TO THE UHCL COMMITTEE FOR THE PROTECTION OF HUMAN SUBJECTS (281-283-3015). ALL RESEARCH PROJECTS THAT ARE CARRIED OUT BY INVESTIGATORS AT UHCL ARE GOVERNED BY REQUIREMENTS OF THE UNIVERSITY AND THE FEDERAL GOVERNMENT. (FEDERALWIDE ASSURANCE # FWA00004068

APPENDIX B:
INTERVIEW QUESTIONS

1. What is your perception of the influence community college property tax revenue on the number of students who transfer to a university?
2. What is your perception of the influence of community college property tax revenue on the percentage of students who pass a licensing exam?
3. What is your perception of the influence of community college property tax revenue on the number of students who complete a certificate or associate degree?
4. What is your perception of the relationship between community college property tax revenue and the performance of minorities?
5. What is your perception of the relationship between community college property tax revenue and the performance of academically disadvantaged students?
6. What is your perception of the relationship between community college property tax revenue and the performance of economically disadvantaged students?