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Examining Social Capital and First-Generation Student Status: Evidence from a Midwest University

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As demand for college graduates grows (Times Higher Education, 2023) persistence rates for first-generation students continue to lag (Toutkoushain et al., 2018, 2021). Complicating our understanding of this opportunity gap is the diversity of how first-generation student status is defined (Jo Peralta & Klonowski, 2017). We argue that while notable differences exist between first-generation students whose parents have no college experience (FGS-none), and those from families with collegiate backgrounds (continuing-generation), the distinctions between first-generation students with parents who have some college experience (FGS-some), and the other two groups are unclear. As such, this study investigates the implications of varying definitions of first-generation college student status through the lens of student social capital and retention. Using a comprehensive survey and data analysis, the study reveals no significant differences in students' cumulative social capital. However, examining social capital through principal component analysis revealed disparities in family social capital (FGS-none and FGS-some) and peer social capital (FGS-none). Further, lower levels of cumulative social capital and family social capital were significantly related to lower retention. The findings underscore the importance of academic support tailored to first-generation students, particularly FGS-none, and incorporating strategies within curriculum aimed at bolstering the social capital of first-generation students, especially during their critical freshman year. We argue that while post-secondary institutions should continue to use a broad definition of first-generation student status to catch the most at-risk students, research should continue to collect and explore the nuances between first-generation student populations and the role of social capital in student success.

Keywords: social capital, first-generation student, persistence, retention

Introduction

Recent data underscore the substantial economic and social benefits conferred by a college degree with degree holders experiencing boosted earnings and lower unemployment compared to high school graduates (Bureau of Labor Statistics, 2023). However, in order to enjoy these financial gains, students must first earn a four-year degree which is influenced by high school preparation (Choy et al., 2000; Coffman, 2011; Terenzini, 1996; Thayer, 2000),

finances (Thayer, 2000), college knowledge (Byrd & MacDonald, 2005; Coffman, 2011; McCarron & Inkelas, 2006; Thayer, 2000; Wohn et al., 2013), peer support (Astin, 1993; Dennis et al., 2005) and family support (Billson & Terry, 1982; Byrd & MacDonald, 2005).

Moreover, transitioning from high school to college is an inherently stressful experience (Permzadian & Credé, 2016) and has been found to be more difficult for first-generation students (McCarron, 2022; Pascarella et al., 2004). Students must adjust to a new academic culture and form new social contacts (Brouwer et al., 2016; Permzadian & Credé, 2016). This acculturation experience to a new academic environment is swift and often with little to no transition time, which only reinforces the stressful experience for first-generation students and may be one of the reasons first-generation students persistently have lower retention rates (Glaessgen et al., 2018).

Increasing graduation rates is a top priority as job outlooks remain strong in the future. Across all fields an estimated 72% of jobs will require some kind of education beyond high school by 2031 (George Town University, 2023). In technical fields such as the food and fiber industry, there is an expected 23,300 shortfall of new graduates expected between 2020 and 2025 which will be hired from allied fields (USDA, 2020). It is imperative to increase retention and therefore graduation rates among all students, especially those in technical areas, to meet this growing workforce demand. Moreover, as 54% of students in 2020 were identified as first-generation (Center for First-Generation Student Success, 2023), this population is particularly concerning as they are also most likely to discontinue their education (Ishitani, 2006; Kim & Bowman, 2019; Toutkoushain et al., 2018, 2021).

Unfortunately, while literature and many institutions of higher learning recognize the need for supporting first-generation students, how first-generation students' status is defined varies by the author and the institution. Jo Peralta and Klonowski's (2017) meta-analysis underscores this inconsistency, revealing that among studies providing a definition for first-generation student status, nine distinct definitions emerged.

It is our contention that how first-generation student status is defined matters, not only for uniform data collection and research but also because institutions might overlook subtle yet significant differences within the first-generation student population, leading to a one-size-fits-all approach that fails to address the nuanced needs of these students. Misidentification or under-identification can lead to a misallocation of resources exacerbating the challenges faced by the most vulnerable first-generation students (Toutkoushain et al., 2018). In fact, in academic year 2020, of the 54% first-generation students identified using the commonly accepted definition (neither parent has earned a bachelor's degree) 26% of first-generation students came from households where neither parent had any post-secondary education (Center for First-Generation Student Success, 2023).

The goal of this study was to examine the role of social capital, a student's ability to form and access supportive networks within the university setting (Malecki & Demaray, 2006; Permzadian & Credé, 2016), in key academic indicators of success within the context of parental education. Particularly, we wanted to see how alternate definitions of first-generation student status might affect a student's academic outcomes as well as their social capital as research suggests that even a small amount of college exposure in the family can influence a student's college experience, including their ability to persist and graduate (Ishitani, 2006; Kim & Bowman, 2019). When a student is categorized as first-generation because neither parent has participated in education beyond high school, it suggests one level of potential familial support and exposure to college life. In contrast, a student whose parents may have some college experience but not a completed degree could have a different level of preparedness and support.

The former may have had no exposure to the collegiate environment; while the latter may benefit from some second-hand knowledge of college life, such as knowing there might be a summer orientation program, an assigned academic advisor, and the importance of a syllabus.

The ambiguity in the definition of 'first-generation' status will have consequent impacts on retention strategies and resource allocation in post-secondary institutions. This ambiguity is not trivial; it has material consequences for the design and implementation of support programs critical to these students' success (Nguyen & Nguyen, 2018). Consequently, we investigated the implications of different definitions of first-generation college student status on retention rates and students' social capital. The goal was to provide insights that could influence policy and program development to ensure equitable and efficient allocation of resources, thus supporting the academic success and retention of this diverse student group to meet growing workforce demand.

Theoretical Framework

Social capital, as a theoretical framework, provides a robust lens through which the academic journey of first-generation college students can be examined. Rooted in the groundbreaking work of Coleman (1988), the concept of social capital encompasses the idea that networks and the norms of reciprocity and trustworthiness arising from them are valuable for the functioning of society and the individuals within it. Specifically, Coleman (1988) proposed that the importance of relationships and the resulting actions "aid in accounting for different outcomes." Unlike human capital, which results in skill development, social capital focuses on our relations with others that facilitate actions (Coleman, 1988) such as persistence. In the context of higher education, social capital offers a means to explore the resources available through social relationships that students can access to facilitate their educational success. By understanding the social networks that support or hinder first-generation students, educators and policymakers can better tailor interventions to promote equity and inclusion in the college environment.

The relevance of social capital in education, as reviewed by Dika and Singh (2002), underscores the potential of social networks to function as conduits for information, support, and opportunities that can significantly enhance student outcomes. For first-generation students, who may lack the familial academic background that typically confers knowledge about navigating post-secondary education, these networks become vital. They serve as bridges over the informational gaps that can exist between the students' familiar world and the college setting. Through the lens of social capital, these bridges can be seen not only as supplementary but as essential for leveling the playing field. In fact, Coleman (1988) found community social capital function as a buffer for lower levels of family capital in high school dropout rates.

Yosso (2005) expands the traditional understanding of social capital by introducing the notion of community cultural wealth (CCW), suggesting that students from marginalized backgrounds possess unique and valuable forms of capital. For first-generation students, particularly those from minority communities, this perspective shifts the focus from deficits to assets, recognizing that the skills, knowledge, and resilience developed through navigating cross-cultural experiences are indeed forms of capital. Through the theoretical framework of social capital, these non-dominant forms of capital are acknowledged, highlighting how they contribute to persistence and success in higher education settings.

Applying the concept of social capital in higher education suggests that institutions have a role to play in nurturing the networks that form the backbone of this capital. Engle (2007) emphasizes that first-generation students face systemic challenges that can be mitigated through deliberate institutional support. Such support might include mentoring programs, peer networks, and creating spaces where the cultural wealth of first-generation students is valued and leveraged (Beck et al., 2022; McKim et al., 2018). By fostering these connections, colleges and universities can enhance the social capital available to first-generation students, thus promoting retention.

Literature Review

The definition of first-generation students is crucial in academic literature and institutional policy, yet it remains inconsistently characterized (Jo Peralta & Klonoski, 2017; Nguyen & Nguyen, 2018). A commonly accepted operational definition identifies first-generation students as individuals whose parents have not completed a four-year degree (Collier & Morgan, 2008; Moschetti & Hudley, 2008; Petty, 2014; Shumaker & Wood, 2016; Thayer, 2000; Wohn et al., 2013). Alternative definitions broaden this to include students whose parents never attended college (Billson & Terry, 1982; Choy et al., 2000; Ishitani, 2006; Terenzini, 1996), or those whose parents stopped education after high school (Pascarella et al., 2003).

The significance of how first-generation students are defined has real implications for examining educational outcomes. Research exploring the differences among first-generation students whose parents have no post-high school education (FGS-none), those with some college experience (FGS-some), and students with at least one parent who attained a four-year degree (continuing-generation students) is limited.

Nevertheless, existing studies indicate that while the definition does not change the fact that first-generation students have lower persistence rates, the definition influences the magnitude of such educational outcomes (Ishitani, 2006; Kim & Bowman, 2019; Toutkoushain et al., 2018, 2021). For example, the National Center for Education Statistics (2018) found only 56% of FGS-none had attained a degree six years after starting post-secondary education compared to 63% of FGS-some and 74% of continuing-generation students. Further, in the first three years of post-secondary education FGS-none had the lowest rate of persistence (48%), and the highest rate of non-returners (33%) compared to FGS-some, where 53% of students persisted after three years followed by continuing-generation students where 67% of students persisted after three years (National Center for Education Statistics, 2018).

Notably, students are most likely to drop out of college between their freshman and sophomore years (Barefoot, 2004). Successful college transitions for students hinge on coping mechanisms, such as social capital, which includes a student's ability to form and access supportive networks within the university setting (Malecki & Demaray, 2006; Permzadian & Credé, 2016). Such networks, sourced from family, peers, and faculty, provide different levels of support and resources (Brouwer et al., 2016). CCW points to aspirational capital, familial capital, navigational capital and resistant capital as a way to recognize assets not traditionally recognized in higher education (Sablan, 2019; Yosso, 2005).

In theory, continuing-generation students benefit from their parents' collegiate experiences, which include nuanced college knowledge, cultural insights, and emotional guidance (Ward et al., 2012). In contrast, parents of first-generation students often lack this specific knowledge base to pass on. While FGS-some has the potential to be considered a distinct population, it remains unclear if the college exposure of their parents provides enough social

capital to aid in the transition process and how this might interact with other forms of social capital across parental education levels.

This study seeks to provide greater insight into the disparities first-generation students face in relation to academic performance and social capital, as well as discern differences between first-generation students based on their specific parental education levels. Examining the experiences of FGS-none, FGS-some, and continuing-generation students through retention and social capital measures will shed light on the challenges faced by first-generation populations in post-secondary education and their resilience in the face of systems not designed for them.

Therefore, this study was guided by the following research objectives:

1. Describe the relationship between student social capital and parental education.
2. Examine differences in types of student social capital and parental education.
3. Examine the relationship between student social capital and retention.
4. Examine the relationship between types of student social capital, specifically as it relates to family and retention.

Methods

Study Design

This study employed a cross-sectional design to investigate the relationships between social capital and retention among full-time, first-time, new-in-college students at a public, four-year institution of higher education in the Midwest. The survey collected detailed information on parental educational status allowing students to be classified as FGS-none, FGS-some and continuing-generation. Cross-sectional studies are observational studies that involve collecting data from a sample of participants at a single point in time. This type of design is appropriate for examining relationships between variables, but cannot determine cause-and-effect relationships.

Setting

The study was conducted at a public, four-year institution of higher education in the Midwest. The institution has a diverse student population, with 32% of full-time, first-time, new-in-college students identified as first-generation students in fall 2018. Unlike first-generation students at other institutions (Coffman, 2011; Terenzini, 1996; Thayer, 2000), first-generation students at this institution are generally as well prepared as continuing-generation students in terms of admission scores such as the ACT and high school class rank.

Participants

The study sample consisted of full-time, first-time, new-in-college students enrolled in the fall semester of 2018. The final sample included 343 participants, representing a response rate of 36%. The demographic composition of the sample was comparable to that of the university population, except for gender. The sample was 84% female, while only 62% of the university students identified as female.

Table 1

Selected Demographics of Full-Time, First-Time, New-in-College Students at the University and Participants Completing the Survey

	University (*n*=2,953)		Sample (*n*=343)	
	Total	Percent*	Total	Percent*
Male	1,136	38	55	16
Female	1,817	62	286	84
Hispanic or Latino	127	4%	15	4
Not Hispanic or Latino	3,001	96	323	94
American Native or Alaska Native	7	0	4	1
Asian	53	2	7	2
Black or African American	143	5	10	3
Native Hawaiian or other Pacific Islander	n/a	n/a	3	1
White or Caucasian	2,629	84%	314	92
First-generation students	951	32	139	41
Continuing-Generation	1,838	62	200	58
Retained	2,324	78.7	258	76.8
Not Retained	629	21.3	78	23.2

Note. * Some of these percentages will not add to 100% due to how the data was collected.

Instrument and Measures

For this study, a bespoke survey was designed to assess social capital and collect demographic data. The survey's items were derived from a combination of existing literature and new items specifically crafted for this study (Billson & Terry, 1982; Pascarella et al., 2004; Rahm & Moore, 2016; Shumaker & Wood, 2016; Soria & Stebleton, 2013; Terenzini, 1996; Wohn et al., 2013; Woosley & Shepler, 2011). There were 28 items focused on social capital, related to student relationships with their parents, advisor, faculty, peers and their perceived ability to interact with university resources. While CCW was not directly measured, survey items indirectly related to familial social capital and navigational capital as described by Sablan (2019) were included. Items were rated on a seven-point Likert scale, spanning from 'strongly disagree' to 'strongly agree'. The social capital score was computed by summing the points from these 28 items giving a score of +3 to items ranked as 'strongly agree' to –3 for items ranked as 'strongly

disagree' to create a social capital score. Furthermore, the survey inquired about parental education levels, ethnicity, and other demographic details.

Table 2

Descriptive Statistics of Social Capital by Type of First-generation Students

Type of student	M	SD	n	Min	Max
FGS-none	38.925	26.499	67	-38	84
FGS-some	41.667	22.587	72	-15	84
Cont. Gen	46.025	23.239	200	-38	84

Note. Scores for a students' cumulative *social capital* could range from -84 to 84.

Administration

An institutional review board approved all procedures and the instrument before we conducted the study. To assess student social capital at the beginning of a student's higher education journey, an electronic survey using Qualtrics was sent the third week of the fall semester and was closed after four weeks. All students classified by the university as first-time, new-in-college students were contacted via their university email accounts as provided by the Office of Institutional Research and invited to participate in the survey.

To ensure the validity and appropriateness of the survey, particularly in terms of format, questions, and the scales used, it underwent a review by experts in first-year program studies before its deployment. The reliability of the social capital scale was high, as indicated by a Cronbach's alpha coefficient of 0.94. Additionally, to complement the survey data, retention data, as measured by a student enrolled full-time the following year, was obtained from the students' records in the subsequent fall semester.

Data Analysis

To address the research objectives, the students' cumulative social capital score was compared across first-generation student categories using a one-way ANOVA. Afterward a principal component analysis (PCA) was conducted to identify different types of student social capital which were then compared across first-generation student categories using a one-way ANOVA. For the final two research objectives, an independent samples t-test was performed to examine the relationship between students' social capital and fall-to-fall retention.

Results

Social Capital and Parental Education

In our study, we sought to discern differences among various student categories by a students' cumulative social capital score. Regarding initial social capital, no notable statistical difference emerged among student categories.

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Table 3

One-Way Analysis of Variance of Social Capital by Type of Student

Source	df	SS	MS	F	p
Between Groups	2	2906.203	1453.102	2.569	0.078
Within Groups	336	1900041.502	565.6		
Total	338	192947.705			

Types of Social Capital

To further investigate, Principal Component Analysis (PCA) was conducted on the 28-item social capital scale utilizing the Statistical Package for the Social Sciences (SPSS). Preliminary evaluation of data appropriateness revealed substantial correlations, with many coefficients in the matrix exceeding 0.3. The Kaiser-Meyer-Olkin (KMO) measure yielded a value of 0.915, indicating a high suitability for initial factor analysis. Additionally, Bartlett's Test of Sphericity was significant ($p < .000$) further affirming the data's adequacy for PCA.

The PCA, executed on the initial weighted social capital scale, identified five components with eigenvalues exceeding one. These components accounted for 39.96%, 12.51%, 7.94%, 5.55%, and 4.91% of the total variance, respectively. An examination of the scree plot revealed a distinct demarcation following the fifth component, warranting their retention for subsequent analysis. Subsequent Varimax rotation was applied, and the results of the rotated solution are presented in Table 4. The five components demonstrated robust loadings, collectively explaining 70.86% of the variance. Individually, these components contributed 19.06%, 16.23%, 14.283%, 10.92%, and 10.36% to the variance, in that order.

The PCA results support the categorization of social capital into distinct types. The derived components clustered into five primary categories: (a) advisor social capital, (b) faculty social capital, (c) institutional social capital, (d) family social capital, and (e) peer social capital. Notably, the advisor and faculty social capital components accounted for the most significant proportions of variance, at 19.06% and 16.89%, respectively.

One-way ANOVAs were conducted for each type of social capital, delineated by first-generation student status. This analysis revealed no significant differences in institutional, advisor, and faculty social capital across different first-generation student categories. However, a significant variance was observed in peer social capital. FGS-none students demonstrated a lower mean score (M = 10.40, SD = 8.17) compared to their continuing-generation counterparts (M = 13.12, SD = 6.28), yielding statistical significance [$F (2, 334) = 9.607$, $p = .011$)] and a small effect size of 0.027. Additionally, family social capital also exhibited significant differences [$F (2, 334) = 9.607$, $p = .000$)]. However, Levene's test for homogeneity was violated and a Kruskal-Wallis test was administered. The results indicated no significant variation in initial family social capital between FGS-none and FGS-some groups, yet both were significantly lower than continuing-generation students, with p-values of $< .006$ and $< .015$, respectively.

Table 4

Varimax Rotated Component Matrix for Initial Social Capital Scale

Item	Components				
	Advisor	Faculty	Peer	Institutional	Family
Advisor listens	0.912	-	-	-	-
Important to advisor	0.892	-	-	-	-
Matter to advisor	0.89	-	-	-	-
Advisor helps explain	0.886	-	-	-	-
Advisor gives ideas	0.876	-	-	-	-
Comfortable with advisor	0.863	-	-	-	-
Matter to faculty	-	0.861	-	-	-
Faculty listen	-	0.845	-	-	-
Important to faculty	-	0.827	-	-	-
Faculty help with homework	-	0.75	-	-	-
Faculty helps explain	-	0.633	-	-	-
Comfortable with faculty	-	0.573	-	0.398	-
Important to instructor	-	0.527	-	-	-
Friends listen	-	-	0.777	-	-
Made new friend	-	-	0.758	-	-
Friends give ideas	-	-	0.722	-	-
Comfortable talking with classmates	-	-	0.709	-	-
Classmates will help with class	-	-	0.623	-	-
Classmates will help with homework	-	-	0.591	-	0.338
Joined new club	-	-	0.547	-	-
Know about financial services	-	-	-	0.826	-
Know about university services	-	-	-	0.733	-
Can use financial services	-	0.346	-	0.733	-
Can use university services	-	-	0.303	0.733	-
Parents proud	-	-	-	-	0.836
Parents give ideas	-	-	-	-	0.799
Family listens	-	-	0.315	-	0.779
Parents support college	-	-	-	-	0.713

Note. Factor loadings less than .30 are not reported.

Table 5

Descriptive Statistics and One-Way Analysis of Variance of Type of Social Capital by Type of First-generation Students

Social capital	Type of student	M	Sd	N	Df	F	P
Family*	FGS-none	7.836	4.968	67	2	9.607	0.000
	FGS-some	8.944	3.460	71	334		
	Cont. Gen	9.920	2.766	199	336		
Peer*	FGS-none	10.403	8.174	67	2	4.558	0.011
	FGS-some	11.592	6.310	71	334		
	Cont. Gen	13.121	6.778	199	336		
Advisor	FGS-none	7.239	7.620	67	2	0.656	0.520
	FGS-some	7.775	8.126	71	328		
	Cont. Gen	8.497	8.376	193	330		
Faculty	FGS-none	8.149	9.083	67	2	0.049	0.952
	FGS-some	8.254	7.173	71	331		
	Cont. Gen	8.480	8.136	196	333		
Institution	FGS-none	5.299	4.991	67	2	1.113	0.330
	FGS-some	5.222	4.706	72	336		
	Cont. Gen	6.060	4.888	200	338		

Note. * After post hoc testing, significant differences between FSG-none and Cont.Gen. were found at $p < .001$

Social Capital and Retention

An independent-samples *t*-test was performed to compare students' cumulative social capital scores for retained and not retained students. There was a significant difference in cumulative social capital scores for retained students ($M = 45.0382$, $SD = 22.74224$) and not retained students ($M = 38.7179$, $SD = 26.97276$; $t (338) = 2.061$, $p = .02$, two-tailed). The magnitude of the differences in the means (means difference =6.32022, 95% CI [.28881, 12.35163]) was small (eta squared .0124).

Family Social Capital and Retention

An independent-samples *t*-test was performed to compare students' family social capital scores for retained and not retained students. There was a significant difference in students' family social capital scores for retained students ($M = 9.6705$, $SD = 3.07575$) and not retained students ($M = 8.0779$, $SD = 4.60196$; $t(336) = 1.59258$, $p = .005$, two-tailed). The magnitude of the differences in the means (means difference = 1.59258, 95% CI [.48522, 2.69993]) was small (eta squared .0236).

Table 6

Independent Samples t-test Comparing Retained and Not Retained Students by Students' Family Social Capital

Category	*M*	*SD*	*n*	*Min*	*Max*
Retained	9.6705	3.07575	261	-7	12
Not Retained	8.0779	4.60196	77	-12	12

Note. Scores for a student's family social capital could range from -12 to 12.

Conclusion and Discussion

Defining First-Generation Student Status

This study examined the relationships between first-generation student definitions, social capital and retention. Looking at social capital revealed complex dynamics. The absence of significant differences in cumulative, institutional, advisor, and faculty social capital across first-generation student categories suggests these aspects of social capital are not heavily influenced by first-generation student status. However, the significant differences in family social capital for FGS-none and FGS-some indicate these students may face challenges in these areas. Additionally, peer social capital was notably lower for FGS-none compared to continuing-generation students.

The lack of significant differences between FGS-none and FGS-some is also interesting. It appears FGS-some find themselves in a veritable gray area, where they are neither more alike to FGS-none or continuing-generation students. Of note, similar to other studies, combining FGS-none and FGS-some into a single first-generation student population had little effect on the results (Ishitani, 2006; Kim & Bowman, 2019; Toutkoushain et al., 2018, 2021). Using a single first-generation student category, we analyzed student cumulative social capital scores, and types of social capital compared to continuing-generation students with similar results further supporting operationally treating FGS-none and FGS-some as similar populations. However, the findings from this study contribute to a deeper understanding of the multifaceted challenges faced by first-generation college students, particularly FGS-none and suggest that future research should continue to examine both populations in order to discern potential differences.

Lower Family Social Capital and its Impacts

A critical finding of this study is the significantly lower overall family social capital among FGS-none and FGS-some compared to continuing-generation students. A student's family social capital, particularly in terms of parents acting as mentors and guides in navigating college culture, plays a vital role in the student's college experience (Evert, 2015; Shumaker & Wood, 2016). First-generation students often lack this parental guidance in college-related matters, such as financial aid applications and acculturation to college life (Glaessgen et al., 2018). This absence of family support can create a gap in pre-college preparation and adjustment, leading to potential disadvantages in academic and social integration into college. Further, as found in this study, lower levels of family social capital were associated with significantly lower retention rates. While the effect size was small, the impact of family social

capital likely shows up in other areas, which might help mitigate factors leading to departures from the university.

The Role of Parents in Providing Support

Parents not only help orient students to college culture but also provide ongoing support in problem solving and coaching (Collier & Morgan, 2008). Beattie and Thiele (2016) emphasized the mitigating role of pre-college family social capital, especially in large class settings. This support includes encouraging engagement with faculty and building effective peer networks. However, the perceived lack of value for higher education pursuits by parents, as reflected in our survey, can further diminish family social capital for first-generation students (Billson & Terry, 1982; Coleman, 1988; Terenzini, 1996). It is important to note, though, that this does not necessarily imply poor relationships within the family, but rather a lower level of specific support theorized to ease the college transition and underscores the need for comprehensive support strategies provided by the university. Moreover, Sablan (2019) highlighted the role of familial capital in CCW defining it as "connections to and knowledge of family and kinship networks". In this study, questions geared towards measuring family social capital were limited to a student's parent, a notable limitation as this may mask support from extended family networks.

Shifting Social Capital Dynamics in College

As Brouwer et al. (2016) contended, the importance of family social capital tends to diminish with the transition to college, with other forms of social capital like peer and faculty relationships gaining prominence. This shift can be beneficial for first-generation students, particularly if family social capital is initially low as was the case in this study. Opportunities to build peer and faculty relationships are crucial, as these networks can help navigate the complexities of higher education (Glaessgen et al., 2018; Soria & Roberts, 2021). Further, as found in this study, higher levels of social capital are linked to retention. Students' ability to create meaningful social networks may be a protective factor in persistence, particularly regarding close friends and faculty (Austin et al., 2018). Unfortunately for first-generation students this social capital needs to be further built once they arrive at college.

Concerns with Peer Social Capital

A concerning aspect of our findings is the significantly lower peer social capital among FGS-none. This shortfall suggests these students face challenges not just in the family domain but also in forming supportive peer relationships, a crucial element for a sense of belonging and success in the college environment. Creating a sense of community among students has been shown to increase self-efficacy (McKim et al., 2018) which could also lead to improved persistence rates. There are number of possible explanations for lower peer social capital such as having less time available to socialize as first-generation students tend to work more hours than continuing-generation students (Billson & Terry, 1982; Bui, 2002; Kezar et al., 2015; Thayer; 2000). Further first-generation status, like socio-economic status, is unseen and therefore students may have a harder time finding peers from similar backgrounds (Warnock & Hurst,

2016). How a student is able to engage is ultimately influenced by a number of dimensions and complex interactions at the student, faculty and institutional level (Nguyen & Nguyen, 2018).

Limitations

As with any research, there are several limitations that must be noted. First, with the methodology utilized it is not possible to consider additional factors such as race, socioeconomic status and gender, among others. These features of intersectionality have been shown to matter in student persistence. As pointed out by Nguyen and Nguyen (2018) student experiences and outcomes are a product of multiple factors and creating a "false binary" limits our understanding of these complex interactions. Further, while the sample resembled the campus community under study, it does not necessarily mirror first-generation students limiting generalizability (Nguyen & Nguyen, 2018; Sablan, 2019). Additionally, while there were elements of the survey that indirectly measured aspects of CCW, we were not able to distinguish CCW from our operationalization of student social capital limiting our ability to view the role of these assets on retention. This unfortunately may lead some to view these students as deficit when in reality the survey as delivered did not adequately highlight students' potential resilience in the face of adversity and how this skill enables them to succeed.

Implications for Policy and Practice

1. Colleges and universities should continue to treat first-generation students as a single population whereas researchers should collect information separating first-generation students into FGS-none and FGS-some at a minimum.

   The literature has used a variety of definitions to examine a multitude of outcomes for first-generation students (Jo Peralta & Klonowski, 2017). The overwhelming consensus is that first-generation students are less likely to persist to graduation (Ishitani, 2006; Kim & Bowman, 2019; Toutkoushain et al., 2018, 2021). Therefore, a less restrictive definition of first-generation student status should be used by higher education institutions to catch all at-risk students. Using a broader definition means resources will need to be sufficient for more students. Further, the current information collected by college admissions is appropriate for the time being.

   However, researchers should collect information to separate FGS-none and FGS-some to further explore potential differences. This will provide additional evidence to ensure first-generation student status is grounded in research rather than convenience. Kim and Bowman (2019) point out researchers cannot assume to know how their results would have varied if they had defined first-generation students differently. Instead, research must ensure "findings are robust" across definitions and must be explicit about how they define first-generation student status (Toutkoushain et al., 2021). Some studies have called for the use of additional categories such as parents completing an associate's degree but incorporating such sensitivity may not be feasible depending on sample size and context (Kim & Bowman, 2019). Regardless, researchers should clearly define what constitutes a 'first-generation student' and aim for uniformity.

2. Colleges and universities should imbed practices in courses, particularly freshmen-level courses, which can increase social capital particularly with faculty and peers.

   During the transition to college, students must manage not only the academic transition but build new social networks (Brouwer et al., 2016; Permzadian & Credé, 2016). Instructors teaching freshmen-level courses are located on the frontline since students spend most of their

time in classes (Fowler & Boylan, 2010; Morales, 2014). Adopting policies and strategies sensitive to first-generation students could have profound effects. Such strategies should include explicitly stating expectations for coursework, class participation, and office hours (Collier & Morgan, 2008) as well as being available before and after class to answer questions (Kezar et al., 2015) or even occasionally ending class earlier to allow for faculty/student interactions. This may help create social networks to supplement parental knowledge.

Further to increase peer social capital, faculty can incorporate assignments to connect students with peers and institutional resources. Embedding these practices in classes ensures first-generation students are duly burdened by additional time commitments or an increased cost beyond what is required in any course. Building these forms of social capital may allow students to supplement the knowledge their parents are not able to pass on.

There are factors outside of social capital that will ultimately impact persistence. Unsurprisingly, a lack of finances has been found to negatively impact first-generation persistence in numerous studies (Bui, 2002; Thayer, 2000). Indeed, a lack of money leads many first-generation students to work more hours, leaving them less time to engage on campus (Billson & Terry, 1982; Pascarella et al., 2003; Warnock & Hurst, 2016; Williams & Ferrari, 2015), potentially exacerbated by not qualifying for student loans and/or being competitive for academic merit scholarships (Ward et al., 2012). While a student's financial situation is outside of higher education's control, strategies that increase social capital can be practically incorporated and may provide support to aid in persistence.

These insights emphasize the necessity for post-secondary institutions to develop targeted strategies that address both academic and social dimensions. Academic support tailored to first-generation students, particularly FGS-none, is vital to mitigate retention disparities. Equally important are initiatives that foster peer and faculty social capital, creating inclusive environments that facilitate relationship-building and a sense of belonging. This is especially critical in the first year as students are most at risk of dropping out (Barefoot, 2004). Recognizing the shifting dynamics of social capital and addressing these gaps through university policies and programs can significantly contribute to the success and retention of first-generation students, ensuring a more equitable higher education landscape.

As universities continue to welcome first-generation students, it becomes crucial to support these students in reaching their full potential. First-generation students bring diverse perspectives and experiences that enrich campus life. By recognizing their strengths, institutions can empower first-generation students to thrive academically and socially. When universities foster inclusive environments where all students feel they belong, it not only helps retain first-generation students but uplifts the entire campus community (Thayer, 2000). Supporting first-generation students is an ethical obligation for higher education. With the right resources and support, these students can gain access to life-changing educational opportunities (Schwartz et al., 2018). Their success demonstrates the power of higher education to create paths for economic mobility and transform families and communities.

Future Research

There are several areas for future research. First, incorporating mixed methodologies and collecting additional data could help develop a better understanding of the role of intersectionality as it relates to building social capital within a university setting (Nguyen &

Nguyen, 2018). Examining student and faculty characteristics could provide a more robust understanding of student experiences which are likely influenced by students' past experiences and systemic inequalities which must be considered (Nguyen & Nguyen, 2018). Additionally, future surveys should more explicitly consider the role of CCW in student success. Nguyen & Nguyen (2018) and Sablan (2019) call for more thorough data collection and analysis in order to have a deeper understanding of first-generation students' experiences in order to make real, lasting change.

Further, while we have offered suggestions to grow social capital, these should be empirically tested ideally with factors such as race, gender, and socioeconomic status taken into consideration. Finally, universities employ a number of initiatives that create social capital as a byproduct (Coleman, 1988) such as orientation sessions or transitional courses. Future research could examine how social capital changes over time and in light of such strategies see if there are impacts on student outcomes as well as effectiveness from a student perspective.

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