

Strengthening Baltimore's Knowledge-Based Community:

An Exploration of Factors that Influence Retention Efforts of College Graduates in the
Baltimore Region

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Introduction

Baltimore, Maryland

Famous in the Mid-Atlantic region for its crab cakes, Old Bay seasoning, quirky arts scene, and picturesque Inner Harbor, Baltimore, Maryland, is perhaps more widely known as the setting for the television show “The Wire.” The David Simon series, which aired in the early 2000s, explored the complexities of the drug trade, local policing and government, K-12 education, and the local news media. Like many large cities, Baltimore (pop. 576,498) experiences challenges due to a complex set of factors including systemic and institutional racism, violence and safety concerns, and economic and environmental disparities.

Baltimore has a long, rich history and has played an important part in significant movements in the formation of our nation. Baltimore has been a seat of innovation since its founding in 1720. From designing and building the ships used during the Revolutionary War to opening Johns Hopkins University (JHU) as the first research-oriented university in the United States in 1876, Baltimoreans have shaped history. Baltimore’s cultural history is just as rich and diverse. As a port city, immigrants from Poland, Ireland, Lithuania, Germany, and Italy settled in Baltimore to work at steel factories, on the Baltimore & Ohio (B&O) Railroad, and in the fishing and canning industry (*The History of Baltimore*, n.d.). Baltimore is also home to many famous Blacks and African Americans. In fact, in 1820, Baltimore had the largest population of Blacks and African Americans in the U.S. Some notable African Americans born in Baltimore include Frederick Douglass (1817-1895), Thurgood Marshall (1908-1993), Elijah Cummings (1951-2019), and Lillie May Carroll Jackson (1889-1975), who was known as the “the mother of the civil rights movement.” Perhaps not surprisingly, Baltimore was also on the cutting edge of

the Civil Rights Movement in the U.S., desegregating in many parts of the growing city much earlier than in other parts of the country.

Baltimore City is also home to a host of institutions of higher education (IHEs), including three community colleges, two public universities, two public Historically Black Colleges/Universities (HBCUs), and four private institutions. Two additional public universities and one additional community college are located just outside the city limits in Baltimore County.

Baltimore Collegetown Network (BCN)

Founded in the 1990s as a grassroots organization, the Baltimore Collegetown Network (BCN) is a 501c3 non-profit membership consortium that brings local IHEs together to affect positive changes in the city of Baltimore. BCN now consists of 13 member-institutions and serves 120,000 students in the region. A governing board provides guidance and support to the BCN staff. The board is made up of one representative from each member school, representatives from local non-profit organizations that work to promote the city, and representatives from city and county governments. A team of four full-time professional staff members implement organizational programs, plan engagement and fellowship programs for students, facilitate communities of practice (CoPs) for institutional staff, manage an online listing of local internships with area businesses and nonprofits, and run a shuttle program in the city between participating member schools. BCN's overall mission is to "attract, engage, and retain" students in Baltimore and the surrounding region.

Attract

To assist member institutions with recruitment, BCN coordinates with admissions offices to develop programs designed to introduce high school guidance counselors to the city. The most

successful program, the Baltimore Collegetown Gown Tour, draws high school guidance counselors from across the U.S. to visit and tour BCN member-institutions and offers opportunities for the counselors to connect with faculty, staff, and students. BCN staff estimates that from its founding in 2017 to 2021 the Tour “has brought 773 students to enroll at BCN institutions, contributing \$52 million in gross tuition dollars” (Neugeboren, 2021).

Engage

Once students are enrolled, BCN provides opportunities for student engagement in academic, business, and social communities within Baltimore. The Baltimore Collegetown Fellowship and Baltimore Underground programs engage students from member-institutions in the city and provide a positive and holistic Baltimore City experience. The Baltimore Collegetown Fellowship is a civic engagement program in which students develop leadership skills and learn about entrepreneurship and social change models. The year-long program connects college students from member institutions and facilitates work in teams to affect social change in the city. Baltimore Underground is an annual four-day, immersive program in which 30 students from member-institutions come together to learn about a specific community issue, develop an appreciation for Baltimore and the perspectives of others, engage in meaningful ways with the community, and learn about the reciprocal nature of service.

Retain

To support their efforts to retain students in the Baltimore region, BCN implemented strategies to promote student-community engagement, including programs designed to introduce students to job opportunities in the city. Additionally, during Industry Days, staff facilitate networking opportunities among student peers from other institutions and with local professionals. These small, casual, low-stress events provide a way for students to learn about

Baltimore city-specific industries and the jobs and internships available within them. Previous Industry Days have focused on areas of government and policy, emerging technologies, creative entrepreneurship, and finance. BCN also promotes connections with the Career Centers at member-institutions via their website, job boards, and the BCN newsletter.

Stakeholders

Baltimore Collegetown Network stakeholders are divided into two categories: direct and indirect. Direct stakeholders include the member institutions and their educational administrators, staff members, faculty members, and students, as well as city and county government agencies. Indirect stakeholders include city and county residents as well as employers in the greater Baltimore area.

Problem of Practice

BCN views its efforts to retain talented, highly educated students as an integral component in its contribution to the city's overall economic health. In the early 2000s, BCN efforts seemed to be having a significant impact on the retention rates of students remaining in the Baltimore area, which grew from 19% in 2003 to 32% in 2009 (Johansson, 2011). While this early success is certainly laudable, the 2020 census data illustrate that Baltimore continues to experience a decline in population growth that began in the late-1960s. More specifically, census data from 2022 indicate that people between the ages of 22 and 29 currently account for only 6% of the city population (Grid View: Table B01001 - Census Reporter, 2022). This low representation of the typical post-college graduate age range led BCN to question what might attract students to remain and work in Baltimore after graduation.

According to the former director of the Baltimore Neighborhood Indicators Alliance at the University of Baltimore, "Baltimore actually stands alone among all cities in the East Coast

for population declines. Among all cities greater than 400,000 in the U.S. in 2010, only four out of the 40+ in that category lost any population at all.” (Iyer, 2022, para 2). Since 2010, Baltimore’s population has declined 7.2% (USAFacts, 2022). Comparable urban communities also experienced population losses as reported in the 2020 census report, but these are largely attributed to the COVID-19 pandemic (Frey, 2022). Pandemic notwithstanding, in contrast to Baltimore’s steady population decline over time, cities such as Philadelphia and Boston have experienced population growth and economic revitalization in the last decade. Population decline is a serious problem and can lead to a host of problems, including reductions in federal and state funding that is often population-dependent, vacant houses and neighborhood blight, lost tax revenue, and reduced sway in the state legislature as suburban areas outpace Baltimore in increasing population (Fry, 2021; Manville & Kuhlmann, 2018).

More successful efforts to retain college graduates in Baltimore after graduation to live and work could impact the city in important and significant ways. Young, educated workers who remain in the cities where they attended college can contribute to a rise in “human capital,” which scholars define as an amalgamation of the knowledge, skills, and abilities that individuals use in their work and engagement with their communities (Able & Dietz, 2012; Kazakis & Faggian, 2016; O’Neill & Bagchi-Sen, 2022; Winters, 2011). Increased human capital can also lead to economic growth (Fleischhauer, 2007; Kazakis & Faggian, 2016).

Literature Review

Successful efforts to retain college graduates in Baltimore for life and work after graduation could impact the city in important and significant ways. Young, educated workers who remain in the cities where they attended college can contribute to a rise in “human capital.” Given the low representation of young professionals in Baltimore City (Census

Reporter, 2022), an increase in recent graduates remaining in Baltimore would also create an increase in human capital.

Our study used migration, human capital, and quality of life (QoL) theories to guide project design to evaluate BCN's questions regarding the retention of students in Baltimore post-graduation. The review of existing literature focused on responses to urban population decline as well as economic revitalization, workforce development (the ways in which cities can attract talent), the relationships between urban institutions of higher education and their local communities and economies, and workers' motivations to engage and continue to engage in the workforce.

Town Gown Relationships: higher education and urban communities

“Town Gown” relationships, or those between IHEs and the communities in which they are situated, are often filled with tension. Often these relationships center on how the ties benefit students in their academic and professional growth. This often leads to tension as attempts by IHEs to build relationships with the broader community have failed to account for the needs of community stakeholders and their perspectives (Bruning, McGrew, & Cooper, 2006). The term “town-gown” stems from the 12th and 13th centuries when scholars wore academic regalia (gowns) to fend off the cold in drafty, unheated buildings. While wearing regalia is now reserved for high level university events such as convocation and commencement, the term “town and gown” is now used to describe the relationship between those associated with the residents/citizens of the local community (town) and the university (gown).

Over half of all IHEs across the U.S. are in urban areas and these IHEs impact their local communities in a myriad of ways (Ehlenz, 2016). Colleges and universities draw talented students and highly educated faculty and staff to their communities, increasing human capital—

individuals and their knowledge, skills, abilities, and experience. They also provide valuable fixed and physical capital in the form of campus buildings and green spaces. Additionally, IHEs often contribute to improvements in the neighborhoods and cities in which they operate. Engaging local communities, businesses, industry, and government agencies as stakeholders and facilitating positive town-gown relationships is of considerable importance given these considerations.

A review of the literature on urban town-gown relationships and local economies provides evidence that IHEs have significant impacts on these economies. IHEs produce educated, skilled laborers for the urban workforce, create jobs, contribute tax dollars, and host events that draw visitors to the area, further boosting the economy (Abel & Dietz, 2012; Kazakis & Faggian, 2016; O’Neill & Bagchi-Sen, 2022; Winters, 2011).

While there is ample research that demonstrates that IHEs are effectively producing human capital for their local economies, there is little research that addresses students’ decision-making process when transitioning from “student” on campus to “professional” in the city. One way to understand the dynamic relationship between these two interconnected spheres is to look at them through the lens of Esmailpoorarabi’s, Yigitcanlar’s, and Guaralda’s (2016) scales framework, established to communicate the ways that various “scales” can influence one another to enhance and improve “Knowledge Based Urban Development” (KBUD).

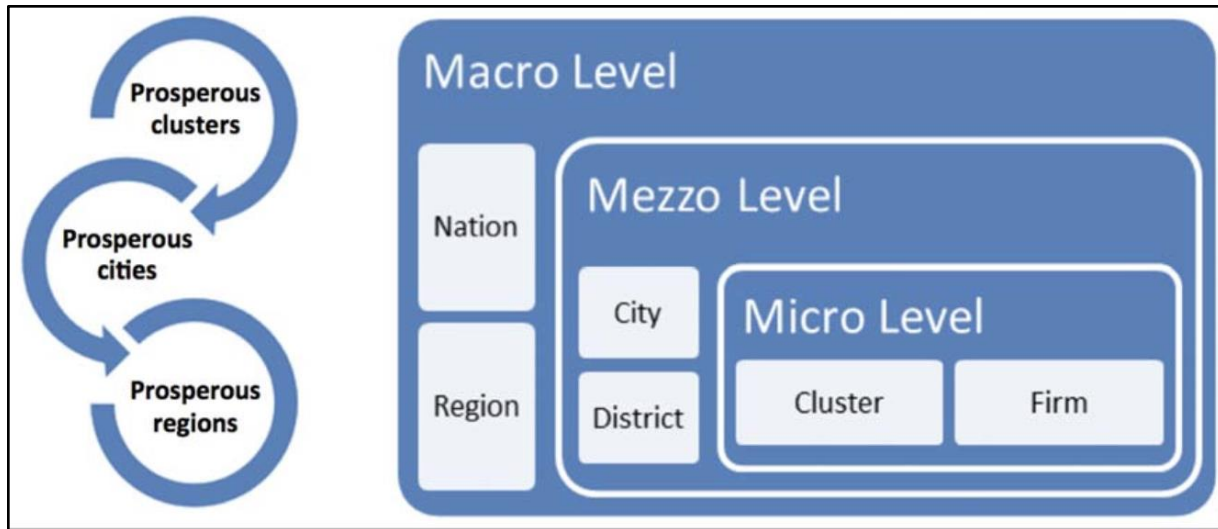


Figure 1. Connections between different geographic scales concerning urban competitiveness (Esmailpoorarabi et al., 2016).

Esmailpoorarabi et al. (2016) write about the various qualities that are specific to three scaled levels (Figure 1). The micro level includes the “cluster” which, for the purposes of this study, we consider the campus or campus neighborhood. The mezzo level includes the city, and the macro level includes the region more broadly. While the authors acknowledge the interconnectedness between cluster, city, and regional scales, they did observe differences in how subjects defined and perceived quality-of-life at each level.

Based on this model, we assume that during their time in college and while housed in the campus community, students are likely to identify most with the campus “cluster” level, counting on their IHE to provide necessary resources and services. As graduation approaches, their focus naturally shifts from the campus micro level to the city mezzo level. As college seniors begin to make post-graduation plans, they begin to think about the quality of Baltimore, less as a place to study and learn, and more as a place to work and live. While students may still prioritize some factors from the micro level, such as a sense of community and safety, they may begin to address their perceptions about Baltimore and the surrounding region (mezzo and macro

levels) by including considerations about safety, infrastructure, cost of living, job opportunities, and salaries.

Perception of the urban environment is an important element in student decision-making about where to settle post-graduation. If, as Bruning, McGrew, and Cooper (2006) argue, positive university-community engagement can improve community perceptions of the institution, we can infer that stronger town-gown relationships may also positively influence graduating students' estimation of the quality of life beyond campus in the city of Baltimore. Understanding the experiences and perceptions that students and alumni have about these campus and city levels that exist and how they merge within one another in Baltimore may provide valuable insight for how BCN and city representatives can shift strategies when working to attract students to remain in the city after graduation.

Economic Growth and Human Capital

The World Bank (2022) defines economic growth as an increase in the income and expenditures of an economy's residents and in the volume of its production. While we often think about economic growth from a national perspective, regions and cities also experience economic growth and contraction. Economic contraction may occur when urban populations decline due to migration, death, and lower birth rates (Frey, 2022; Pallagst, 2010). Declines in urban populations can lead to vacant housing, a dip in the effectiveness of K-12 education, and rising costs of living related to tax burdens shared by fewer people (Manville & Kuhlmann, 2018).

Cities benefit from economic growth, stimulated through many factors including an increase in human capital and education (Acemoglu, 2012; Benhabib & Spiegel, 1994; Fleischhauer, 2007; Pelinescu, 2014; Wilson & Briscoe, 2004). Colleges and universities, by

their very nature as IHEs, build human capital and contribute to economic growth through the education of the population and the attraction of talent (Abel & Dietz, 2012, 2014). Abel and Dietz (2014) discuss how educational attainment increases human capital; specifically related to innovation and entrepreneurship. They also discuss how higher education's research efforts draw human capital to a region or city. These effects are especially important to our consideration of how BCN and its member institutions might contribute to economic growth.

Changing Urban Approaches to Attract Talent and Impact Population Growth

Many cities that face population decline make efforts to spur economic growth. Talent, or human capital, drives innovation, which then drives economic growth. The single most important economic performance “input” is a smart and talented workforce (Johansson, 2011). Johansson (2011) highlights Maryland's Baltimore CollegeTown Network as an example of a successful strategy to create community engagement that contributed to a growth in student retention rates from 19% in 2003 to 31.5% in 2009. Despite this positive impact on retention, there is an additional factor that Johansson (2011) witnessed in other cities like Detroit, which challenged themselves to consider alternate methods of growth. City officials in Detroit understood the need to extend recruiting efforts beyond local schools and thus included initiatives designed to attract national and international talent to sustain and strengthen population and economic growth.

Esmailpoorarabi et al. (2016) also provide an overview of changing recruitment tactics. Cities shifted their focus to “knowledge-based urban development,” or KBUD. This idea, in more recent times, focused on building knowledge economies rather than industrial or service-based economies in cities. Knowledge economies benefit from innovative, creative, and educated workers. Abel and Dietz (2014) demonstrated that cities' economic growth is caused,

in part, by the retention of college graduates who remain in their adopted city to work. They also point out that colleges and universities contribute to increases in human capital by drawing talented faculty and staff to their communities.

Review of Factors Impacting Job Searches of College Graduates

When students consider where to look for jobs after graduation, the type of institution a student attends may be a factor. Research found that students who attend community college are more likely to be drawn from the local community, while students who attend private, elite universities are more likely to migrate to those campuses from further away (Bloomfield et al., 2018; Dougherty et al., 2018; Ehrke et al., 2022; Ishitani, 2011; O’Neill & Bagchi-Sen, 2022; Winters, 2011). Institutional type also has a significant impact on where students go after they graduate. Students who attend elite, private universities are more likely to settle in urban areas but are also more likely to leave the city in which they lived during college. Students who attend community college and public, state-system schools are more likely to remain in the local area, particularly if that area is urban. One national study showed that students who attended public, state-system universities in Baltimore were more likely to remain in Baltimore while students who attended JHU, identified in the study as an “elite” school, were more likely to move to other urban areas outside the Baltimore region (Dougherty et al., 2018).

Cai and Wang’s (2022) research on college students’ career planning shows that while students do use career services offices, they report low rates of satisfaction with those services and, as a result, they often turn to relatives, parents and friends for support in the job search. Barhate and Dirani (2022) also noted the importance of family members in approving and influencing career decisions. These findings illustrate that students who lack local, social network ties and ties to the professional community in an adopted community need more support

from IHEs for long-term career planning and mentorship (Cai & Wang, 2022). Additionally, Barhate and Dirani (2022) found that Gen Z workers often think of their closest co-workers and mentors as family and often select a successful, respected person to support them in the job search process, particularly with regard to networking. These findings demonstrate the power that a professor or internship supervisor may have in influencing graduating seniors as they navigate the job search. This is most important for those students who lack familial or social ties in their adopted city.

Finally, Abel and Dietz (2014) found that when college graduates find themselves in a “thick job market,” or one in which job seekers can find desirable employment quickly, they are more likely to secure a job related to their college major. Urban areas are more likely to have an agglomeration, or collection, of high-quality job opportunities in a variety of fields which leads to better matching. When a city combines the benefits of a thick job market with an agglomeration of high-quality urban amenities, that city may be able to draw more human capital, thus contributing to its overall economic growth and development (Bloomfield et al., 2018; Ehrke et al., 2022; Frenkel et al., 2013; Ishitani, 2011; O’Neill & Bagchi-Sen, 2022; Winters, 2011).

Framework

Grounded in three theoretical frameworks, this improvement study aims to provide the staff at the Baltimore Collegetown Network and their 13 member-institutions with data and analysis about the experiences and attitudes of current graduating students and recent alumni related to the city of Baltimore.

Migration Theory

The reasons individuals migrate from one location to another vary. Scholars and researchers created several theories and models to explain these reasons. Functionalist migration theory posits that migration has positive effects on community productivity and well-being (de Hass, 2021). Neo-classical migration theory (Harris & Todaro 1970; Todaro, 1969) highlight a “push-pull model” in which individuals make decisions to migrate because of negative influences that either push them out of their home communities or pull them toward more stable or financially promising new communities (de Hass, 2021). “Push-pull and neo-classical models...basically assume that people will migrate if the benefits of migration exceed the costs.” (de Hass, 2021, p. 14). We used immigration theory (de Hass, 2021) and the concept of migration agency, or the capability of a person to choose where and when to migrate, as a way to frame the movement of students to Baltimore and to consider the factors current seniors and recent alumni chose to either stay or leave the Baltimore region. As de Hass (2021, p.17) writes, “Migration *aspirations* are a function of people’s general life aspirations and perceived geographical opportunity structures” and “Migration *capabilities* are contingent on positive (‘freedom to’) and negative (‘freedom from’) liberties.”

Theories of Quality of Urban Life (QOUL)

To frame our understanding of the factors that influence BCN student decisions to remain in Baltimore or to emigrate post-graduation, we explored QoL theories, including those derived from Maslow’s hierarchy of human needs (human development) as well as quality of urban life theories. Sirgy (1986) defines QoL “in terms of the hierarchical *need satisfaction level* of most of the members of a given society” (p. 329). He developed the model in Figure 2 to illustrate his proposition that QoL goals are connected to human needs from “lower-order biological and safety-related goals to higher-order psychological goals” (Sirgy, 1986, p. 331).

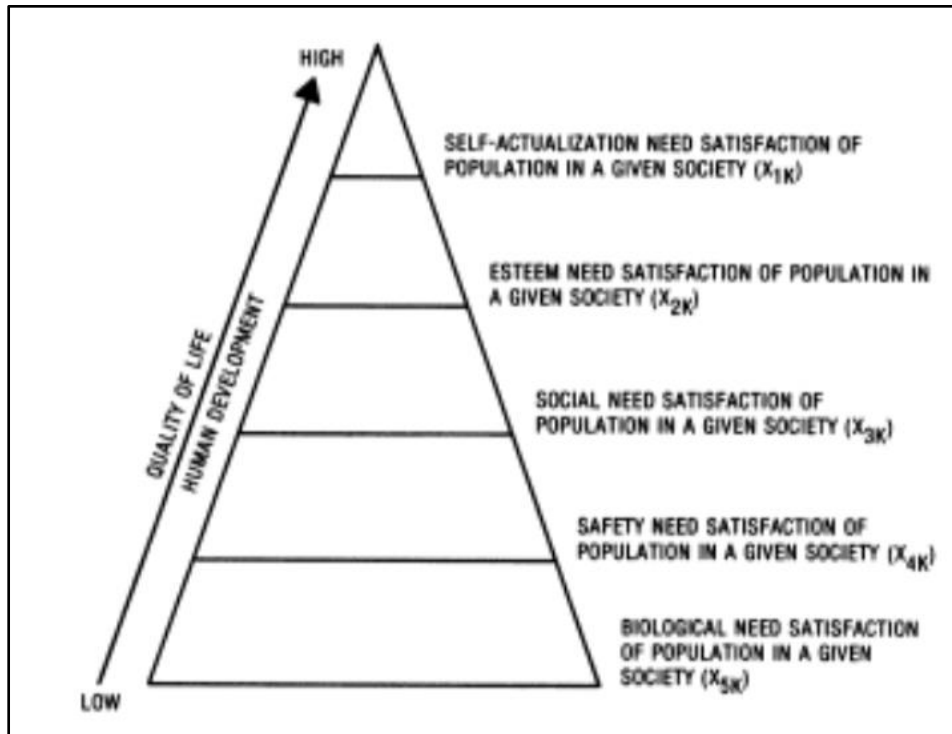


Figure 2. A Human Developmental Perspective of Quality of Life

Sirgy (1986) also describes the structures, or institutions, that support or fulfill these needs. Students attending IHEs, for example, have their needs met predominantly by their college or university. Those in the workforce, however, look to local government and the private sector to meet their needs. No matter which institution or agency provides resources and services to fulfill needs, the lower-level biological and safety needs must be met before social, esteem, and self-actualization needs can be met.

Quality of Urban Life (QOUL) theories and models explore the QoL in urban settings. Campbell and other theorists have suggested that individuals' perceptions of urban QoL is connected to their feelings of wellbeing, satisfaction, and happiness (Campbell et al., 1976, as cited in Marans, 2011). Marans (2011) expanded on Campbell's work to propose that perceptions of place and environment also impact their feelings about urban quality of life. Interestingly, studies of QOUL have demonstrated that the relationship of QoL and urban

environments is complex and that satisfaction with living in urban environments is influenced by personal characteristics (Marans & Stimson, 2011).

Human Capital Theory

Human capital theory both intersects and provides a common thread through migration theory and QOUL theory and contributes to our understanding of how higher education impacts local economies. Human capital is defined by researchers as the knowledge, skills, abilities, and experience that individuals bring to a community (Abel & Dietz, 2012; Kazakis & Faggian, 2016; O’Neill & Bagchi-Sen, 2022; Winters, 2011). The literature exploring human capital in urban environments is significant. For the purposes of this study, our team focused on how human capital is connected to IHEs (including institution type), labor markets, migration and student mobility, and population growth.

Findings in several studies (Abel & Dietz, 2012; Kazakis & Faggian, 2016; O’Neill & Bagchi-Sen, 2022; Winters, 2011) demonstrate that IHEs in urban areas contribute to the economic health of their local economies by bringing increasing human capital to their communities. Specifically, O’Neill and Bagchi-Sen’s (2022) results provide evidence of the importance of community engagement in the retention of college graduates post-graduation.

Logic Model

The logic model in Figure 3 illustrates our understanding of how these theoretical frameworks of migration, human capital, and quality of urban life inform BCN’s inputs and underlie and support the outcomes of BCN’s efforts. Students move along a continuum from the recruitment process as prospective students, through migration and subsequent engagement in the Baltimore region, and are ultimately retained in the region as alumni. As students move along this continuum, they experience a variety of inputs thanks to BCN, the member schools

themselves, and the city of Baltimore. These experiences take place in both the micro level (campus) and the mezzo level (the city). Outputs include the relationships students develop at these levels as well as their developing perspectives about Baltimore based on their experiences and newly developed understanding about what Baltimore has to offer. We defined outcomes as students' satisfaction with the QOUL in Baltimore and the surrounding region as a place to live and work, which leads to their decisions about whether to stay in Baltimore post-graduation. Improving "town and gown" relationships is a secondary outcome.

The literature review and conversations with BCN staff members led us to include external factors in the model which influence both the continuum as well as the students' perceptions and how they make meaning from their experiences in the Baltimore region. These factors include a student's place of origin, their family and social ties, and the industry needs of the Baltimore region. The assumptions in the logic model reflect our initial thinking about the problem of practice based on a review of the literature and based on what we have learned about Baltimore itself.

The logic model informed our thinking about BCN's problem of practice and informed the design of our study, including the research questions that follow.

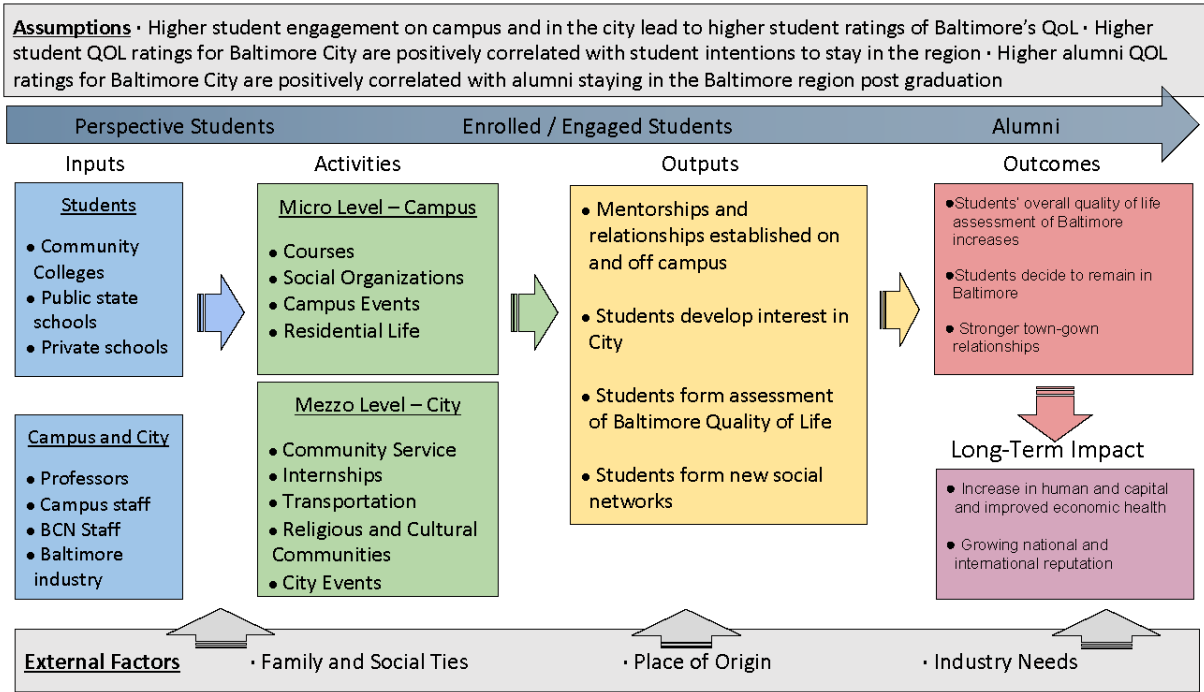


Figure 3. Logic Model

Research Questions

We developed the following research questions after consulting with BCN staff members about their current understanding of the problem and on researchers' review of the available literature and theory relating to the problem.

RQ1: Where do BCN college students live before matriculation and after graduation?

RQ2: What factors lead to BCN students remaining in or leaving Baltimore after graduation?

RQ3: How do degrees conferred to BCN college graduates compare to industry needs in Baltimore and the surrounding region?

Project Design

This improvement study examines both the efficacy of BCN's efforts to retain recent graduates in the Baltimore region post-graduation and the factors that contribute to a student's decision about where to work and live post-graduation. The goals of the project were to provide

BCN with an understanding of the current state of retention of BCN alumni in the Baltimore region, insights into the reasons and factors that contributed to current student and recent alumni in decision-making, and information about how the Baltimore job market aligns with degrees conferred by BCN member institutions.

We planned to study the problem using a mixed-method approach, including analysis of existing enrollment and alumni datasets from BCN member institutions, two quantitative surveys—one for BCN alumni who had graduated during the past two years (see Appendix B) and one for current undergraduate seniors (see Appendix C)—and follow-up interviews with survey respondents. To triangulate data, we integrated open-ended response questions into both surveys and planned to use these responses to develop additional interview questions. To study “job matching” in the region, our work compared BCN degree conferral data with data from the city, county, and state agencies about emerging and supported industries. The study included BCN member-institutions in the aggregate as participants. There were two units of analysis: students who were about to graduate from BCN member-institutions and recent BCN alumni which we defined as those who graduated in 2020, 2021, and 2022.

Data Collection

We attempted to collect primary data to study RQ1 and RQ3 from BCN member-institution offices of the registrar, admissions, and alumni affairs. We requested enrollment data including the zip codes, home cities, states, and countries of students from 2013-2023. We also requested city, state, and zip codes recorded for recent alumni to compare with 2020 census data. We planned to analyze and compare the two datasets (enrollment and alumni) to better understand the patterns of matriculation to and migration from the Baltimore region. Finally, we requested data about degrees conferred for the past ten years from each member institution.

While a few institutions were able to support our requests and provided data for the study, most institutions indicated that they were unable to share data with us. In order to collect more complete enrollment data, we partnered with the Maryland Higher Education Commission (MHEC). MHEC “is the State’s higher education regulatory and coordinating board, responsible for establishing statewide policies for Maryland public and private colleges and universities, as well as the for-profit career schools” (About MHEC, n.d.). Our team worked directly with MHEC to obtain the needed enrollment data and collected publicly available data related to degree conferral from MHEC. While some institutions provided current residential data for recent alumni, many were unable to do so. We incorporated survey data to understand the migration patterns of alumni after graduation and the intent of students about where to live post-graduation. To better understand industry needs, we reviewed available data from the U.S. Bureau of Labor Statistics in addition to Baltimore’s target industries as defined in the city’s local workforce plan and compared these with data collected on degrees conferred.

To answer RQ2, we developed and distributed two surveys using Qualtrics: one for graduating seniors and another for recent alumni, which we defined as having graduated within two years of survey distribution. The student senior survey included questions from a preexisting BCN student survey. We then created a corresponding survey for alumni as a newly identified stakeholder group. We incorporated questions designed to assess QoL factors used in previous work on QoL factors to study the perceptions and locational choices of knowledge workers in cities (Brown & Mczynski, 2009). Survey responses informed our understanding of the factors impacting current students and recent alumni as they considered where to settle post-graduation.

The survey dissemination plan relied heavily on support from BCN staff members, as well as the Vice Presidents of Student Affairs (VPSAs) and Alumni offices at each member institution. To gain support and establish a clear dialogue with these offices, we provided introductory information to key members via email in recruitment letters and followed up with VPSAs through phone calls and virtual meetings to address any issues or concerns prior to survey distribution.

We conducted interviews with volunteers from the pool of survey respondents and used convenience sampling to increase opportunities to collect data via interviews. In addition to a prepared set of questions, researchers developed specific questions for each interview based on responses to open-ended questions and QoL indicators ranked as having played a large role in their decision-making process regarding where to settle post-graduation. Interviews were semi-structured, employing grand-tour, experience, and example questions and were designed to provide clarity and context for survey responses and ratings. Interviews lasted roughly 30 minutes on Zoom with each voluntary participant. We recorded each interview on the Zoom platform and transcribed the interviews using the OtterAI application. We developed the following criteria for selecting interview participants:

1. Survey respondent indicated interest in participating in the interview process.
2. Qualitative, open response answers deemed to be of high quality, meaning that respondents provided a thoughtful response rather than a cursory one.
3. Balanced representation that included seniors, alumni, and varied institution types.

Incentives and Benefits

As an incentive to complete the survey, we advertised a chance to win a \$5.00 gift card to any student or graduate who completed the survey and voluntarily provided us with their email

address. At the conclusion of the study, BCN distributed \$750 in \$5.00 gift cards to 150 randomly selected survey respondents

Anonymity/Confidentiality

We protected all data collected for this project. While we requested email addresses from survey respondents, we used this information only to contact individuals who voluntarily agreed to participate in a follow-up interview or for students who won a gift card. We removed all email addresses from the survey data prior to data analysis and stored all data behind Vanderbilt's firewall in a password-protected VU Box. We used disaggregated demographic data for the sole purpose of determining patterns in choices students and graduates make and for no other purpose. We retained proprietary ownership and sole access to survey results.

Data Collection Sequencing and Timing

Meetings with the BCN Governing Board and VPSAs occurred in October 2022. We used these meetings to build rapport, answer questions, and gain institutional buy-in. Survey distribution and data collection occurred simultaneously from October 2022 to January 2023. Out of thirteen member institutions, three indicated that they would not distribute surveys either to current students or to alumni due to a variety of factors. To offset lack of support from member institutions, researchers extended survey collection through mid-January 2023. Survey responses influenced and led to the selection of interviewees, which occurred in late December 2022 and early January 2023. Document collection continued throughout all phases of research.

Triangulation

In following recommendations to strengthen validity (Ravitch & Carl, 2021), administering the survey first with follow-up interviews enabled refinements of interview questions to ensure that they complemented and triangulated survey findings. This provided more precision and clarification to survey responses.

Multiple data collection sources also supported triangulation efforts. In addition to interviews and surveys, researchers incorporated document collection throughout the study. Document collection included, but was not limited to, reviews of BCN websites and current programs, university and city websites, existing enrollment data from MHEC, preexisting census data and labor bureau statistics, and the comparison of marketed photographs with most current photographs of key locations that students most frequently visit. This document review provided a visual understanding of student and alumni experiences and served as a method to confirm findings or function as a mediator when confronted with differing survey responses.

Finally, our team consisted of three individuals with a variety of backgrounds and positionalities, thus providing investigator triangulation throughout the entire process. The collaboration and open communication amongst the researchers strengthened our findings and challenged biases.

Participant Information

Surveys

A total of 1,058 participants completed the survey. We reviewed the data, removed obvious duplicates, and analyzed surveys from 704 alumni and 343 seniors. 67.19% of alumni survey responses indicated that they remained in the Baltimore area, 12.07% left Baltimore after they graduated, and 20.31% stayed in the city but ultimately left. Among senior responses,

56.27% indicated that they are interested in remaining in Baltimore following graduation, 17.49% remain unsure, and 13.99% are disinterested in remaining in Baltimore after graduation. Many BCN member-institutions chose not to disseminate the survey and some requested to delay survey dissemination until January 2023. As a result, the results did not achieve the desired representation across all thirteen BCN member institutions. The table in Figure 4 below provides an overview of survey participation.

Institution	Type	Number of undergraduate students	Number of student surveys	Number of alumni surveys
Community College of Baltimore County	Community College	16,126 (22.22% student population)	38 (11.69% of surveys)	146 (19.92% of surveys)
Coppin State University	4-year Public – HBCU	1,845 (2.54% student population)	1 (0.31% of surveys)	54 (7.37% of surveys)
Morgan State University	4-year Public – HBCU	7,034 (9.69% student population)	8 (2.46% of surveys)	60 (8.19% of surveys)
Towson University <i>(Not actively participating)</i>	4-year Public – USM School	17,907 (24.67% student population)	4 (1.23% of surveys)	29 (3.96% of surveys)
University of Maryland Baltimore County	4 year Public – USM School	10,835 (14.93% student population)	187 (57.54% of surveys)	125 (17.05% of surveys)
University of Baltimore	4-year Public – Adult Serving**	1,605 (2.21% student population)	15 (4.62% of surveys)	118 (16.10% of surveys)
Johns Hopkins University <i>(Not actively participating)</i>	4-year Private/Elite	6,132 (8.45% student population)	8 (2.46% of surveys)	29 (3.96% of surveys)
Goucher College <i>(Not actively participating)</i>	4-year Private	1,057 (1.46% student population)	11 (3.38% of surveys)	25 (3.41% of surveys)
Loyola University of Maryland	4-year Private	3,787 (5.22% student population)	11 (3.38% of surveys)	28 (3.82% of surveys)
Notre Dame of Maryland University	4-year Private	807 (1.11% student population)	10 (3.08% of surveys)	29 (3.96% of surveys)
Stevenson University <i>(Not actively participating)</i>	4-year Private	2,979 (4.10% student population)	8 (2.46% of surveys)	33 (4.50% of surveys)
Maryland Institute College of Arts	4-year Private	1,540 (2.12% student population)	17 (5.23% of surveys)	18 (2.46% of surveys)
Total # of BCN undergraduate population <i>*Data on student populations pulled from IPEDS</i> <i>**Adult serving institutions are age friendly universities committed to expanding access to students of all ages</i>		72,584	325	733

Figure 4. Survey Results by Institution

The disproportional representation seen in the table is likely associated with the challenges of securing active participation in survey dissemination from many BCN member

institutions. To understand BCN students and alumni in the aggregate, we analyzed survey data by institution type rather than approaching the analysis at the institutional level. Figure 5 illustrates results by institution type.

Survey Results by Institution Type			
Institution type	% of BCN population	Alumni	Students
		% of total alumni respondents	% of total student respondents
Community College	22.22%	31.16%	15.45%
4-yr Public	39.60%	23.33%	55.98%
4-yr Public HBCU	12.23%	14.85%	2.62%
4-yr Public Adult Serving	3.49%	14.52%	6.71%
4-yr Private Liberal Arts	14.01%	14.85%	16.91%
4-yr Private Elite	8.40%	3.10%	2.33%
Hybrid*	-	13.05%	n/a
<i>*Hybrid results include alumni who attended more than one type of institution while in Baltimore</i>		n = 704	n = 343

Figure 5. Survey respondents by institution type.

Interviews

We conducted eight total interviews. Using the agreed upon criteria, we contacted 23 students and 34 alumni who completed a survey and who volunteered to participate. Four survey respondents responded and agreed to participate in the interview process. After additional unsuccessful attempts, we leveraged convenience sampling to identify four additional interview subjects through professional networking. Criteria in selecting these additional individuals included alumni who had graduated within the last two to three years and current seniors. Figure 6 illustrates demographics for interview participants.

School	Status	Gender	Major/Field of Study	Decision on Baltimore
MICA	Senior	F	Graphic Design	Undecided
Loyola	Senior	M	Business Administration	Interested in staying
UMBC	Senior	F	Biology	Interested in staying
UMB	Current	M	Law	Interested in staying
UMB	Alumna	F	Law	Stayed
UMBC	Alumnus	M	Computer Science	Stayed
UMBC	Alumnus	M	Dance	Stayed
Stevenson	Alumnus	M	Film and Moving Image	Stayed

Figure 6. Demographics of interview participants

Data Analysis

Qualitative Data

We analyzed open-ended survey responses and interviews using inductive and deductive codes for consistency and data triangulation. We used an iterative approach to develop the code set starting with deductive codes derived from the literature and research questions. As data collection continued, we began to identify patterns in the data set and established inductive codes. For example, trends about experiences, QoL indicators, or job search factors required more specific inductive codes to adequately capture responses. After reviewing all interview transcripts, a primary reviewer completed axial coding, or thematic clustering, to aid in data analysis. In developing these codes, we sought to find repetition across data sources for triangulation, strong language or opinions, and agreement or disagreement among respondents, particularly across demographic groups, institutional category, or student/alumni status, as recommended by Ravitch and Carl (2021). Qualitative code tallies from the primary reviewer were used for frequency analysis and triangulation. A second reviewer completed an independent

review and coded each transcript to ensure no significant discrepancies were found to add measures of reliability and validity to qualitative findings. Finally, group discussions were held to finalize the code book, triangulate data, and further validate results (see Appendix E).

Interviews helped us understand both ratings of QoL indicators in more depth and how study participants perceived Baltimore. Interviews and open-ended responses from the survey also provided insights that led to better understanding of how home and family, job search resources, and degree and industry factors influenced the decision-making process.

Quantitative Data

Using a preexisting BCN survey strengthened the validity of our survey by enabling researchers to build upon historical work and patterns from past surveys. The inclusion of QoL indicators derived from similar studies (Brown & Mczyski, 2009, Ehrke et al., 2022, Marans & Kweon, 2011, Philadelphia Quality of Life, 2009) provided researchers with a trustworthy baseline as the team identified factors specific to graduating college students. We measured student and alumni perceptions of the Baltimore region including how they would rate the city as a place to live and work (independent variables) by asking students to rate various QoL factors on a 5-point Likert scale. We also measured levels of engagement in the Baltimore region using responses about volunteering, internships, transportation use, and attractions visited within the city (independent variables). The dependent variable for current students was their level of interest in remaining in the region post-graduation (dependent variable). For alumni, we defined the dependent variable as their current location (i.e., whether a respondent stayed or remained in Baltimore post-graduation).

Based on our understanding of how engagement influences retention (Tight, 2019), we developed several hypotheses to guide data analysis. First, our team hypothesized that there would be a correlation between students and alumni who indicated high levels of engagement in Baltimore and high levels of satisfaction with QoL indicators for Baltimore city and the region. We also hypothesized that, student respondents who indicated satisfaction with QoL indicators would be more interested in remaining in the region post-graduation and that alumni respondents with high QoL satisfaction would indicate that they had settled in the region since graduation.

After closing the surveys, we analyzed the closed-ended survey responses with R-Studio. We removed submissions from consideration with a reCAPTCHA score below .5 to reduce the incorporation of Bot respondents (Response Quality, n.d.) and constructed univariate graphics for each question to visualize overall results. For categorical variables, we completed frequency analysis. For Likert scale ratings, one researcher converted answers to a 5-point numeric scale to enable means analysis and standard deviation. Our team compared overall means results from both alumni and seniors to means results filtered by the dependent variable. Researchers coded open-ended questions to assess frequency of responses naming QoL indicators and ran multinomial regressions. Finally, we conducted comparisons of results to historical surveys in other regions. Figures 7 and 8 provide overviews of means analysis for alumni and student respondents. A more in-depth means and regression analysis is available in Appendix F.

Variables	Alumni							
	Total		Stayed in B-more		Left B-more		Stayed then Left	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Volunteering status	0.5	0.5	0.58	0.49	0.31*	0.46	0.38*	0.49
Internship status	0.75	0.43	0.78	0.41	0.55*	0.5	0.77*	0.42
Rating employment opportunities*	3.76	1.06	3.94	1.01	3.16*	1.05	3.51*	1.03
Rating homelessness	3.07	1.27	3.13	1.29	2.25*	1.03	3.35*	1.13
Rating housing affordability	3.5	1.12	3.61	1.13	2.81*	1.07	3.51*	0.94
Rating healthcare access	3.92	0.94	4	0.95	3.55*	0.97	3.85*	0.85
Rating proximity to family*	3.77	1.08	3.95	1	3.18*	1.19	3.49*	1.11
Rating city aesthetics	3.88	1.04	4.02	1.02	3.46*	1.03	3.66*	0.99
Presence of strong academic institutions	3.98	0.94	4.08	0.9	3.84*	0.88	3.72*	1.04
Rating overall safety*	3.44	1.24	3.59	1.21	2.37*	1.16	3.59*	1.08
Rating job salaries*	3.71	1.03	3.9	0.97	2.96*	0.97	3.48*	1
Rating crime	3.16	1.35	3.26	1.35	2.14*	1.17	3.44*	1.18
Rating overall cost of living*	3.6	1.06	3.7	1.07	3.07*	1.04	3.58*	0.94
Rating housing availability	3.67	1.1	3.84	1.08	2.8*	1.1	3.61*	0.94
Rating sense community	3.78	1.03	3.9	1	3.24*	1.15	3.67*	0.98
Notes : Factors rated on scale of 1 to 5, with 1= "Extremely dissatisfied", 2 = "Somewhat dissatisfied", 3 = "Neither satisfied nor dissatisfied", 4 = "Somewhat satisfied", and 5 = "Extremely satisfied" Volunteer and Internship factors rated on a scale of 0 to 1 with 0="No", 1="Yes" * p-value < .05	n=701		n=473		n=85		n=143	

Figure 7. Means analysis for QoL indicators - Alumni.

Variables	Seniors							
	Total		Interested		Not Interested		Unsure	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Volunteering status	0.37	0.48	0.43	0.5	0.3*	0.46	0.23*	0.43
Internship status	0.69	0.46	0.73	0.44	0.72	0.45	0.54*	0.5
Rating employment opportunities*	3.5	1.11	3.68	1.08	2.86*	1.05	3.42*	1.05
Rating homelessness	2.25	1.16	2.44	1.23	1.72*	0.91	2.05	0.92
Rating housing affordability	3.05	1.3	3.28	1.33	2.58*	1.17	2.67*	1.06
Rating healthcare access	3.63	1.08	3.89	0.98	2.95*	1.1	3.28*	1.05
Rating proximity to family*	3.75	1.13	3.93	0.98	3.49*	1.28	3.31*	1.35
Rating city aesthetics	3.77	1.05	3.94	0.96	3.31*	1.16	3.58*	1.07
Presence of strong academic institutions	3.99	0.96	4.2	0.84	3.41*	1.15	3.77*	0.92
Rating overall safety*	2.52	1.26	2.75	1.3	1.72*	0.96	2.42*	1.05
Rating job salaries*	3.37	1.13	3.6	1.13	2.64*	1	3.19*	0.93
Rating crime	2.24	1.25	2.48	1.33	1.58*	0.9	2*	0.95
Rating overall cost of living*	3.15	1.19	3.41	1.19	2.58*	1.1	2.72*	0.98
Rating housing availability	3.13	1.29	3.39	1.28	2.53*	1.29	2.72*	1.05
Rating sense community	3.59	1.11	3.85	0.98	2.93*	1.23	3.28*	1.1
Notes : Factors rated on scale of 1 to 5, with 1= "Extremely dissatisfied", 2 = "Somewhat dissatisfied", 3 = "Neither satisfied nor dissatisfied", 4 = "Somewhat satisfied", and 5 = "Extremely satisfied" Volunteer and Internship factors rated on a scale of 0 to 1 with 0="No", 1="Yes" *p-value<.05	n=301		n=193		n=60		n=48	

Figure 8. Means analysis for QoL indicators - Students.

Based on the review of these ratings, we see that alumni who stayed in the region and students who want to stay in the region consistently rate QoL indicators higher than any other respondent group, including alumni who reported that they stayed and then left and students who are unsure about their plans. A frequency analysis of survey respondents rankings of QoL indicators yielded the top factors for students and alumni. These indicators are depicted in Figure 9 and include the percentage of survey respondents who listed these factors as top QoL indicators when making a decision about whether to remain in Baltimore after graduation or to leave the region.

Students and Alumni (n= 1002)	
Top Factors	Total
1. Employment opportunities	49.90%
2. Job salaries	44.81%
3. Cost of Living	32.34%
4. Proximity to family	32.04%
5. Overall safety	28.14%

Figure 9. Top Factors that Influence Decision-Making (Students and Alumni)

When comparing frequency results against the dependent variable, employment opportunities and job salaries remain top priorities for almost all individuals. However, the selection of these two factors is lower for students who are not interested in remaining in Baltimore (Figure 10).

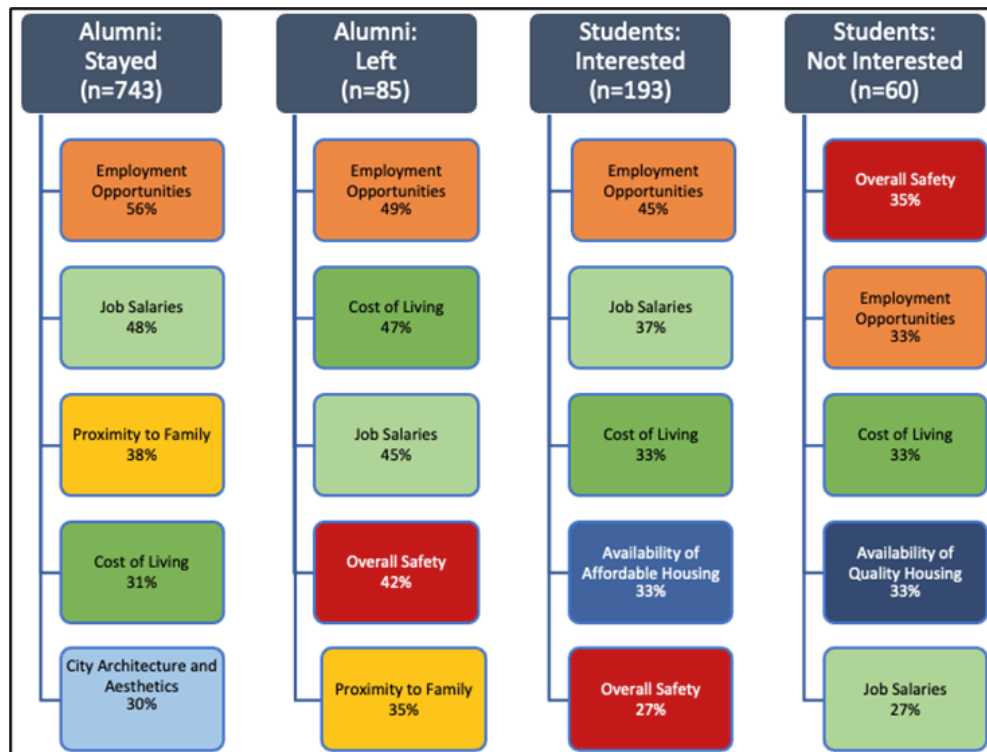


Figure 10. Most Important QoL Factors in Student and Alumni Decision-Making

Top Factors Compared to Other Migration Studies		
Baltimore	PEW -Philadelphia	Midwest Migration Study
1. Employment opportunities	1. Crime/Safety	1. Job
2. Job salaries	2. Prefer Suburban Life	2. Proximity to Family and Friends
3. Cost of Living	3. Schools	3. Community
4. Proximity to family	4. Want Something Different	4. Crime/Safety
5. Overall safety	5. Financial Reasons	5. Proximity to events/attractions

Figure 11. Comparison to Other Studies

Finally, beyond means and regression analysis on QoL indicators, we conducted a frequency analysis on resources students and alumni used throughout the job search and reviewed historic surveys to compare top factors residents consider when deciding to move (Ehrke et al., 2022, Philadelphia Quality of Life, 2009).

Data from Document Collection

For additional analysis, document collection supported RQ1 and RQ3. Lack of available data from individual BCN member-institutions led us to partner with MHEC to collect enrollment data to study student origins. MHEC provided enrollment data by institution type for the last ten years for all but one BCN member institution. MHEC left out data for CCBC due to concerns about confidentiality. Our team combined enrollment data received directly from CCBC with the MHEC dataset.

To account for the lack of alumni data available to answer the second half of RQ1, we conducted regression analysis using alumni survey responses to provide understanding of how states of origin influence outcomes of students and alumni in their plans to stay or move away from Baltimore.

For RQ3, we gathered historic data from MHEC on degrees conferred by BCN member-institutions and two members of the team coded those degrees using North American Industry

Classification System (NAICS) industry codes. NAICS is used by federal agencies to analyze statistical data from the U.S. Census. We then compared degrees conferred by BCN member-institutions to current job projections within Baltimore's current and target industries (*Workforce Innovation and Opportunity Act in Baltimore City's Workforce Innovation and Opportunity Act (WIOA) Local Workforce Plan Contents*, 2020). Finally, we reviewed the results to survey respondents' perceptions on QoL indicators related to employment opportunities in Baltimore and conducted a regression analysis on responses that focused on the importance and outcome of securing a job in the same industry as their field of study.

Findings

Research Question #1: Where Do BCN Students Live Before Matriculation and After Graduation?

Finding A: Students Who Attend BCN Institutions Matriculate in Predictable Patterns by Institution Type.

Research shows that community colleges and state universities are more likely to draw enrollment from local communities, while elite and private institutions are more likely to enroll students from outside the local market (Dougherty et al., 2018). Consistent with this research, analysis of MHEC enrollment data and CCBC data for the past ten years indicate that students do matriculate in predictive patterns with community college students and students who attended 4-year public institutions being more likely to have home zip codes in Maryland.

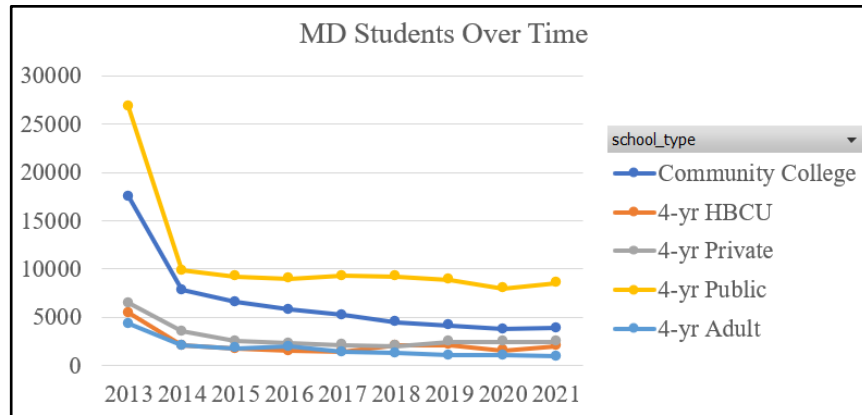


Figure 12. MD Student Matriculation Trends over Time

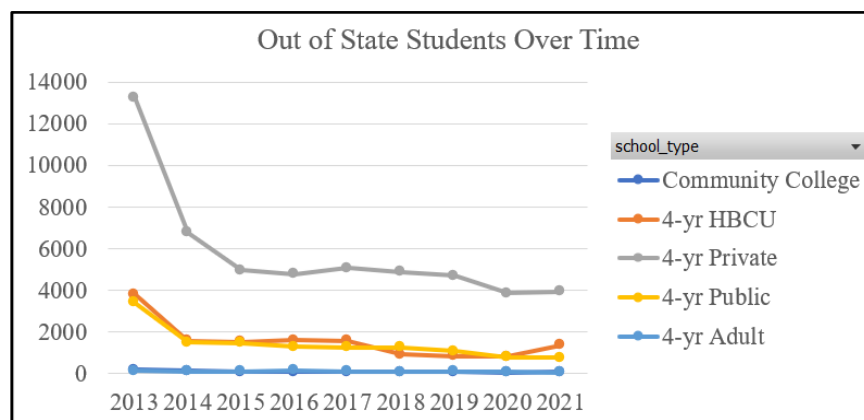


Figure 13. Out of State Student Matriculation Trends over Time

**Nationally, higher education experienced enrollment declines from 2013-2014. Researchers attribute the decline to economic recovery after the 2008 recession, population decline following a population boom, and adults returning to the job market rather than pursuing higher education (Pérez-Peña, 2013).*

As our study focused on migration and retention specifically for the Baltimore region, we employed a more narrow review of enrollment data to distinguish between students that are new to the Baltimore region and those who originate from the region. We defined Baltimore student residents as those matriculating from zip codes within Baltimore County and Baltimore City (*Zip Code Boundary Area Files*, n.d.). As expected, community colleges and 4-year public institutions drew the majority of local Baltimore residents (See Figures F3 and F4). Overall, BCN member-institutions attract 62.14% of their student bodies from outside of the Baltimore region and bring an average of 20,867 new students, potential human capital, to the city and surrounding area each year.

Finding B: Current Seniors Plan to, and Alumni do, Remain in the Baltimore Region.

Due to our receiving little data from BCN member-institutions about where recent alumni settled, we are unable to report any data in the aggregate. However, analysis of survey responses from both current seniors and recent alumni indicate that both populations see Baltimore as a good place to live and work. Of current seniors who responded to our survey (N=299), 61.14% of Maryland residents and 88.46% of out-of-state students indicated that they are interested in staying in Baltimore post-graduation.

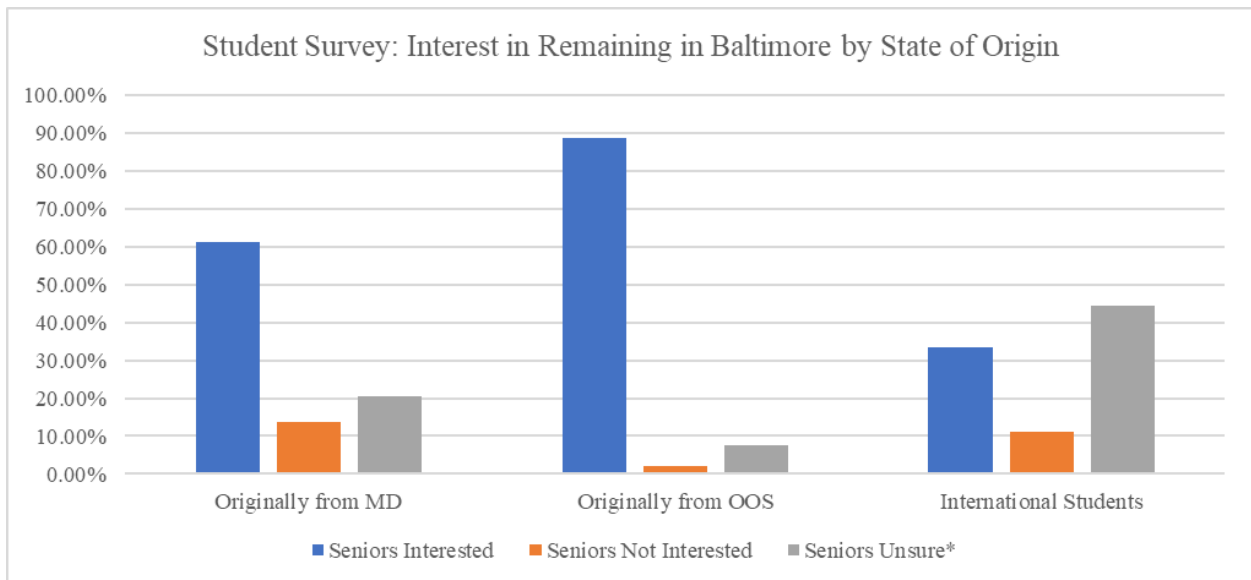


Figure 14. Student Interest in Remaining in Baltimore by State of Origin

Among alumni respondents (N=697), almost 70% of out-of-state and 66.5% of in-state students indicated that they remained in Baltimore after graduation. As these tables demonstrate, in addition to regression analysis, one's state of origin does not significantly influence a student's decision ($p > .05$).

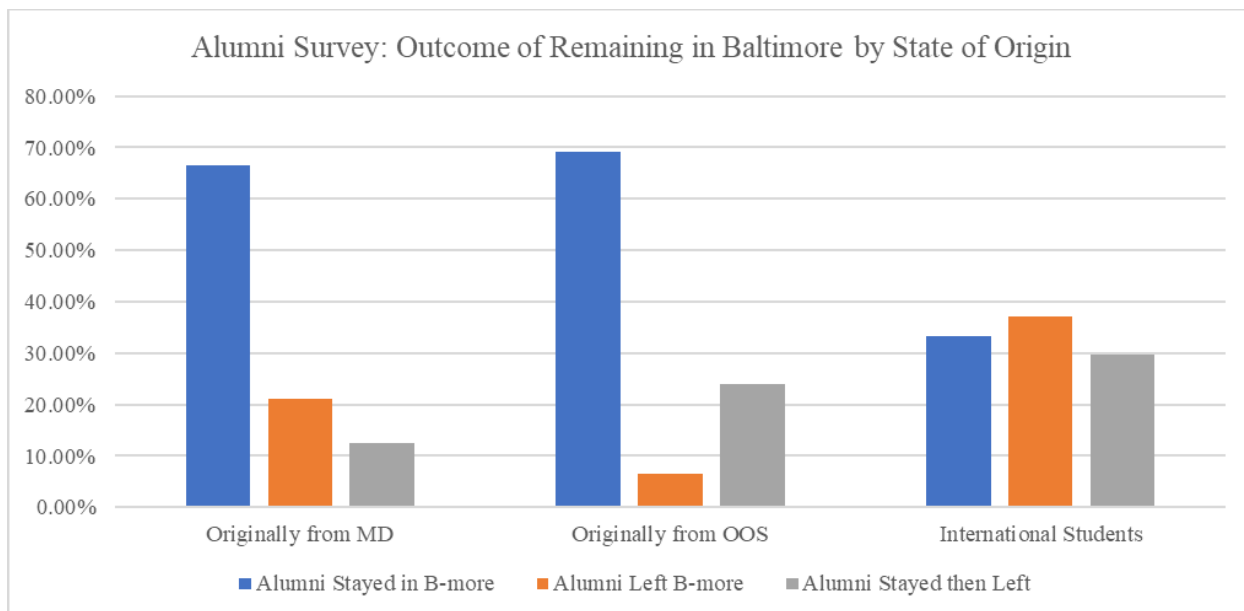


Figure 15. Alumni Interest in Remaining in Baltimore by State of Origin

Research Question #2: What Factors Lead to BCN Students’ Remaining in or Leaving Baltimore After Graduation?

Consistent with historical research, three QoL indicators emerged as important to both alumni and students: employment opportunities, job salaries, and cost of living (Figures 16 and 17). Regression analysis showed that a graduate’s decision to remain in Baltimore can be significantly predicted by their ratings of the QoL indicators listed in Figures 16 and 17.

Finding A: Overall Safety is a Top Factor for All BCN Students, but Only for Alumni who Left Baltimore after Graduation.

Alumni. “Overall safety” emerged as one of the top five most important indicators among alumni who left Baltimore. 42% of alumni who left the region after graduation included “overall safety” as a critical QoL indicator in their decision-making process (Figure 16). This aligns with past work in Detroit, MI, where studies found that overall satisfaction with the community was dependent on their perceptions of crime and safety (Marans & Kweon, 2011). While our ratings among alumni who left the region align with Detroit findings, our results differ

from the Detroit study among BCN alumni that remained in Baltimore. Even though this group does rate crime and safety indicators lower than other QoL indicators, this dissatisfaction did not impact their decision about remaining in the city or their overall perception of the city. This group consistently rated Baltimore and its QoL indicators higher than any other group of respondents (Figure 7).

Alumni Top Five Factors in Decision-Making	
I stayed in Baltimore (n=473)	
1. Employment opportunities	55.81%
2. Job salaries	47.78%
3. Proximity to family	37.63%
4. Cost of living	30.66%
5. City architecture and aesthetics	30.02%
I Left Baltimore (n=85)	
1. Employment opportunities	49.41%
2. Cost of living	47.06%
3. Job salaries	44.71%
4. Overall safety	42.35%
5. Proximity to family	35.29%

Figure 16. Alumni Factors

Students. While “overall safety” was not in the top five QOL indicators for alumni who remained in Baltimore post-graduation, “overall safety” was among students’ top five QoL indicators, both for those who expressed interest in staying and for those who planned to leave the region. 35% of students who were not interested in remaining in the city after graduation included “overall safety” as a critical QOL indicator in their decision-making process (Figure 17). “Overall safety” was ranked higher than employment opportunities, cost of living, availability of quality housing, and job salaries. Regression analysis showed that for every one unit increase in overall safety rating among alumni, the odds of leaving Baltimore compared to staying decreases by 55%. For every one unit increase in overall safety rating among students,

the odds of not having interest in Baltimore compared to having an interest in staying decreases by 57%.

Student Top Five Factors in Decision-Making	
Interested (n=193)	
1. Employment opportunities	45.08%
2. Job salaries	36.79%
3. Cost of living	32.64%
4. Availability of affordable housing	27.46%
5. Overall safety	26.42%
Not Interested (n=60)	
1. Overall safety	35.00%
2. Employment opportunities	33.33%
2. Cost of living	33.33%
2. Availability of quality housing	33.33%
5. Job salaries	26.67%

Figure 17. Students

Finding B: Pride and Love for Baltimore Overrides Concerns about Safety

While seniors identify safety as an important factor in decision-making and rate it lower compared to other QoL indicators (M = 2.52, SD = 1.26), 64.12% of student respondents remain interested in living in Baltimore after graduation. Statements made during interviews support this finding. In fact, even among those who shared that they experienced or witnessed crime in Baltimore, students did not waver in their descriptions of the city and continued to use words like “pride” and “love” when describing Baltimore. Throughout the course of interviews, students and alumni bring up these words 37 times. A current senior from Baltimore who shared that her car had been broken into on the day of the interview said, “There's something about the heart and the grit of the city...I'm really proud to be a Baltimorean...even though most people look at me sideways when I say that.” A current law student from out of state who witnessed a violent crime stated that, “Baltimore is a close-knit community. There's a lot of pride in Baltimore. [It] is

a very diverse city...all those kinds of things are pluses.” This student is planning to remain in Baltimore after graduation. Other interview participants communicated an understanding of Baltimore’s complicated racial and social justice history. A current senior from California shared that, “I really do love this area. And I think that it's the people that go here are incredible and it is a beautiful city and it has so much merit and things going on all the time and is really sad that it gets such a bad rap for being full of crime...Baltimore as a city has a lot of harmful things in the environment that are impacting everyone but some communities more than others.”

Triangulated data from interviews and open-ended survey questions yielded additional evidence for this finding. Prior to ranking QoL indicators, respondents were prompted to list factors that impacted their decisions to stay or leave the Baltimore region. “Love of the City” was in the top five for both student and alumni responses (see Figures E2 and E3).

Finding C: Affordable and Quality Housing are Top Factors for Students in Decision-Making

While most alumni and students identify cost of living as an important factor in decision making, only students consistently identify the availability of affordable and quality of housing as important (Figures 16 and 17). Housing affordability is in the top five QoL factors taken into consideration for students overall, as well as for the sub-category of students who noted interest in staying in Baltimore following graduation. When interviewing a current law student who has lived in Los Angeles, CA., and who is interested in remaining in Baltimore, he said that “[Baltimore] is the first place we've ever been like, ‘We can buy a house here.’” For students not interested in staying in Baltimore, respondents identified the availability of quality housing more frequently over housing affordability. On average, they rated their level of satisfaction for the availability of quality housing indicator a full 1.5 points lower compared to students who want to stay (see Figure 8). Future research with alumni who did not remain in the Baltimore region may

yield more insight into these results and provide better understanding of student expectations related to housing.

Finding D: Engagements in the City such as Volunteering and Internships Influence the Odds of Remaining in Baltimore.

Regression analyses indicated that volunteering and completing internships within the Baltimore region increase the odds that a student will be interested in staying in Baltimore and alumni staying in the region ($p < .001$). The odds of leaving Baltimore decreased by 68% for alumni who reported on the survey that they had volunteered. When students volunteer, the odds of wanting to leave Baltimore after graduation decrease by 42%. One interview participant, a current senior from the U.S. Virgin Islands, shared how course-based service opportunities helped connect him to the area. He said, “They're called service-based classes...you'll be working with some kind of business or entity outside of the university and that will be for course credit, alongside whatever academic stuff we do inside the class. Yeah, and that builds connection to a lot of different people [in Baltimore].”

While internships alone do not impact the odds of remaining in Baltimore, the location of internships does. Of seniors who completed an internship within the Baltimore region, 81.75% remain interested in living in the city after graduation (Figure 18). Additionally, 78.52% of alumni who interned within the Baltimore region remained in Baltimore (Figure 19). In many interviews, participants demonstrated a rich understanding of the interconnectedness between various factors and the city's complex history which was heightened by an internship experience. A current senior who is interested in remaining in Baltimore post-graduation, shared what she learned during an internship with a local non-profit focusing on the environment: “Baltimore as a

city has a lot of harmful things in the environment that are impacting everyone, but some communities more than others.”

Location of internship	Students							
	Total		Interested		Not Interested		Unsure	
Baltimore region	126	23.91%	103	81.75%	15	11.90%	8	6.35%
Home state	36	6.83%	17	47.22%	11	30.56%	8	22.22%
Other	20	3.80%	6	30.00%	8	40.00%	6	30.00%

Figure 18. Student Interests in Staying in Baltimore Based on Location of Internship

Location of internship	Alumni							
	Total		Stayed in Baltimore		Left Baltimore		Stayed then Left	
Baltimore region	419	79.51%	329	78.52%	20	4.77%	70	16.71%
Home state	83	15.75%	34	40.96%	10	12.05%	39	46.99%
Other	25	4.74%	7	28.00%	17	68.00%	1	4.00%

Figure 19. Alumni Outcomes Based on Location of Internships

Finding E: Out-of-State Students Rely More on Campus and BCN Resources in the Internship and Job Search than Local Students.

Students and alumni respondents indicated that employment opportunities were an important factor in their decision making. This finding prompted us to review survey responses related to resources respondents relied on to secure internships and jobs. Overall, our findings aligned with those of Cai and Wang (2022) who emphasized the role educators and administrators play in supporting students throughout the job search. According to BCN students and alumni, most frequently used resources included recruitment sites, faculty and staff, career services, on-campus social networks, and social networking through family and friends on campus. For out-of-state students and alumni, the most frequently used resource was social networking through family and friends on campus. Overall, out-of-state students and alumni were more likely to report using BCN resources. Out-of-state alumni who stayed in the region more frequently used career services, and out-of-state students, regardless of the dependent

variable, seek out support for jobs and internships from on-campus family and social networks (Figures 20 and 21).

Resources Used	Students											
	Interested				Unsure				Somewhat Dissinterested			
	OOS		MD		OOS		MD		OOS		MD	
Career Services Office	14	30.43%	59	45.74%	0	0.00%	15	34.88%	1	100%	14	35.90%
Faculty and staff at my university	21	45.65%	75	58.14%	1	25.00%	23	53.49%	1	100%	20	51.28%
Social networking through family and friends at home	18	39.13%	53	41.09%	1	25.00%	12	27.91%	1	100%	11	28.21%
Social networking through family and friends on campus	28	60.87%	55	42.64%	2	50.00%	10	23.26%	1	100%	9	23.08%
Baltimore Collegetown Network website	17	36.96%	27	20.93%	1	25.00%	5	11.63%	0	0%	2	5.13%
LinkedIn	6	13.04%	56	43.41%	0	0.00%	12	27.91%	1	100%	13	33.33%
Recruitment sites (ex: ziprecruiter)	16	34.78%	41	31.78%	0	0.00%	9	20.93%	0	0%	9	23.08%
Internet searches (ex: google)	7	15.22%	65	50.39%	0	0.00%	19	44.19%	1	100%	16	41.03%
Other (please specify)	1	2.17%	5	3.88%	0	0.00%	3	6.98%	0	0%	3	7.69%
Total number of respondents	n=46		n=129		n=4		n=43		n=1		n=39	

Figure 20. Student Use of Resources During the Internship and Job Search

Resources Used	Alumni											
	I stayed in Baltimore				I Left Baltimore				Initially stayed then left Baltimore			
	OOS		MD		OOS		MD		OOS		MD	
Career Services Office	115	35.94%	41	29.50%	7	23.33%	15	34.09%	25	22.52%	10	38.46%
Faculty and staff at my university	154	48.13%	44	31.65%	12	40.00%	14	31.82%	28	25.23%	8	30.77%
Social networking through family and friends at home	140	43.75%	58	41.73%	13	43.33%	14	31.82%	44	39.64%	10	38.46%
Social networking through family and friends on campus	156	48.75%	29	20.86%	12	40.00%	5	11.36%	47	42.34%	8	30.77%
Baltimore Collegetown Network website	70	21.88%	17	12.23%	6	20.00%	2	4.55%	29	26.13%	1	3.85%
LinkedIn	99	30.94%	50	35.97%	8	26.67%	17	38.64%	22	19.82%	11	42.31%
Recruitment sites (ex: ziprecruiter)	166	51.88%	43	30.94%	10	33.33%	7	15.91%	52	46.85%	12	46.15%
Internet searches (ex: google)	84	26.25%	55	39.57%	11	36.67%	22	50.00%	14	12.61%	8	30.77%
Other (please specify)	0	0.00%	9	6.47%	1	3.33%	2	4.55%	0	0.00%	1	3.85%
Total number of respondents	n=320		n=139		n=30		n=44		n=111		n=26	

Figure 21. Alumni Use of Resources During the Internship and Job Search

Finding E: Student and Alumni Perceptions of the City Are Not Dependent on Any Single Factor. Factors Are Intertwined as They Shape Students' Post-graduation Decisions.

According to Marans and Stimson (2011)

[I]t is evident that the relationship between QoL and urban environments is undoubtedly complex, and people's satisfaction with living in urban environments is influenced by their personal characteristics, such as (individual or group) values, expectations, perceptions and evaluations, and their demographic and socioeconomic characteristics. People vary in what they may consider to be important when judging their satisfaction with life in general and their QOUL. (p. 16)

We saw this reflected in our regression analysis which indicated that nearly all QoL factors demonstrated significance in influencing the dependent variable. The higher the rating of any individual factor, the odds of remaining in Baltimore increased. Alumni who remained in Baltimore consistently rated quality of life factors higher than any other type of respondent.

Research question #3: How Do Degrees Conferred to BCN College Graduates Compare to Industry Needs in Baltimore and the Surrounding Region?

Finding A: BCN Member Institutions Confer More Degrees Than Jobs Are Available Based on City and County Projections.

Two researchers coded degree conferral data from MHEC to align with industries using codes from the North American Industry Classification System (NAICS) and then compared results to industry projections for Baltimore City and County through 2028 (*Maryland Industry Projections*, n.d.). Overall, the top degrees conferred just in 2021 outpace the region's projections and demands for the decade in most industries. While BCN meets the needs of the city in providing human capital for the region, the job projections do not necessarily meet the needs and interests of college graduates. This finding demonstrates that competition for jobs in

the region may lead to graduates expanding their job search beyond the Baltimore region, regardless of their level of interest in remaining in the region.

Comparing Job Projections to Degrees Conferred			
Industries Aligning with Top Degrees Conferred from BCN institutions	# of Degrees Conferred (2021)	Total Projected Job Growth in the Baltimore Region (2018-2028)	Average Annual Job Growth
Professional Scientific and Technical Services	13,565	6,603	660.30
Health Care and Social Assistance	5,820	11,252	1,125.20
Educational Services	2,767	4,633	463.30
Other Services (except Public Administration)	2,541	835	83.50
Public Administration*	1,719	377	37.70
Arts Entertainment and Recreation	1,688	816	81.60
Information	1,492	161	16.10
<i>*Public Administration NAICS code aligned with OWIP Government Services projections</i>			

Figure 22. BCN Degrees Conferred Compared to Baltimore Region Job Growth

While a number of institutions prioritize strengthening the regional workforce, we acknowledge that many BCN member-institutions have a purpose beyond Maryland, which may account for some of the difference. Seven out of the thirteen BCN member-institutions have mission statements that emphasize the connection to the local and state workforce or economy. All seven of these are public universities or community colleges. Private colleges and universities that are BCN members have mission statements that are far more broad. When analyzing the number of degrees conferred by institutions specifically dedicated to supporting the regional workforce (public institutions), the number of graduates in most industries still outpaces projected job openings through 2028 within one to three years as seen in Figure 23. While there are more graduates than can possibly be placed within Baltimore industries at the time of this study, the importance of this finding is that it provides assurance that BCN schools

are, indeed, contributing to the potential human capital in the Baltimore region.

Comparing Job Projections to Degrees Conferred				
Industries Aligning with Top Degrees Conferred from BCN institutions	# of Degrees Conferred in 2021 (Community College)	# of Degrees Conferred in 2021 (4-year Public)	Total Projected Job Growth in the Baltimore Region (2018-2028)	Average Annual Job Growth
Professional Scientific and Technical Services	594	6,078	6,603	660.30
Health Care and Social Assistance	325	3,717	11,252	1,125.20
Educational Services	81	1,076	4,633	463.30
Other Services (except Public Administration)	851	1,096	835	83.50
Public Administration*	31	412	377	37.70
Arts Entertainment and Recreation	64	781	816	81.60
Information	36	1,183	161	16.10
<i>*Public Administration NAICS code aligned with OWIP Government Services projections</i>				

Figure 23. Degrees Conferred by Public Institution Compared to Projected Job Growth in the Baltimore Region

Finding B: Job-Degree Match is a Key Factor for Alumni who Left the Region.

When pairing the disproportion of industry jobs available from Finding A with the importance that both students and alumni place on job and degree alignment, we found that these factors often lead to graduates deciding to live and work outside of Baltimore. Regression analysis shows that securing a job related to one’s degree significantly impacts a graduate’s decision to remain in Baltimore ($p < .05$). For example, one alumni responded to an open-ended survey question about what they like least about Baltimore by describing Baltimore’s “smallness and lack of opportunities for careers in the performing arts and entertainment” (Alumnus response to open-ended survey question). While the city does not currently prioritize the arts industry in their workforce development plan, there are, however, students who studied the arts and who are truly interested in staying. When these students encounter challenges in the job search, Baltimore misses the opportunity to retain valuable talent which has the potential to contribute to the cultural richness and diversity of the city.

Recommendations

Baltimore Together (2022), in their Comprehensive Economic Development Strategy, both underscored the need for Baltimore to better capitalize on the immense talent being produced in its regional institutions of higher learning and recognized BCN as a source of relevant human capital data for the region. While BCN currently acts as a strong point of centralization for the city and its 13 member schools in efforts to recruit new students to Baltimore, the organization also has the potential to improve its impact on students and the Baltimore region by serving as a primary connector for the school, business, community, and government entities it serves. This unified group, under BCN's leadership, can then set goals and measurable outcomes for future endeavors. Consistent with its existing mission, our recommendations offer a stronger balance of collaboration with its constituents and BCN's stakeholders through new research, programming, and partnerships.

Recommendation #1: Engage in Collaborative Institutional Research

While our study identified and codified clear matriculation patterns by institution type, there is, however, less understanding about the impact of BCN graduates on the local workforce and the local economy. We recommend that BCN lead efforts among member institutions to conduct aggregate level research on this topic. Initial efforts could include data sharing among institutions and analysis of home addresses of alumni for the last ten years to understand the migration patterns of graduates. Additionally, because our findings demonstrate that BCN institutions produce more human capital than what current regional job projections can support, we suggest that BCN work with its board, CoPs, and leaders in government and industry to identify specific retention targets as metrics of future success.

To facilitate successful data collection and analysis among member-institutions who have their own research priorities and initiatives, we recommend that BCN create a CoP among

institutional research (IR) professionals. This group would be charged with creating a coordinated and systemic process to collect and analyze institutional data, survey BCN students, faculty, and staff members, and establish a long-term research agenda. An agreed upon research agenda would enable member-institutions to incorporate BCN data collection into existing institutional priorities. This research would strengthen BCN's understanding of the impact of programming and services on the Baltimore region. Finally, this new IR CoP could develop a set of key indicators of inclusive economic growth and could address the needs outlined in the Baltimore Together Comprehensive Economic Development Strategy (2022) for Baltimore City.

Collaborative research among BCN and its partners will also better serve the Baltimore region by raising its level of significance when applying for funding. As The Brookings Institute showed, the regional economic impact of research universities is tied to their relevance to surrounding industries and communities (Parilla and Haskins, 2023). BCN member-institutions alone may not qualify for significant federal funding or have the capacity to directly fuel prosperity in the region. Together, BCN member-institutions can conduct collaborative, aggregate-level research which can address existing needs and develop multi-system economic strategies and growth initiatives consistent with Esmailpoorarabi et al.'s (2016) recommendation for the building of knowledge economies as well as Abel and Dietz's (2014) strategic advice for growing innovation and entrepreneurship in driving economic growth through higher education research collaborations.

Recommendation #2: Build New Programming for Students and Faculty

Our research findings indicated that students with stronger ties to the Baltimore community through internships and volunteering were more likely to remain in Baltimore.

Additionally, they were less concerned with overall safety and crime, had an affection for the city, and understood the complex nature of systemic racism and economic discrimination on Baltimore's development. This results in an opportunity for BCN to fill an important need for building stronger connections between students and the city beyond their individual campuses through diverse programming. Building on the research of Esmailpoorarabi et al. (2016), BCN can help students better understand the city as a whole outside of the incomplete perceptions they may build while they are situated in the micro level (which we interpreted as college and university campuses).

New programming could include the creation of mentoring relationships between working BCN graduates in the area and current students. We also recommend the expansion of BCN's already successful Industry Days program which introduces students to local industries and the Baltimore Fellowship and Baltimore Underground which increases student understanding of Baltimore and its history. We also advise BCN to consider programming that assists new graduates with relocation and finding housing, such as hosting neighborhood tours, advertising housing opportunities, and making roommate introductions through the BCN website or events. By making these connections and adding a level of support and education to assist students in this major life transition, BCN can address concerns such as safety and introduce students to both quality and affordable housing, all of which are factors for seniors in their decision-making. Altogether, this will have a profound impact on retaining new graduates.

We further suggest similar programming for newly hired staff, professors, and university employees of BCN institutions to increase the likelihood that human capital remains in the Baltimore area. Consistent with Abel and Dietz's (2014) research on human capital, BCN institutions can not only serve as a pathway for graduates to remain in Baltimore as human

capital, but can attract highly talented professors, faculty, staff, and their family members to the region as well. As students are also more likely to use campus resources to make connections to Baltimore, supporting faculty and staff engagement with the city also serves the goal of encouraging students to settle in Baltimore. This, too, directly correlates with Bruning, McGrew, and Cooper's (2006) argument in support of positive university-community engagement improving community perceptions of the institution and serving to influence graduating students' estimation of the quality of life beyond campus in the city of Baltimore.

Recommendation #3: Invest in Partnerships

A foundation of strong partnerships would facilitate our first two sets of recommendations. First and foremost, we recommend that BCN open governing board membership to local business and industry leaders. This would both increase opportunities for partnerships with member-institutions and would also create valuable revenue streams for BCN. Second, we recommend that BCN develop new partnerships with business and nonprofit leaders to develop additional internship opportunities for students and to support collaboration for Industry Days programming. This recommendation is consistent with Esmaeilpoorarabi et al.'s (2016) theories of scaled levels, providing supportive scaffolding as students progress through the micro level, which we interpreted as "campus" to build connections with the mezzo (city) and macro (regional) levels upon graduation.

We also recommend expanding the HR CoP to support programming recommendations focused on faculty and staff. A new career services CoP or a new BCN staff position such as a Director of Business and Career Partnerships can serve as a conduit for individual career services offices at BCN schools to share resources and connect with business and industry board

members while strengthening BCN's positionality as a unifier. The new career services CoP could also work closely with the Baltimore mayor's leadership involved in workforce development plans and the recommended expansion of the BCN Industry Days program. This not only increases support to Baltimore industries, but also serves the interests of graduating students seeking a job that aligns with their degrees. Finally, we recommend that BCN leverage established positive relationships with Visit Baltimore and Live Baltimore as foundations to enhance existing programming and to create new programming. These suggested recommendations align with Johansson's (2011) arguments for driving economic growth through partnership with communities.

Limitations

While we designed the project to support and study students and alumni from Baltimore Collegetown Network member institutions as an aggregate, some BCN member schools indicated a desire to receive additional data analysis for their specific institution. Given the limited time and resources available for this project, we had concerns that we would not be able to meet this request. Because data collection was contingent on the support of member schools, we worked with BCN staff to articulate the value of their participation beyond the specific school scope. A second concern included time limitations for data collection and analysis.

Though our contact at BCN was incredibly supportive and helpful and the BCN governing board was initially enthusiastic, institutional support varied widely. Some institutions indicated that they would not support the study at all while others distributed the survey but did not provide data. We received full support from only one institution. Only three institutions provided partial data to support RQ1. The lack of participation leads to challenges in providing an accurate representation when answering RQ1.

Finally, responses to our outreach to interested survey respondents yielded very few scheduled interviews. To complete additional interviews, we used convenience sampling to identify additional interview candidates. As a result, interviews represent individuals who indicated that they were likely to remain in Baltimore post-graduation and with alumni who had remained in the area post-graduation. While this provides us a strong insight into how students and alumni who stay in Baltimore perceive the city, we recommend future research to gain more insight into the differences in how students and alumni who leave Baltimore shape their understanding of the city.

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Appendix A

Survey and Interview Recruitment Messages

Survey Recruitment Messages

Survey Message for Current Students:

Baltimore college students!

Please take 10-15 minutes to fill out this survey about what it's like to be a student in Baltimore.

Complete the survey and you'll be entered into a drawing for multiple chances to win a \$5 giftcard!

The survey has easy-to-answer questions and is being distributed by the Baltimore Collegetown Network, a group of 13 area institutions that works to enhance the academic and social lives of college students in Baltimore. Your feedback will help us create programs and services that will make Baltimore an even better place to study, work, and live.

Your responses are confidential. If you choose to include your email address at the end of the survey

for a chance to win the prize, this information will only be used to determine prize winners and will not

be shared or sold. Baltimore Collegetown Network may use your survey comments in promotional

materials, but they will not be attributed to you.

***DEADLINE EXTENDED! Please submit your responses by Sunday, November 19th. Thank you for taking the time to fill out the survey!

Survey Recruitment Message

Survey Message for Current Students:

Baltimore college alumni!
Congratulations on your recent graduation!

Please take 10-15 minutes to fill out this survey about what it was like for you to be a student in Baltimore and about what you've been doing since you graduated.

Complete the survey and you'll be entered into a drawing for multiple chances to win a \$5 giftcard!

The survey has easy-to-answer questions and is being distributed by the Baltimore Collegetown Network, a group of 14 area institutions that works to enhance the academic and social lives of college students in Baltimore. Your feedback will help us create programs and services that will make Baltimore an even better place to study, work, and live.

Your responses are confidential. If you choose to include your email address at the end of the survey for a chance to win the prize, this information will only be used to determine prize winners and will not be shared or sold. Baltimore Collegetown Network may use your survey comments in promotional materials, but they will not be attributed to you.

DEADLINE EXTENDED! Please submit your responses by Sunday, November 19th. Thank you for taking the time to fill out the survey!

Recruitment message for follow-up interviews

Dear (Insert name here),

Thank you for your recent participation in our Baltimore CollegeTown Survey. Based on your submission, you indicated interest in volunteering for a follow-on interview.

As a doctoral student in the Leadership, Learning and Organizations program at Vanderbilt University, I am inviting you to schedule an interview with us to help us in our work. We are working with Baltimore CollegeTown Network to explore key factors that lead to the attraction and retention of college graduates in the city.

Your participation in this study is extremely important to us and to Baltimore CollegeTown Network. Should you agree to participate, our next step together will include scheduling a zoom interview. The interview should take about 30-45 minutes. Your participation is voluntary, and your response will be kept anonymous. You will have the option to not respond to any question that you choose.

Agreement to participate will be interpreted as your informed consent to participate and that you are at least 18 years of age. If you have any questions about the project, feel free to ask me any questions or my faculty advisor, Dr. Marisa Cannata marisa.cannata@vanderbilt.edu.

If you have any questions regarding your rights as a participant, contact the Vanderbilt Institutional Review Board (IRB) at (615) 322-2918. Please print or save a copy of this page for your records.

Respectfully,

Hayley Benedict, Rita Lopez, Tiffany Sanchez

Appendix B

Survey to BCN Alumni

Q1 I was a student at the following institution:

(Select all that apply)

- Baltimore City Community College (1)
- Community College of Baltimore County (2)
- Coppin State University (3)
- Goucher College (4)
- Johns Hopkins University (including Carey Business School, JHMI, and Peabody) (5)
- Loyola University Maryland (6)
- Maryland Institute College of Art (MICA) (7)
- Morgan State University (8)
- Notre Dame of Maryland University (9)
- Stevenson University (10)
- Towson University (11)
- University of Baltimore (12)
- University of Maryland, Baltimore (all schools and programs) (13)
- University of Maryland, Baltimore County (UMBC) (14)
- University of Maryland, College Park (15)
- Other (16) _____

Q2 My highest level of education completed in Baltimore is a(n):

- Associates Degree (1)
- Bachelor's Degree (2)
- Master's Degree (3)
- Doctoral Degree (4)

Display This Question:

If My highest level of education completed in Baltimore is a(n): = Master's Degree

Or My highest level of education completed in Baltimore is a(n): = Doctoral Degree

Q3 Did you complete your undergraduate degree in the Baltimore region?

- No (1)
 - Yes (please write out the name of the institution below) (2)
-

Q4 When attending school in the Baltimore area, I was primarily a:

- Full-Time Student (1)
- Part-Time Student (2)

Q5 My home country is:

- The United States (2)
 - Outside of the United States (please type the name of your home country below): (1)
-

Display This Question:

If My home country is: = The United States

Q6 My home state is:

▼ Alabama (1) ... District of Columbia (52)

Q7 After graduation, my initial plans were to:

- find a job (1)
- apply to schools and continue my education (2)
- other (3) _____

Q8 How interested were you in remaining in the Baltimore region after graduation?

- Highly Interested (1)
- Somewhat Interested (2)
- Unsure (3)
- Somewhat Disinterested (4)
- Very Disinterested (5)

Q9 After graduation:

- I remained in the Baltimore region (1)
- I initially remained in the Baltimore region but then moved away (2)
- I left the Baltimore region (3)

Q10 How important was it to you to find a job related to your degree?

- Not at all important (1)
- Slightly important (2)
- Moderately important (3)
- Very important (4)
- Extremely important (5)

Q11 Did you find a job related to your degree after graduation?

- No (1)
- Yes (2)

Q12 What factors influenced your decision to leave or stay in the Baltimore area following graduation?

Q13 How would you rate the Baltimore region as a place to pursue higher education?

- Highly Desirable (1)
- Desirable (2)
- Neutral (3)
- Undesirable (4)
- Highly Undesirable (5)

Q14 How would you rate the Baltimore region as a place to live?

- Highly Desirable (1)

- Desirable (2)
- Neutral (3)
- Undesirable (4)
- Highly Undesirable (5)

Q15 How would you rate the Baltimore region as a place to work?

- Highly Desirable (1)
- Desirable (2)
- Neutral (3)
- Undesirable (4)
- Highly Undesirable (5)

Q16 What do you like best about Baltimore?

Q17 What do you like least about Baltimore?

Q18 Which of the following attractions or areas did you visit during your time in Baltimore?

(Select all that apply)

- Art museum/gallery (1)

- Canton (2)
- Charles Village (3)
- Federal Hall (4)
- Fell's Point (5)
- Hampdon (6)
- Harbor East (7)
- Historic Sites (8)
- Inner Harbor (9)
- Live Music Venues (10)
- Mt. Vernon (11)
- Movies (12)
- Nightclubs (13)
- Outdoor Festivals (14)
- Power Plant Live (15)
- Sporting Events (16)
- Station North (17)
- Theater (18)
- Towson (19)
- Towson Town Center (20)
- York Road Corridor/Belvedere Square (21)
- Other College Campuses (22)
- Other (please specify) (23)

Q19 During your time in Baltimore, how often did you use the following means of transportation?

	Never (1)	Sometimes (2)	About half the time (3)	Most of the time (4)	Always (5)

Public Transportation (bus, lightrail, etc.) (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Personal Car (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Uber, Lyft, Taxi, etc. (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Bike/Walk (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other (please specify) (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q20 Did you volunteer in the Baltimore area during school?

- No (1)
- Yes (2)

Display This Question:

If Did you volunteer in the Baltimore area during school? = Yes

Q21 Where did you volunteer?

Q22 Did you complete an internship while in school?

- No (1)
- Yes (2)

Display This Question:

If Did you complete an internship while in school? = Yes

Q23 Where did you complete your internship?

- Baltimore Region (4)
- My home state (5)
- Other (please specify) (6) _____

Q24 What did you use to help with internship, education, and career searches?

(Select all that apply)

- Career Services Office (1)
 - Faculty and staff at my university (2)
 - Social networking through family and friends at home (3)
 - Social networking through family and friends on campus (4)
 - Baltimore Collegetown Network website (5)
 - LinkedIn (6)
 - Recruitment sites (ex: ziprecruiter) (7)
 - Internet searches (ex: google) (8)
 - Other (please specify) (9)
-

Q25 When considering Baltimore as a place to LIVE and WORK, please rate your level of satisfaction with the following factors:

	Extremely dissatisfied (1)	Somewhat dissatisfied (2)	Neither satisfied nor dissatisfied (3)	Somewhat satisfied (4)	Extremely satisfied (5)
Proximity to green spaces (ex: parks) (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Presence of strong	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

academic
institutions (2)

City
architecture
and aesthetics
(3)

Opportunities
for leisure and
entertainment
(4)

Overall
friendliness
and open-
mindedness
(5)

LGBTQ
friendly (6)

Respect for
racial and
ethnic
diversity (7)

Access to
cultural or
religious
institutions (8)

0 0 0 0 0

0 0 0 0 0

0 0 0 0 0

0 0 0 0 0

0 0 0 0 0

0 0 0 0 0

Sense of community (9)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Availability of quality housing (10)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Housing affordability (11)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Transportation within the city (12)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Transportation in and out of the region (ex: train stations, airports, highways) (13)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q26 When considering Baltimore as a place to LIVE and WORK, please rate your level of satisfaction with the following factors:

	Extremely dissatisfied (1)	Somewhat dissatisfied (2)	Neither satisfied nor dissatisfied (3)	Somewhat satisfied (4)	Extremely satisfied (5)

Weather/Climate (1)	0	0	0	0	0
Size of city (2)	0	0	0	0	0
Job salaries (3)	0	0	0	0	0
Employment opportunities (4)	0	0	0	0	0
Proximity to family (5)	0	0	0	0	0
Overall cost of living (6)	0	0	0	0	0
Access to good hospitals and healthcare (7)	0	0	0	0	0
Quality of pre K-12 schools (8)	0	0	0	0	0
Local and regional politics (9)	0	0	0	0	0
Overall safety (10)	0	0	0	0	0

Crime rates (11)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Homelessness (12)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q27 Select the 5 MOST IMPORTANT factors that you considered when deciding whether to live and work in the Baltimore region following graduation.

- Proximity to green spaces (ex: parks) (1)
- Presence of strong academic institutions (2)
- City architecture and aesthetics (3)
- Opportunities for leisure and entertainment (4)
- Overall friendliness and open-mindedness (5)
- LGBTQ friendly (6)
- Respect for racial and ethnic diversity (7)
- Access to cultural or religious institutions (8)
- Sense of community (9)
- Availability of quality housing (10)
- Housing affordability (11)
- Transportation within the city (12)
- Transportation in and out of the region (ex: train stations, airports, highways) (13)
- Weather/Climate (14)
- Size of city (15)
- Job salaries (16)
- Employment opportunities (17)
- Proximity to family (18)
- Overall cost of living (19)
- Access to good hospitals and healthcare (20)
- Quality of pre K-12 schools (21)
- Local and regional politics (22)

- Overall safety (23)
- Crime rates (24)
- Homelessness (25)

Q28 I am:

(Select any or all that apply)

- Male (1)
 - Female (2)
 - Non-binary (3)
 - Transgender (4)
 - Not Listed (please specify) (5)
-

- Prefer not to disclose (6)

Q29 How old are you?

- Younger than 21 (1)
- 21-25 (2)
- 26-29 (3)
- 30+ (4)

Q30 Please select your self-identified race/ethnicity:

(Select one or more that apply)

- White/Caucasian (1)
 - Hispanic, Latino, or Spanish (2)
 - Black or African American (3)
 - Asian (4)
 - American Indian or Alaska Native (5)
 - Middle Eastern or North African (6)
 - Native Hawaiian or Other Pacific Islander (7)
 - Not listed (please specify) (8)
-

- Prefer not to disclose (9)

Q31 I identify as:

- Heterosexual (1)
- Gay or Lesbian (2)
- Bisexual (3)
- Other (4) _____
- Prefer not to disclose (5)

Q32 Please provide your email address:

All data in this survey will be kept confidential. Your email address will be used only for

Q33 Would you be interested in being contacted for a follow-up interview?

- Yes (1)
- No (2)

End of Block: Baltimore City Community College

Appendix C

Survey to BCN Students

BCN Seniors Survey

Q1 I am a student at the following institution:(Select from the drop-down list below)

▼ Baltimore City Community College (1) ... University of Maryland, College Park (15)

Q2 I plan to graduate this year with a(n):

- Associate Degree (1)
- Bachelor's' Degree (2)

Q3 I am a:

- Full-Time Student (1)
- Part-Time Student (2)

Q4 My home country is:

- The United States (2)
- Outside of the United States (please type the name of your home country below): (1)

Display This Question:

If My home country is: = The United States

Q5 My home state is:

(Select from the drop-down below)

▼ Alabama (1) ... District of Columbia (52)

Q6 After graduation, I plan to:

- find a job (1)
- apply to schools and continue my education (2)
- other (3) _____

Q7 How interested are you in staying in the Baltimore region after graduation?

- Highly Interested (1)
- Somewhat Interested (2)
- Unsure (3)
- Somewhat Disinterested (4)
- Very Disinterested (5)

Q9 What factors are currently influencing your decision to leave or stay in the Baltimore area following graduation?

Q8 How important is it to you to find a job related to your degree?

- Not at all important (1)
- Slightly important (2)
- Moderately important (3)
- Very important (4)
- Extremely important (5)

Q10 How would you rate the Baltimore region as a place to pursue higher education?

- Highly Desirable (1)
- Desirable (2)
- Neutral (3)
- Undesirable (4)
- Highly Undesirable (5)

Q11 How would you rate the Baltimore region as a place to live?

- Highly Desirable (1)

- Desirable (2)
- Neutral (3)
- Undesirable (4)
- Highly Undesirable (5)

Q12 How would you rate the Baltimore region as a place to work?

- Highly Desirable (1)
- Desirable (2)
- Neutral (3)
- Undesirable (4)
- Highly Undesirable (5)

Q13 What do you like best about Baltimore?

Q14 What do you like least about Baltimore?

Q15 Which of the following attractions or areas did you visit during your time in Baltimore?

(Select all that apply)

- Art museum/gallery (1)
 - Canton (2)
 - Charles Village (3)
 - Federal Hall (4)
 - Fell's Point (5)
 - Hampdon (6)
 - Harbor East (7)
 - Historic Sites (8)
 - Inner Harbor (9)
 - Live Music Venues (10)
 - Mt. Vernon (11)
 - Movies (12)
 - Nightclubs (13)
 - Outdoor Festivals (14)
 - Power Plant Live (15)
 - Sporting Events (16)
 - Station North (17)
 - Theater (18)
 - Towson (19)
 - Towson Town Center (20)
 - York Road Corridor/Belvedere Square (21)
 - Other College Campuses (22)
 - Other (please specify) (23)
-

Q16 During your time in Baltimore, how often have you used the following means of transportation?

	Never (1)	Sometimes (2)	About half the time (3)	Most of the time (4)	Always (5)
Public Transportation (bus, lightrail, etc.) (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Personal Car (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Uber, Lyft, Taxi, etc. (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Bike/Walk (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other (please specify) (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q17 Do you volunteer in the Baltimore area?

- No (1)
- Yes (2)

Display This Question:

If Do you volunteer in the Baltimore area? = Yes

Q18 Where do you volunteer?

Q19 Have you planned to complete or have you completed an internship?

- Yes (1)
- No (2)

Display This Question:

If Have you planned to complete or have you completed an internship? = Yes

Q20 Where did you complete your internship?

- Baltimore Region (4)
- My home state (5)
- Other (please specify) (6) _____

Q21 What resources have you used to get information about internships, education opportunities, and career searches?

(Select all that apply)

- Career Services Office (1)
- Faculty and staff at my university (2)
- Social networking through family and friends at home (3)
- Social networking through friends and student organizations on campus (4)
- Baltimore Collegetown Network website (5)
- LinkedIn (6)
- Recruitment sites (ex: ziprecruiter) (7)
- Internet searches (ex: Google) (8)
- Other (please specify) (9)

Q22 When considering Baltimore as a place to LIVE and WORK, please rate your level of satisfaction with the following factors:

	Extremely dissatisfied (1)	Somewhat dissatisfied (2)	Neither satisfied nor dissatisfied (3)	Somewhat satisfied (4)	Extremely satisfied (5)
Proximity to green spaces (ex: parks) (1)	0	0	0	0	0
Presence of strong academic institutions (2)	0	0	0	0	0
City architecture and aesthetics (3)	0	0	0	0	0
Opportunities for leisure and entertainment (4)	0	0	0	0	0
Overall friendliness and open- mindedness (5)	0	0	0	0	0
LGBTQ friendly (6)	0	0	0	0	0

Respect for racial and ethnic diversity (7)	0	0	0	0	0
Access to cultural or religious institutions (8)	0	0	0	0	0
Sense of community (9)	0	0	0	0	0
Availability of quality housing (10)	0	0	0	0	0
Housing affordability (11)	0	0	0	0	0
Transportation within the city (12)	0	0	0	0	0
Transportation in and out of the region (ex: train stations, airports, highways) (13)	0	0	0	0	0

Q23 When considering Baltimore as a place to LIVE and WORK, please rate your level of satisfaction with the following factors:

	Extremely dissatisfied (1)	Somewhat dissatisfied (2)	Neither satisfied nor dissatisfied (3)	Somewhat satisfied (4)	Extremely satisfied (5)
Weather/Climate (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Size of city (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Job salaries (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Employment opportunities (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Proximity to family (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Overall cost of living (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Access to good hospitals and healthcare (7)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Quality of pre K-12 schools (8)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Local and regional politics (9)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Overall safety (10)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Crime rates (11)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Homelessness (12)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q24 Select the 5 MOST IMPORTANT factors to consider when deciding whether to live and work in the Baltimore region following graduation.

- Proximity to green spaces (ex: parks) (1)
- Presence of strong academic institutions (2)
- City architecture and aesthetics (3)
- Opportunities for leisure and entertainment (4)
- Overall friendliness and open-mindedness (5)
- LGBTQ friendly (6)
- Respect for racial and ethnic diversity (7)
- Access to cultural or religious institutions (8)
- Sense of community (9)
- Availability of quality housing (10)
- Housing affordability (11)
- Transportation within the city (12)

- Transportation in and out of the region (ex: train stations, airports, highways) (13)
- Weather/Climate (14)
- Size of city (15)
- Job salaries (16)
- Employment opportunities (17)
- Proximity to family (18)
- Overall cost of living (19)
- Access to good hospitals and healthcare (20)
- Quality of pre K-12 schools (21)
- Local and regional politics (22)
- Overall safety (23)
- Crime rates (24)
- Homelessness (25)

Q25 I am:

(Select any or all that apply)

- Male (1)
- Female (2)
- Non-binary (3)
- Transgender (4)
- Not Listed (please specify) (5)

-
- Prefer not to disclose (6)

Q26 How old are you?

- Younger than 21 (1)
- 21-25 (2)
- 26-29 (3)
- 30+ (4)

Q27 Please select your race/ethnicity:

(Select one or more that apply)

- White/Caucasian (1)
 - Hispanic, Latino, or Spanish (2)
 - Black or African American (3)
 - Asian (4)
 - American Indian or Alaska Native (5)
 - Middle Eastern or North African (6)
 - Native Hawaiian or Other Pacific Islander (7)
 - Not listed (please specify) (8)
-

- Prefer not to disclose (9)

Q28 I identify as:

- Heterosexual (1)
- Gay or Lesbian (2)
- Bisexual (3)
- Other (4) _____
- Prefer not to disclose (5)

Q29 Please provide your email address
(to be used for the prize drawing)

Q30 Would you be interested in being contacted for a follow-up interview?

- Yes (1)
- No (2)

Appendix D

Interview Protocols

In designing our data collection plan, we chose to include both surveys with embedded open-response items and interviews. Our goal is to better understand the quantitative and qualitative data derived from the surveys. Participation in interviews was optional and sourced by voluntary identification within the survey. Interviews lasted between 30-60 minutes each. Interviews were semi-structured and conducted virtually via an electronic platform such as Zoom. Interviews will be audio-recorded for transcription and data analysis.

Pre-interview Demographic Questions Collected via Email in Advance of Interview:

Hometown:

Current town: Baltimore

School(s) Attended: University of Baltimore

Years Attended:

Degree(s) and Major(s):

Opening statement to the interviewee:

Every question should be viewed through the lens of “if you’re comfortable” and I want you to feel at ease and free to decline to answer anything I ask. My intent is to better understand your educational experience within the Baltimore region and the decisions you made in deciding to stay in or leave the area following education. I appreciate the time you’re giving me.

Core questions for all interviewees:

1. Tell me about your decision to pursue higher education in the Baltimore region and why you selected the school you chose. (Type: semi-structured; specific grand tour)
2. Tell me about your experience as a student in Baltimore while earning your degree and what opportunities you had to connect with individuals or organizations outside your school. (Type: semi-structured; general grand tour; experience, example)
3. Could you share with me some examples of how you spent the majority of your time outside the classroom. (Type: semi-structured; general grand tour; experience, example)
 - a. If they struggle to answer, probe about whether there were programs, social events, cultural events, sporting events, organizations, etc. that encouraged them to get to know Baltimore or participate in activities beyond school.

4. Tell me about the Baltimore region as a place to study, work, and live. What are examples of its strengths and weaknesses? (Type: semi-structured, example; experience)
 - a. If they struggle to answer, ask about positive or negative experiences in the Baltimore area.
5. How did you decide/are you deciding where to live and what kind of work you would pursue after graduation? What resources, people, and factors contributed to your decision, and in what way? For alumni, how long ago did you graduate and do you think you made the right decision? Why/Why not? (Type: semi-structured; general grand tour; experience, example)

Optional questions to ask if appropriate:

For students planning to stay in Baltimore or alumni who stayed for any length of time:

Did you find work in Baltimore in your chosen field of study?

What was the job search like?

How did you find your role?

And...for any alumni who left after staying for a while:

What influenced your decision to leave the Baltimore area?

Where did you go and how does it compare to Baltimore?

For any student/alumni:

Specific Follow-up questions to survey results (review answers/ratings of Baltimore....before interview).

Closing statement to the interviewee:

I want to thank you so much for your openness and willingness to speak with me. I appreciate the time you've given me and really enjoyed speaking with you. If I need clarification on anything or think of anything I've forgotten, is it okay if I follow up with an email?

Appendix E

Qualitative Coding

Initial Plan to Interview Coding

Deductive Codes	
Code	Definition
Positive Campus Experience	Reference to an impactful positive experience occurring on campus during a student's education
Positive Baltimore Experience	Reference to an impactful positive experience occurring off campus in Baltimore during a student's education
Negative Campus Experience	Reference to an impactful negative experience occurring on campus during a student's education
Negative Baltimore Experience	Reference to an impactful negative experience occurring off campus in Baltimore during a student's education
Baltimore Quality of Life	Reference to one of the Quality of Life indicators noted in the survey specific to Baltimore
Quality of Life	A general reference to one of the Quality of Life indicators noted in the survey
Degree-Industry	Reference to a student's degree and industry factors
Job Search	Reference to the process a student undertook to search for post-graduation employment
College Search	Reference to how a student chose a college/university
Home and Family	Reference to a student's hometown or family
Faculty-Staff	Reference to the faculty or staff of a BCN member institution

Figure E1. Initial Deductive Codes Established for Interviews

Status	Factors Open-ended	# Responses
Alumni	Employment and Salaries	226
Alumni	Family	126
Alumni	Social Relationships	80
Alumni	Love of the City and Communities	64
Alumni	Education	41
Alumni	Hometown	33
Alumni	Personal Reasons	27
Alumni	Cost of Living	20
Alumni	City Attractions	18
Alumni	Crime and Safety	12
Alumni	Living Conditions	11
Alumni	Transportation	10
Alumni	Geographical Location of the City	9
Alumni	Weather and Climate	6
Alumni	Pandemic	5
Alumni	Socioeconomic and Racial Factors	4
Alumni	International Student Obstacles	3

Figure E2. Alumni Open-Ended Survey Responses: What Factors Are Currently Influencing Your Decision to Leave or Stay in the Baltimore Area Following Graduation?

Status	Factors Open-ended	# Responses
Students	Employment and Salaries	94
Students	Education	46
Students	Family	45
Students	Cost of Living	28
Students	Love of the City and Communities	26
Students	Hometown	23
Students	Personal Reasons	21
Students	Crime and Safety	20
Students	Social Relationships	18
Students	Geographical Location of the City	14
Students	Transportation	10
Students	Living Conditions	9
Students	City Attractions	8
Students	Weather and Climate	3
Students	International Student Obstacles	2
Students	Pandemic	2
Students	Political Climate	1
Students	Socioeconomic and Racial Factors	1

Figure E3. Student Open-Ended Survey Responses: What Factors Are Currently Influencing Your Decision to Leave or Stay in the Baltimore Area Following Graduation?

Appendix F

Quantitative Analysis Results

Research Question 1 Tables

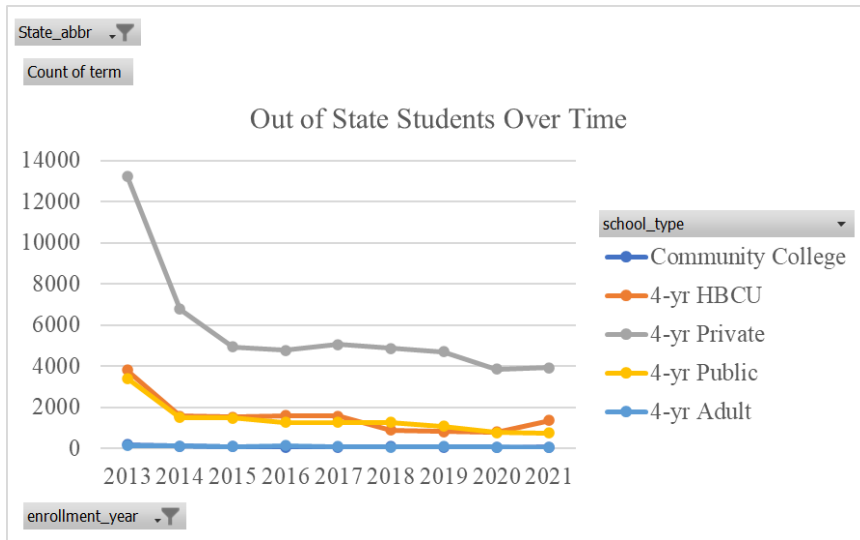


Figure F1. Out-of-State Students Matriculating to BCN Institutions Over Time

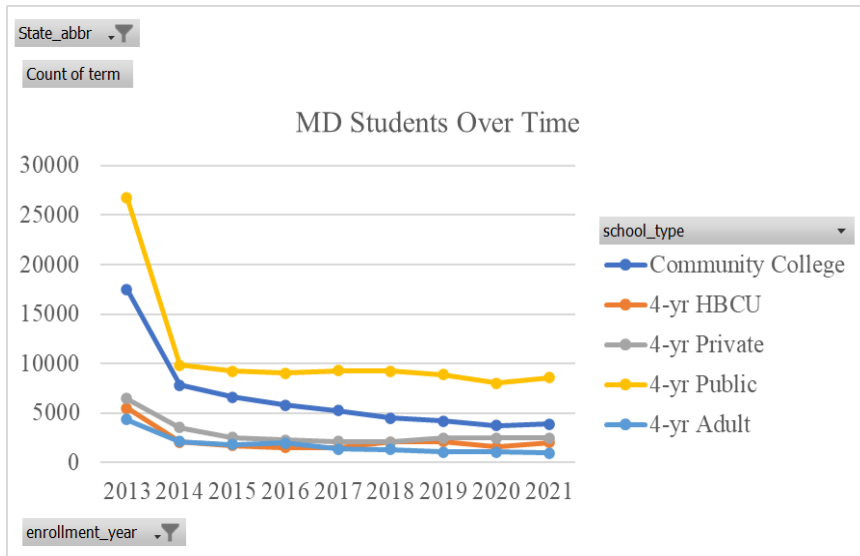


Figure F2. Maryland Students Matriculating to BCN Institutions Over Time

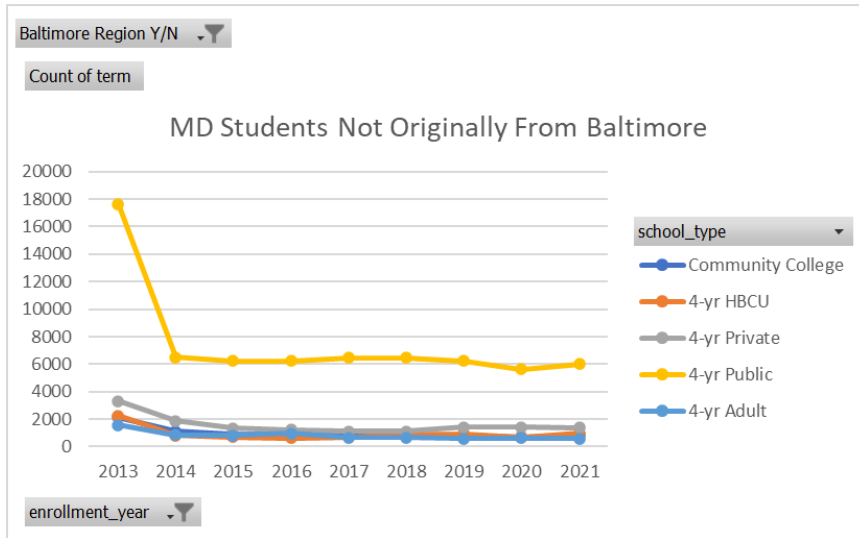


Figure F3. Non-Baltimore Maryland Students Matriculating to BCN Institutions Over Time

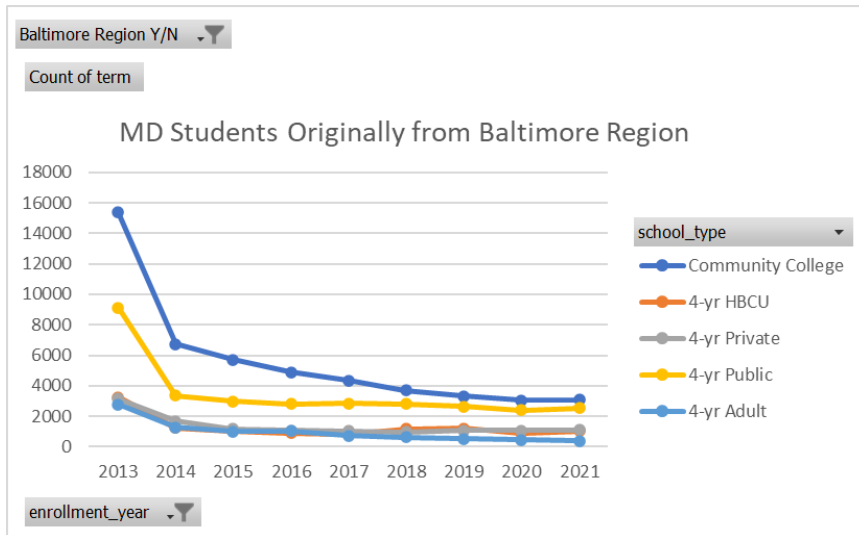


Figure F4. Students Originally from Baltimore Matriculating to BCN Institutions Over Time

Research Question 2 Figures

Variables	Alumni							
	Total		Stayed in B-more		Left B-more		Stayed then Left	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Volunteering status	0.5	0.5	0.58	0.49	0.31*	0.46	0.38*	0.49
Internship status	0.75	0.43	0.78	0.41	0.55*	0.5	0.77*	0.42
Rating employment opportunities*	3.76	1.06	3.94	1.01	3.16*	1.05	3.51*	1.03
Rating homelessness	3.07	1.27	3.13	1.29	2.25*	1.03	3.35*	1.13
Rating housing affordability	3.5	1.12	3.61	1.13	2.81*	1.07	3.51*	0.94
Rating healthcare access	3.92	0.94	4	0.95	3.55*	0.97	3.85*	0.85
Rating proximity to family*	3.77	1.08	3.95	1	3.18*	1.19	3.49*	1.11
Rating city aesthetics	3.88	1.04	4.02	1.02	3.46*	1.03	3.66*	0.99
Presence of strong academic institutions	3.98	0.94	4.08	0.9	3.84*	0.88	3.72*	1.04
Rating overall safety*	3.44	1.24	3.59	1.21	2.37*	1.16	3.59*	1.08
Rating job salaries*	3.71	1.03	3.9	0.97	2.96*	0.97	3.48*	1
Rating crime	3.16	1.35	3.26	1.35	2.14*	1.17	3.44*	1.18
Rating overall cost of living*	3.6	1.06	3.7	1.07	3.07*	1.04	3.58*	0.94
Rating housing availability	3.67	1.1	3.84	1.08	2.8*	1.1	3.61*	0.94
Rating sense community	3.78	1.03	3.9	1	3.24*	1.15	3.67*	0.98
Notes : Factors rated on scale of 1 to 5, with 1= "Extremely dissatisfied", 2 = "Somewhat dissatisfied", 3 = "Neither satisfied nor dissatisfied", 4 = "Somewhat satisfied", and 5 = "Extremely satisfied" Volunteer and Internship factors rated on a scale of 0 to 1 with 0= "No", 1= "Yes" *p-value<.05	n=701		n=473		n=85		n=143	

Figure F5. Regression, Means, and Standard Deviation Results from Alumni Survey

Variables	Seniors							
	Total		Interested		Not Interested		Unsure	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Volunteering status	0.37	0.48	0.43	0.5	0.3*	0.46	0.23*	0.43
Internship status	0.69	0.46	0.73	0.44	0.72	0.45	0.54*	0.5
Rating employment opportunities*	3.5	1.11	3.68	1.08	2.86*	1.05	3.42*	1.05
Rating homelessness	2.25	1.16	2.44	1.23	1.72*	0.91	2.05	0.92
Rating housing affordability	3.05	1.3	3.28	1.33	2.58*	1.17	2.67*	1.06
Rating healthcare access	3.63	1.08	3.89	0.98	2.95*	1.1	3.28*	1.05
Rating proximity to family*	3.75	1.13	3.93	0.98	3.49*	1.28	3.31*	1.35
Rating city aesthetics	3.77	1.05	3.94	0.96	3.31*	1.16	3.58*	1.07
Presence of strong academic institutions	3.99	0.96	4.2	0.84	3.41*	1.15	3.77*	0.92
Rating overall safety*	2.52	1.26	2.75	1.3	1.72*	0.96	2.42*	1.05
Rating job salaries*	3.37	1.13	3.6	1.13	2.64*	1	3.19*	0.93
Rating crime	2.24	1.25	2.48	1.33	1.58*	0.9	2*	0.95
Rating overall cost of living*	3.15	1.19	3.41	1.19	2.58*	1.1	2.72*	0.98
Rating housing availability	3.13	1.29	3.39	1.28	2.53*	1.29	2.72*	1.05
Rating sense community	3.59	1.11	3.85	0.98	2.93*	1.23	3.28*	1.1
Notes : Factors rated on scale of 1 to 5, with 1= "Extremely dissatisfied", 2 = "Somewhat dissatisfied", 3 = "Neither satisfied nor dissatisfied", 4 = "Somewhat satisfied", and 5 = "Extremely satisfied" Volunteer and Internship factors rated on a scale of 0 to 1 with 0= "No", 1= "Yes" *p-value<.05	n=301		n=193		n=60		n=48	

Figure F6. Regression, Means, and Standard Deviation Results from Student Survey

Student Top Five Indicators in Decision-Making	
Interested (n=193)	
1. Employment opportunities	45.08%
2. Job salaries	36.79%
3. Cost of living	32.64%
4. Availability of affordable housing	27.46%
5. Overall safety	26.42%
Not Interested (n=60)	
1. Overall safety	35.00%
2. Employment opportunities	33.33%
2. Cost of living	33.33%
2. Availability of quality housing	33.33%
5. Job salaries	26.67%

Figure F7. Results From Students Listing Top Indicators that Influence Decision-Making.

Alumni Top Five Indicators in Decision-Making	
I stayed in Baltimore (n=473)	
1. Employment opportunities	55.81%
2. Job salaries	47.78%
3. Proximity to family	37.63%
4. Cost of living	30.66%
5. City architecture and aesthetics	30.02%
I Left Baltimore (n=85)	
1. Employment opportunities	49.41%
2. Cost of living	47.06%
3. Job salaries	44.71%
4. Overall safety	42.35%
5. Proximity to family	35.29%

Figure F8. Results From Students Listing Top Indicators that Influence Decision-Making.

Variables	Alumni							
	Left Baltimore				Stayed and then Left			
	Estimate	Standard Error	Statistic	p.value	Estimate	Standard Error	Statistic	p.value
Volunteering status	0.3256473	0.2531054	-4.432701	9.31E-06	0.4618555	0.1954406	-3.952624	7.73E-05
Internship status	0.3433806	0.2449414	-4.3639645	1.28E-05	0.9543549	0.2296634	-0.2034266	8.39E-01
Rating employment opportunities	0.51	0.11	-6.12	9.40E-10	0.67	0.09	-4.39	1.14E-05
Rating homelessness	0.5608797	0.10294203	-5.6172272	1.94E-08	1.1566163	0.07884983	1.8452644	6.50E-02
Rating housing affordability	0.5425303	0.10735993	-5.6958995	1.23E-08	0.9188449	0.08820682	-0.9595391	3.37E-01
Rating healthcare access	0.6207694	0.1198469	-3.9783724	6.94E-05	0.8398303	0.1020496	-1.7104956	8.72E-02
Rating proximity to family	0.5275438	0.11092895	-5.765162	8.16E-09	0.670038	0.08941097	-4.478432	7.52E-06
Rating overall safety	0.4493999	0.10604451	-7.54251319	4.61E-14	0.9982453	0.08125716	-0.02161386	9.83E-01
Rating job salaries	0.42	0.12	-7.33	2.15E-13	0.65	0.1	-4.45	8.46E-06
Rating overall cost of living	0.59	0.11	-4.86	1.16E-06	0.9	0.09	-1.19	2.32E-01
Rating importance of job-degree match	0.5615764	0.2491798	-2.315627	2.06E-02	0.6396462	0.2068654	-2.160053	3.08E-02

Figure F9. Multinomial Regression Analysis Results for Alumni

Variables	Students							
	Not Interested				Unsure			
	Estimate	Standard Error	Statistic	p.value	Estimate	Standard Error	Statistic	p.value
Volunteering status	0.5814145	0.3545948	-1.529327	1.26E-01	0.4060672	0.3764914	-2.393777	1.67E-02
Internship status	0.9603363	0.3679999	-0.1099776	0.912427109	0.4371279	0.3416257	-2.4223273	0.015421454
Rating employment opportunities	0.5090681	0.1638619	-4.1203817	3.78E-05	0.7956504	0.158748	-1.4399891	1.50E-01
Rating homelessness	0.5240808	0.1885021	-3.42759726	0.000608948	0.7375069	0.1590475	-1.91439527	0.055569669
Rating housing affordability	0.6438285	0.138144	-3.18742017	0.001435481	0.6850681	0.1385331	-2.73030117	0.006327649
Rating healthcare access	0.4342426	0.1715297	-4.863018	1.16E-06	0.5617067	0.1675508	-3.442392	5.77E-04
Rating proximity to family	0.7001388	0.1505071	-2.36850437	0.01786017	0.6197176	0.1502882	-3.18382469	0.00145343
Rating overall safety	0.4342832	0.1875493	-4.447142	8.70E-06	0.7956504	0.158748	-1.4399891	1.50E-01
Rating job salaries	0.437474	0.179537	-4.6048348	4.13E-06	0.7074703	0.1593555	-2.1716203	2.99E-02
Rating overall cost of living	0.5411301	0.1552248	-3.9561694	7.62E-05	0.6003398	0.1520987	-3.3547908	7.94E-04

Figure F10. Multinomial Regression Analysis Results for Alumni