



MEDC

2017 Michigan Post Higher Education Study

Conducted on Behalf of

The Michigan Economic Development Corporation (MEDC)

By

The Office for Survey Research
Institute for Public Policy and Social Research

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EXECUTIVE SUMMARY

Overview

The purpose of the 2017 Michigan Post Higher Education Study was to assist the Michigan Economic Development Corporation (MEDC) in learning more about where Michigan's recent college graduates go after graduation and what factors influence their decisions concerning where to live and start their careers. A web-based survey focusing on factors such as employment, perceptions of Michigan, and the importance of various economic and lifestyle considerations was administered to respondents who graduated from one of Michigan's 15 public universities in 2017, recruited from lists provided by the universities themselves. A total of 6,663 graduates completed the survey between November 2, 2017 and December 11, 2017.

Basic Conclusions

Over 36 percent of recent graduates from Michigan's public colleges and universities have left the state. These losses are not unusually large compared to other states in the Midwestern United States, yet they still exceed the number of young college graduates Michigan attracts from elsewhere (though in-migration of college graduates has increased since 2010). Although majorities of young graduates have personal ties to the state, are open to staying, and actively pursued employment opportunities in Michigan, many end up leaving anyway. Job opportunities and other career-related factors were consistently found to be among the most important reasons for moving out of state, although lifestyle factors such as the availability of cultural and recreational activities play an important role as well. Michigan is especially losing graduates with engineering degrees, those who go on to work in education or technical fields, and those with PhD degrees.

Whether these trends continue or reverse course will largely part depend on whether graduates see good career opportunities in their field and an exciting, attractive lifestyle when they consider their possible future in Michigan. According to the data, among the most effective ways to keep more graduates in-state would be to promote job growth (especially in technical and engineering fields), develop attractive urban city centers and more diverse communities, and increase the variety of cultural and social activities available.

Current Location

In general, respondents reported having settled in areas where they have close personal ties or in dense metropolitan areas. Most respondents who stayed in Michigan tend to live near its most populous cities and the main campuses of Michigan's largest public universities and colleges, while those who left the state tend to stay close to the Midwest and/or move to large urban centers such as Chicago, New York, Seattle, and the District of Columbia. Graduates living outside of Michigan were almost twice as likely as those who stayed in-state to report living in an urban area, suggesting that those who leave tend to wind up in big cities.

Employment and Income

Economic outcomes among current Michigan residents have improved over the last four years (based on comparisons to a similar study conducted in 2013), but have not yet caught up with those living elsewhere. Compared to those who moved out of state, respondents who stayed in Michigan reported a *lower* rate of full-time employment, *lower* median income, and a *higher* prevalence of working a job that is not related to their long-term careers. Such deficits are consistent with the findings of the 2013 study, but the newer results suggest a favorable trend

over time – Michigan has actually narrowed the gap in each of these areas over the last four years, becoming increasingly competitive with other states in terms of employment and income.

Those who left Michigan reported having spent a longer period of time searching for a job after graduation, and 41 percent of them looked for employment in Michigan before moving. In fact, those who looked for work in Michigan but received no in-state offers reported job searches of especially long durations. That suggests that many graduates were initially open to staying in-state, but eventually applied for positions elsewhere because they felt it was taking too long to find employment in Michigan. In other words, there is a substantial group of graduates who could be realistically retained in-state if the conditions (including employment opportunities) were more conducive. The data suggest these particular graduates are more likely than others to have advanced degrees and to work in the education, manufacturing, or information industries.

Perceptions of Michigan

Overall, respondents expressed generally favorable attitudes toward the state of Michigan, and those who came from out-of-state to attend college indicated that their opinion of the state – especially toward its weather, aesthetic appeal, and future outlook²³ – *improved*, on average, after they actually lived there. When asked where in Michigan they could see themselves living, respondents expressed the strongest interest in living near major cities in west, southeast, and central Michigan but relatively little interest in living in the state’s northern regions. In head-to-head matchups, Ann Arbor and Grand Rapids were preferred by most respondents over each of 10 cities in other states whereas majorities reported they would rather live out of state than in the Upper Peninsula. Among the out-of-state options, Denver and Chicago were chosen as the most attractive options when pitted head-to-head against Michigan cities, while Cleveland and St. Louis fared the worst.

Happiness and Satisfaction

On the whole, respondents reported being happy and satisfied with their lives, although those living outside Michigan were even happier than those who stayed. Although respondents expressed similar levels of happiness toward their personal life regardless of their current location, those who had moved out of state expressed higher levels of happiness toward their overall, their community as a place to live, and their job or employment situation compared to current Michigan residents who took the survey. Michigan residents also reported a lower level of personal engagement with their current job and evaluated their quality of life slightly less favorably, yet were (on average) more optimistic about how much their life would improve in the future.

Who Leaves and Who Stays

Analyses of why graduates chose to stay in Michigan or leave suggest that the decision to leave Michigan is driven heavily by where one is able to find work, while the decision to stay is often driven by environmental factors and close personal ties to the area (such as considering it “home” and having family and friends nearby). Respondents who rated factors pertaining to cost of living, the natural environment, and raising a family as being more important were more likely to *stay* in Michigan than those who rated these factors as less important. Meanwhile, those who rated factors pertaining to job opportunities, cultural and social recreational activities, openness to diversity, and mass transit as being more important were more likely to *leave* Michigan than those who rated such factors as less important.

SECTION I. INTRODUCTION

This study was conducted on behalf of the Michigan Economic Development Corporation (MEDC) with support from the 15 public universities in the state of Michigan, for the primary purpose of learning more about where Michigan's recent college graduates go after graduation and what factors influence their decisions concerning where to live and start their careers. A workforce replete with highly skilled professionals will be needed to fill an impending "talent vacuum" as baby-boomers approach retirement age,ⁱ which makes retaining talented graduates from in-state institutions an even more urgent concern for states across the country.

In 2013, the MEDC and Detroit Regional Chamber, in collaboration with the President's Council, State Universities of Michigan and the Michigan Municipal League, conducted a survey of the May 2012 graduates of Michigan's public universities exploring whether graduates stayed in Michigan or moved away, and various differences between those who moved and those who stayed. The present study extends this earlier research to a new cohort of recent graduates, and addresses several new topics such as subjective perceptions of the state of Michigan, interest in living in particular areas of the state and country, and how happy graduates are with various aspects of their lives.

Methodology

Between November 2017 and December 2017, Michigan State University's Office for Survey Research (OSR) and the University of Michigan conducted a web-based survey of 6,663 recent alumni who graduated from one of Michigan's 15 public universities in 2017, from contact lists provided by each university. The online survey instrument was programmed and administered using Qualtrics Professional Edition software, and respondents were recruited via email invitations to participate.

SECTION II. CURRENT LOCATION

Respondents to the 2017 Michigan Post Graduation Study were asked whether they currently still live in Michigan, somewhere else in the United States, or somewhere outside the United States. As shown in Table 1, nearly 64 percent indicated that they still live in Michigan, while 32 percent have left the state. Compared with all respondents to the 2013 survey, this would indicate that slightly fewer graduates are now choosing to stay in Michigan than before.

The map in Figure 1 shows that the respondents are spread fairly broadly across the state of Michigan, but especially near major metropolitan areas and the main campuses of Michigan's largest public universities and colleges.

Table 1. Current Residence, Compared to 2013

	% in 2017	% in 2013
Michigan	63.9	66.5
Elsewhere in the US	31.9	30.3
Elsewhere outside of the US	4.1	3.2

Figure 1. Current Zip Code, among Michigan Residents

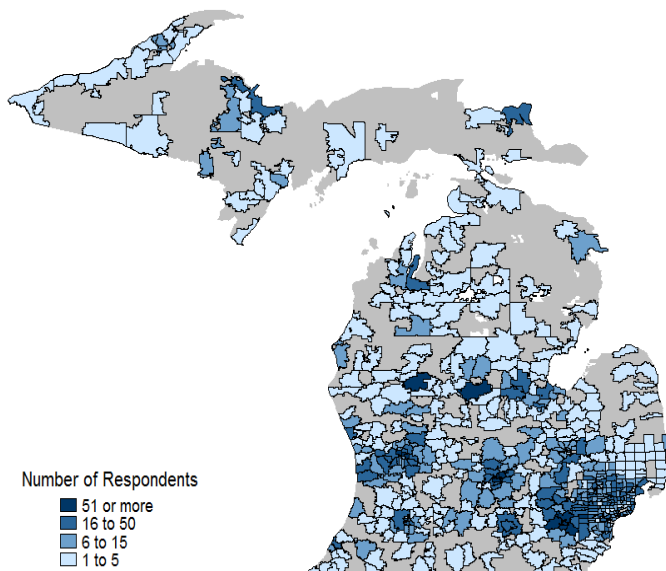


Table 2. Most Common Metro Areas of Residence, Among Those Living in MI

Metro Area	% of MI Sample
Detroit – Warren – Livonia	39%
Ann Arbor	14%
G.R. – Muskegon – Holland	13%
Lansing – East Lansing	10%
Kalamazoo – Portage	4%
Saginaw – Bay City – Midland	3%
Flint	3%
Mt. Pleasant	2%
Big Rapids	1%
Marquette	1%

Among those living in Michigan, nearly two-fifths (39 percent) of respondents reported living in a ZIP code within the Detroit – Warren – Livonia metro area. Another 14 percent reported living in the Ann Arbor area, while 13 percent said they live in the Grand Rapids – Muskegon – Holland metro area.

The sparsest areas of Michigan, in terms of the concentration of respondents living there, were the thumb, northern Lower Peninsula, and Upper Peninsula.

As shown in Figure 2, of the 32 percent of respondents who moved elsewhere in the United States, the most common destinations were Illinois, California, New York, and Ohio. Nearly three-fourths (72 percent) of all respondents still live somewhere in the Midwest (defined here as Michigan, Wisconsin, Illinois, Indiana, and Ohio), six percent live on the west coast (California, Oregon, and Washington), and four percent live in the northeast (i.e., New York and New England).

However, all 50 states plus the District of Columbia are represented by at least one respondent in the dataset.

These relocation patterns are again similar to those reported in the 2013 survey, in which the top out-of-state destinations for the “young mobile talent” (i.e., those who are 28 years old or younger, single, born in the United States, and not currently pursuing another degree) that left Michigan were Illinois, California, New York, and Texas.

When graduates of Michigan’s public universities do leave the state, the results indicate they tend to end up settling in large urban city centers. Table 3 lists the top 10 ZIP codes where respondents living in Michigan and outside Michigan said they currently reside, and each has been categorized as “urban,” “suburban,” or “rural” according to its population density (see footnote in the table for full details). Whereas the ZIP codes where current Michigan residents most frequently reported living reflect a mix of urban, suburban, and rural areas, all 10 of the top ZIP codes outside Michigan are large urban centers.

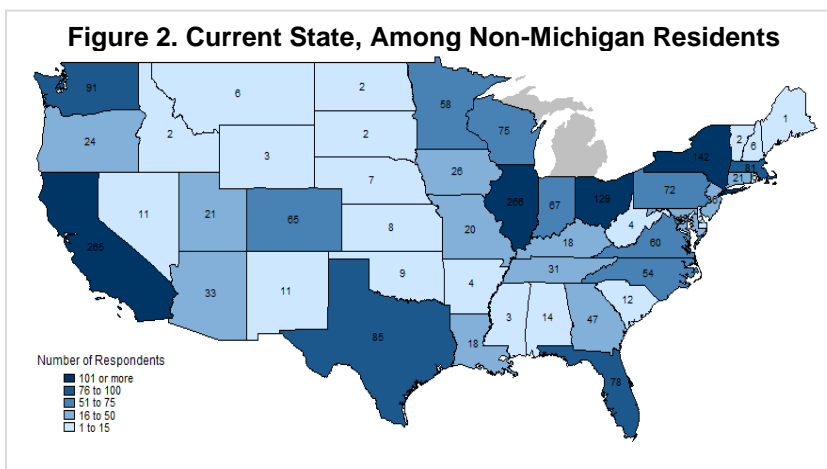


Table 3. Top 10 ZIP Codes in Michigan and Outside Michigan

<u>In Michigan</u>					<u>Outside Michigan</u>				
Rk	ZIP	City	Urbanicity ^a	n	Rk	ZIP	City	Urbanicity ^a	n
1	48104	Ann Arbor	Urban	167	1	60657	Chicago, IL	Urban	41
2	48823	East Lansing	Suburban	125	2	60614	Chicago, IL	Urban	23
3	48103	Ann Arbor	Rural	120	3	60654	Chicago, IL	Urban	14
4	48105	Ann Arbor	Rural	109	4	60610	Chicago, IL	Urban	13
5	48858	Mt. Pleasant	Rural	89	5	60613	Chicago, IL	Urban	13
6	48197	Ypsilanti	Suburban	77	6	20009	Washington, DC	Urban	10
7	49504	Grand Rapids	Urban	56	7	98109	Seattle, WA	Urban	10
8	49503	Grand Rapids	Urban	52	8	10016	New York, NY	Urban	8
9	48912	Lansing	Urban	49	9	20001	Washington, DC	Urban	8
10	48910	Lansing	Suburban	45	10	20008	Washington, DC	Urban	8

^a Urbanicity is defined here based on population density, using the definitions used by the US Department of Health and Human Services for the Medicare Modernization Act of 2003. “Urban” refers to ZIP codes with more than 3,000 people per square mile, “Suburban” refers to ZIP codes with between 1,000 and 3,000 people per square mile, and “Rural” refers to ZIP codes with fewer than 1,000 people per square mile. See <<https://www.cms.gov/Regulations-and-Guidance/Regulations-and-Policies/QuarterlyProviderUpdates/downloads/cms4063ifc.pdf>>

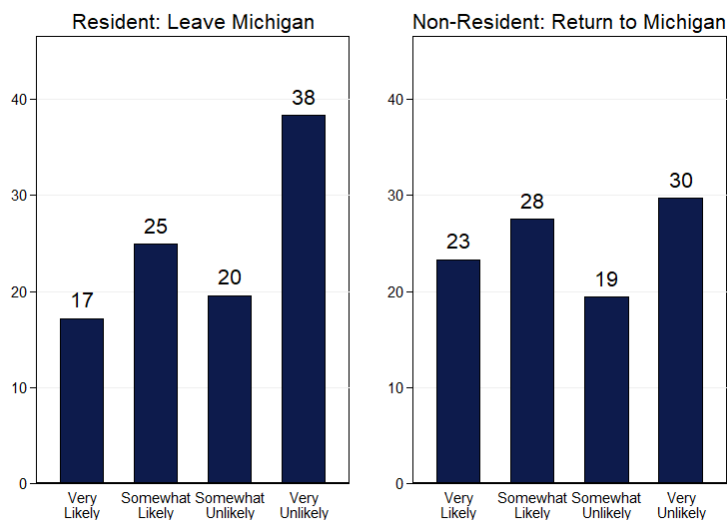
In fact, Table 4 shows that most of those who left the state (57 percent) reported living in an urban ZIP code – making them almost twice as likely to live in an urban area as those who stayed in Michigan (30 percent).

Respondents were also asked to estimate how likely it is that they will leave Michigan (for those currently living in the state) or return to Michigan (for those living elsewhere) within the next five years. Responses were given on a four-point scale ranging from “very likely” to “very unlikely.”

Table 4. Urbanicity of Respondents’ Current ZIP Codes

	All Respondents	MI Residents	Non-Residents
Rural	34%	40%	22%
Suburban	28%	31%	22%
Urban	39%	30%	57%
Number of Respondents	6,246	4,192	2,054

Figure 3. Reported Likelihood of Current Residents Leaving Michigan and Non-Residents Returning to Michigan



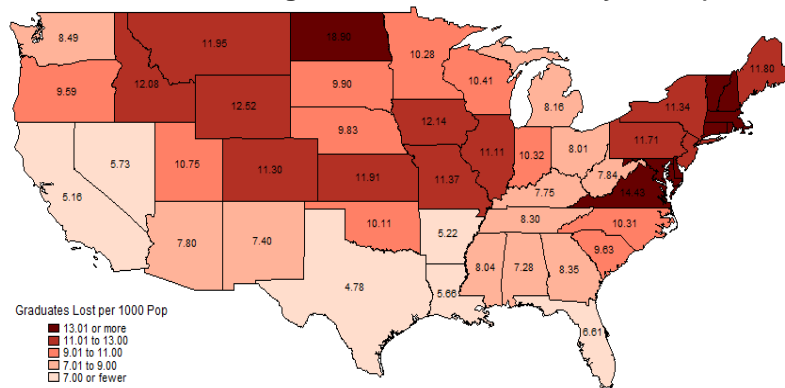
The results, which are displayed in Figure 3, indicate that non-residents are reportedly *more likely* to return to Michigan than current residents are to leave. About half (51 percent) of current non-residents said they would be likely to return, whereas just 42 percent of Michigan residents said they would be likely to leave. It should be noted, however, that non-residents with no intention of ever coming back may have simply been less willing to take the survey in the first place. Thus, the actual likelihood of recent graduates returning back to Michigan in the next five years after moving elsewhere may be lower than reported here.

Of course, Michigan is not the only state seeing a substantial portion of its college graduates depart. Although the Michigan Post Higher Education Study included only respondents who went to school in Michigan, it is possible to compare migration patterns across different states by leveraging other existing survey datasets. Among the largest and most widely used is the American Community Survey (ACS), an ongoing survey of American households conducted by the United States Census Bureau each year. In addition to questions about education and employment, the ACS asks its respondents where they lived one year ago.

Figure 4 uses this information to estimate the number of people under the age of 30 with four-year college degrees or higher who moved away from each state (i.e., outflow) between 2014 and 2016. In order to facilitate more meaningful comparisons between states with very different population sizes, these estimates are expressed as a rate per 1,000 population. Unlike the Michigan Post Higher Education Survey, these graduates may not necessarily have attended school in the state they moved from – the counts are of all college graduates under 30 who lived in a different state when taking the survey than they did one year prior.

The figure suggests that Michigan lost about 8.16 young college graduates per 1,000 inhabitants over the three-year period, but that most other states in the Midwest – including Iowa, Illinois, Indiana, Minnesota, Pennsylvania, and Wisconsin – lost graduates at an even higher rate, while Ohio’s rate (8.01 per 1,000 inhabitants) was nearly identical to Michigan’s.

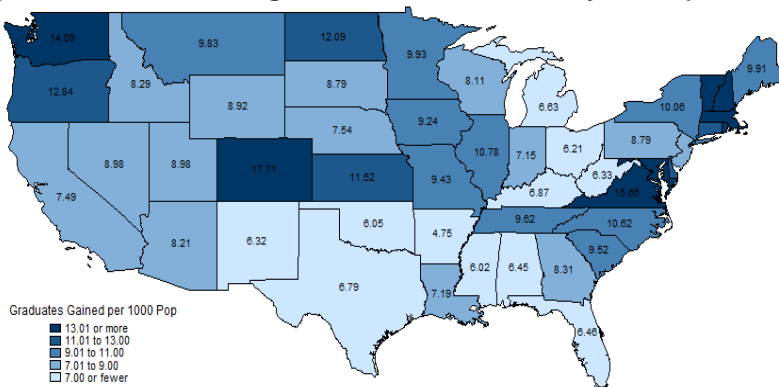
Figure 4. Outflow of College Graduates under 30, by State (2014-2016)



Data: American Community Surveys from IPUMS-USA, Univ. of Minnesota, www.ipums.org.

Of course, states may offset some or all of that outflow by gaining college graduates who move *into* the state from elsewhere (i.e., inflows). Figure 5 uses the same ACS data and shows the rate of in-migration to each state among college graduates under 30 between 2014 and 2016, again expressed in terms of graduates gained per 1,000 population.

Figure 5. Inflow of College Graduates under 30, by State (2014-2016)



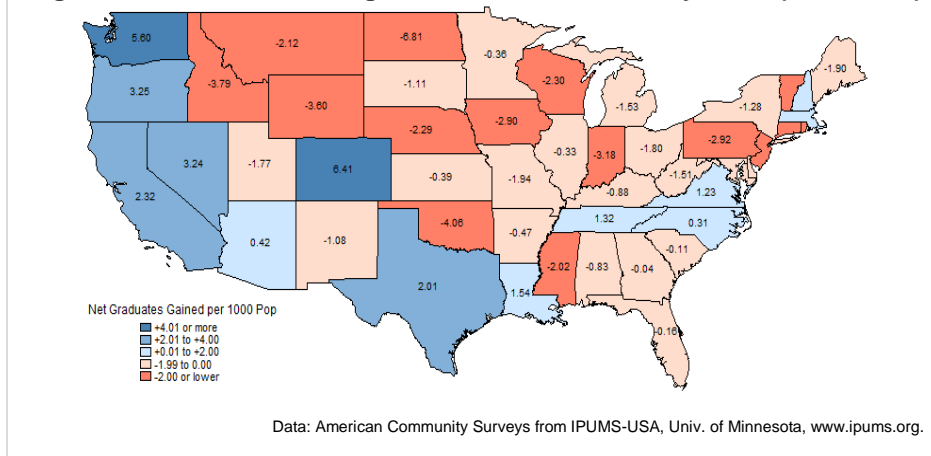
Data: American Community Surveys from IPUMS-USA, Univ. of Minnesota, www.ipums.org.

The figure suggests that even though Michigan had one of the lowest outflow of young college graduates in the Midwest, it had attracted in-migration at an even lower rate – in fact, one of the lowest rates in the country (6.63 per 1,000 population). In other words, the state of Michigan has not

been losing college graduates at an unusually high rate – on the contrary, its outflow rate is actually quite low. However, the state has not attracted enough in-migration of college-educated talent to offset the graduates it has lost.

The result, when factoring in both the inflow and outflow of graduates, is a net loss of individuals under 30 who have college degrees. Figure 6 summarizes the *net* flow of young college-educated talent for each state from 2014 to 2016, expressed as a rate per 1,000 inhabitants. If a state was attracting exactly as many graduates from out of state as they were losing graduates from in-state, their net flow would be equal to zero. Positive net flows indicate a state is gaining more graduates than it is losing, while negative net flows indicate the opposite.

Figure 6. Net Flow of College Graduates under 30, by State (2014-2016)

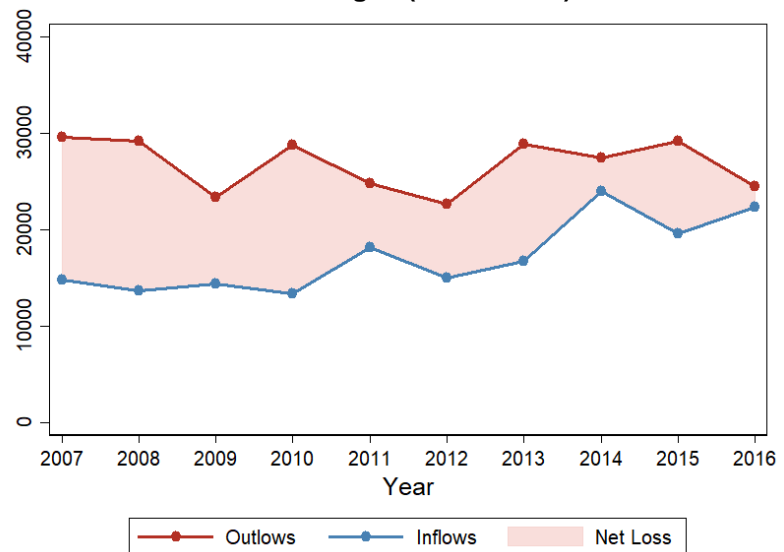


Michigan, like virtually every state in the Midwest, is experiencing a net loss of college graduates while states in the west and southwestern US (particularly Colorado and Washington) are seeing a net gain. According to these data, Michigan's rate of net loss of young graduates (1.53 per

1,000 inhabitants) is actually fairly typical within the region. Indiana, Ohio, Pennsylvania, and Wisconsin each had a *greater* net loss; while Illinois and Minnesota each had a *smaller* net loss than Michigan's.

A further reason for optimism is that Michigan's net flow has been improving recently. Figure 7 plots Michigan's ACS-estimated outflow (graduates lost) and inflow (graduates gained) for each of the years 2007 to 2016. The shaded area between the lines represents the size of the net loss. Over the last 10 years, outflows have held relatively constant, while inflows have been increasing since 2010. Although Michigan is still losing more young college graduates than it is gaining, the gap has shrunk substantially and was smaller in 2016 than it had ever been in this 10-year time period.

Figure 7. Migration of College Graduates under 30, into and out of Michigan (2007 – 2016)



Data: American Community Surveys from IPUMS-USA, Univ. of Minnesota, www.ipums.org.

SECTION III. EMPLOYMENT AND INCOME

Respondents were also asked to indicate their current employment status and household income. The results are shown in Table 5 divided by those who stayed in Michigan and those who left the state after graduating. The corresponding results from the 2013 report are also provided for reference; in order to facilitate direct comparisons, the results are for the “young mobile talent” group (28 years old or younger, single, born in the United States, and not currently pursuing another degree).

Table 5. Employment Status and Income of “Young Mobile Talent,” Compared to 2013

	MI Residents (2017)	Non-Residents (2017)	MI Residents (2013)	Non-Residents (2013)
Employment Status				
Full-time (35+ hrs)	79%	90%	68%	86%
Part-time (< 35 hrs)	13%	7%	22%	8%
Not employed	8%	4%	10%	6%
Income (full-time only)				
\$30,000 or less	28%	18%	35%	16%
\$30,001 - \$45,000	23%	16%	31%	26%
\$45,001 - \$60,000	18%	22%	23%	29%
\$60,001 - \$100,000	20%	31%	10%	24%
\$100,001 or more	11%	13%	1%	5%

Table 5 indicates that both in Michigan and elsewhere, respondents collectively reported a higher rate of full-time employment and higher incomes, on average, than were reported in 2013. Comparing current Michigan residents to non-residents:

- Those living in Michigan were *less likely* to report being employed full-time (79 percent) than those who left for somewhere else (90 percent), although this gap has *narrowed* since 2013. Four years ago, just 68 percent of the “young mobile talent” group had said they were employed full time.
- Among those who are employed full-time, fewer than half (49 percent) of those in Michigan reported a household income above \$45,000, compared to two-thirds (66 percent) of those living elsewhere. Again, however, this gap has narrowed since 2013.

Respondents’ participation in particular work-related activities while attending college, such as internships and volunteer opportunities, may have played a role in whether or not they were able to secure full-time employment after graduating. Table 6 shows the percent of respondents who reported participating in each of three particular activities, and also breaks these percentages down separately for those who reported being currently employed full-time and those who did not.

The table indicates that internships and working for pay in an area related to one’s study were the *most commonly reported* areas respondents participated in while attending college. Participation in these two activities was also *more common* among those currently employed full-time than those employed part-time or less. On the other hand, volunteering was actually reported *less often* among respondents who are now employed full-time.

Table 6. Reported Participation in Work-Related Activities while Attending College

	All Respondents	Employed Full-Time	Part-Time or Not employed
Activities			
Work for pay – related to area of study	58%	60%	51%
Internship or practicum	51%	53%	48%
Volunteer – related to area of study	39%	36%	47%
<i>None of the above</i>	14%	12%	17%
Number of Types of Activities			
All three	18%	18%	18%
Two	26%	25%	28%
One	42%	45%	37%
None	14%	12%	17%
<i>Number of Respondents</i>	6,645	4,704	1,941

Respondents were also asked how long they had to search for employment after graduating. For those who said they were currently employed, the survey instrument asked, “How long did you search for employment before accepting your current position?” For those who said they were not employed but looking for work, the question asked, “How long have you been searching for employment?” Table 7 reports the results of this question, and breaks them down separately for those living in Michigan and those living elsewhere. Employed and unemployed respondents are combined together and analyzed jointly.

Table 7. Reported Duration of Job Search

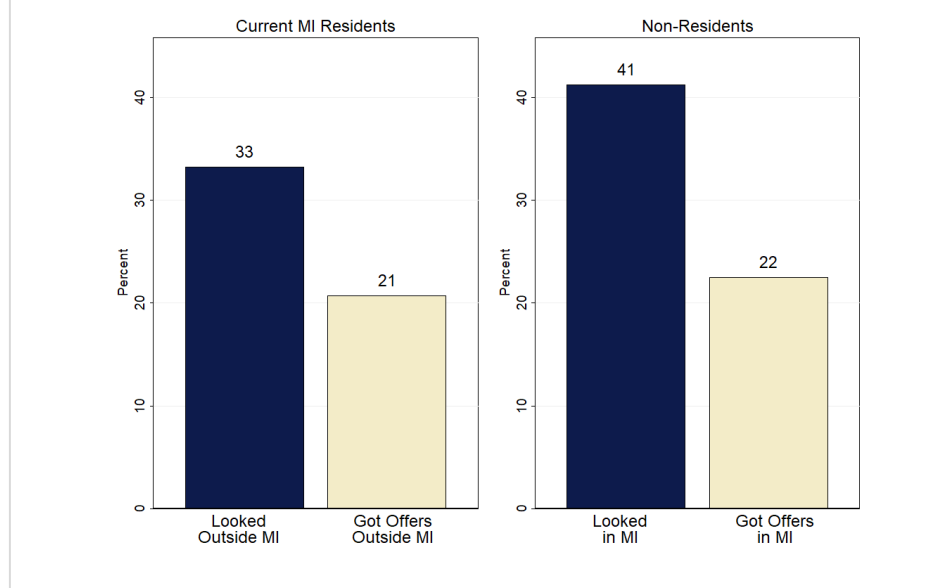
	All Respondents	MI Residents	Non-Residents
Worked for company before graduating	21%	26%	13%
< 2 months	33%	33%	34%
3 – 6 months	35%	32%	41%
7 – 9 months	6%	6%	7%
10 months +	4%	3%	5%
<i>Total</i>	100%	100%	100%
<i>Number of Respondents</i>	5,610	3,635	1,975

Most (54 percent of all) respondents reported having searched for two months or fewer, and 90 percent searched for six months or fewer. Respondents who left Michigan reported having had to search for a longer period of time, on average, and were only half as likely (13 percent) to have worked for their current company before graduating college compared to those who stayed in

Michigan (26 percent). This could possibly indicate that at least some graduates were initially open to staying in-state, but eventually applied for positions elsewhere because they felt it was taking too long to find employment in Michigan.

Indeed, Figure 8 indicates that 41 percent of respondents currently living outside Michigan had pursued employment opportunities with companies in Michigan, while just 22 percent actually received job offers in the state. By comparison, 33 percent of those who still live in Michigan said they pursued opportunities elsewhere, and 21 percent received job offers from companies outside Michigan yet chose to stay anyway.

Figure 8. Reported Job Opportunities In and Outside Michigan



Compared with the numbers reported in 2013, the results of the 2017 survey suggest that *fewer* graduates from Michigan’s public colleges and universities looked for employment out-of-state. Four years ago, 47 percent of the “young mobile talent” group that still lived in Michigan agreed that they sought employment outside of Michigan; in 2017, that number dropped to just 38 percent among the “young mobile talent” group.

Table 8 provides some additional context about graduates’ reported experiences searching for jobs in and outside of Michigan. Respondents who received or did not receive any in-state job offers, as well as those who stayed in Michigan and those who left without looking for work in-state, are broken down by the reported length of a respondent’s job search, the five industries each group of respondents most frequently reported working in, and level of education.

The results indicate that:

- Respondents who looked for work in Michigan but received no in-state job opportunities reported having searched for a job longer, on average, than any other group. About half (53 percent) reported having looked for 3 to 6 months, while another 18 percent indicated they had looked for even longer than that.
- This group was *more* likely to report working in the education, manufacturing, and information industries than other groups, and *less* likely to report working in health care.
- Those who looked for work in Michigan but received no in-state offers also reported a higher level of education, on average, with 51 percent having a Master’s Degree or higher compared to 37 percent of those who stayed or received a job offer in Michigan. This may suggest that those who searched longer without finding work were looking for (and unable to find) higher level, higher paying, and/or more specialized positions than those who found job opportunities more easily.

Table 8. Detailed Breakdown of Job Searches in and outside Michigan

	Stayed In MI	Got Offers in MI, Left	No Offers in MI, Left	Left, Never Looked in MI
Length of Job Search				
Worked for company before graduating	26%	10%	5%	18%
< 2 months	33%	38%	26%	38%
3 – 6 months	32%	39%	53%	35%
7 – 9 months	6%	7%	10%	6%
10 months +	3%	6%	8%	3%
Top 5 Industries				
1 st	Health Care (25%)	Health Care (16%)	Education (16%)	Education (19%)
2 nd	Education (18%)	Professional / Sci (13%)	Professional / Sci (14%)	Health Care (13%)
3 rd	Manufacturing (9%)	Business Mgmt (8%)	Health Care (10%)	Professional / Sci (11%)
4 th	Professional / Sci (9%)	Education (7%)	Manufacturing (8%)	Government (8%)
5 th	Government (5%)	Manufacturing (7%)	Information (7%)	Information (5%)
Degree				
Bachelor's	63%	63%	49%	43%
Master's	29%	23%	32%	36%
PhD / Professional	8%	13%	19%	21%
<i>n</i>	4,258	300	478	1,109

Respondents who did manage to secure full-time or part-time employment were asked how they see their current job as it relates to their future career path. As shown in Table 9, over two-fifths (42 percent) of all employed respondents reported that their current job will probably continue as a long-time career, while another 45 percent said their current job will provide skills or knowledge that will prepare them for their desired career. Just 9 percent said their current job is not linked to their long-term career objectives.

Table 9. Relation of Current Job to Long-Term Career, Among Employed Respondents

	All Respondents	Current MI Residents	Non- Residents
Probably continue as a long-term career	42%	40%	44%
Prepare me for a desired career	45%	44%	47%
Not linked to my long-term career	9%	11%	6%
Not sure	4%	4%	4%
<i>Total</i>	100%	100%	100%
<i>Number of Respondents</i>	5,250	3,371	1,879

However, comparing those who stayed in-state to those who moved elsewhere, current Michigan residents were almost twice as likely (11 percent) as those who left (6 percent) to report having a job that is not linked to their long-term career.

Table 10 compares the results of the 2017 survey to the 2013 results, for the job search questions that appeared on the instrument both years. The results reflect generally favorable trends for Michigan's recent graduates: respondents were more likely to report having accepted a position with their current company before graduating college in 2017 (21 percent) than they were in 2013 (16 percent), more likely to report that their current job will continue as a long-term

career (42 percent, up from 39 percent in 2013), and more likely to report that their current job will prepare them for their desired career (45 percent, up from 35 percent). Meanwhile, the percentage who reported that their job is not linked to their long-term career objectives dropped from 14 percent in 2013 to 9 percent in 2017.

Table 10. Job Search Factors, Compared to 2013

	% in 2017	% in 2013
Job Search Length		
Worked for company before graduating	21%	16%
6 months or less	68%	75%
Over 6 months	10%	9%
Internship in college		
Yes	52%	54%
No	48%	46%
Relation of job to career		
Probably continue as a long-term career	42%	39%
Prepare me for a desired career	45%	35%
Not linked to my long-term career	9%	14%
Not sure	4%	11%

SECTION IV. PERCEPTIONS OF MICHIGAN

Respondents also received a series of questions about their perceptions of Michigan, its major economic industries, and how it compares to other parts of the country as a place to live.

Table 11. Most Frequent Mentions for “Industries Michigan is Known For”

Industry	Percent
Automotive – general	90%
Agriculture – food production	19%
Business / industry / manufacturing – general	15%
Health care / medical	14%
Tourism	11%
Financial / mortgage / insurance	6%
Craft beer, breweries	5%
Farming – general	5%
Technology	4%
Fruit / vegetable farming	4%
Education – general	4%
Engineering	4%
Chemical manufacturing (e.g., Dow)	4%
Lumber, logging, forestry	3%
Automotive – manufacturing	2%
Number of respondents	5,712
<i>Percentages will not sum to 100% because each respondent could name up to three different industries.</i>	

First, in order to measure their perceptions of Michigan’s economy, respondents were asked the open-ended question, “When you think of industries Michigan is known for, what two or three immediately come to mind?” Their answers were coded into common categories, the top 15 of which are summarized in Table 11.

By far the most common industry named was the automotive industry, with 90 percent of the 5,712 respondents who answered the question having mentioned it as one of the industries that came to mind.

The next most common answers were agriculture – food production (19 percent), general business / industry / manufacturing (15 percent), health care / medical (14 percent), and tourism (11 percent).

Next, respondents were asked about which words they would use to describe the automobile industry specifically. The survey instrument displayed sixteen adjectives in a random order. Respondents could highlight each word red or green by clicking on them, and were instructed to use green if they thought the word describes the automobile industry and red if it did not.

The adjectives are listed in Table 12, along with the percentage of respondents who indicated that each word describes the auto industry. For the most part, the words chosen most commonly to describe the industry were favorable ones, while the words chosen least commonly were unfavorable.

In particular:

- The top words chosen to describe the auto industry were “global,” “unionized,” “high-tech,” and “innovative,” with over 80 percent of respondents selecting them for this purpose.
- The words that respondents most commonly said do *not* describe the industry were “boring” and “unskilled,” with fewer than 29 percent saying they describe it.

Table 12. Words Chosen to Describe the Automobile Industry

Descriptors	All Respondents	MI Residents	Non-Residents
Global	94%	94%	92%
Unionized	86%	87%	85%
High-Tech	82%	85%	77%
Innovative	82%	84%	78%
Traditional	74%	71%	79%
Repetitive	68%	67%	69%
Dynamic	62%	65%	56%
Pioneering	61%	64%	56%
Fast	59%	64%	49%
Futuristic	58%	62%	52%
Conservative	56%	53%	61%
Declining	49%	45%	55%
Exciting	49%	52%	44%
Stable	48%	48%	48%
Boring	29%	27%	32%
Unskilled	14%	14%	15%
Number of Respondents	3,487	2,214	1,273

Some differences of opinion can also be identified in the views of those who stayed in Michigan and those who now live elsewhere, with current in-state residents generally expressing more favorable views.

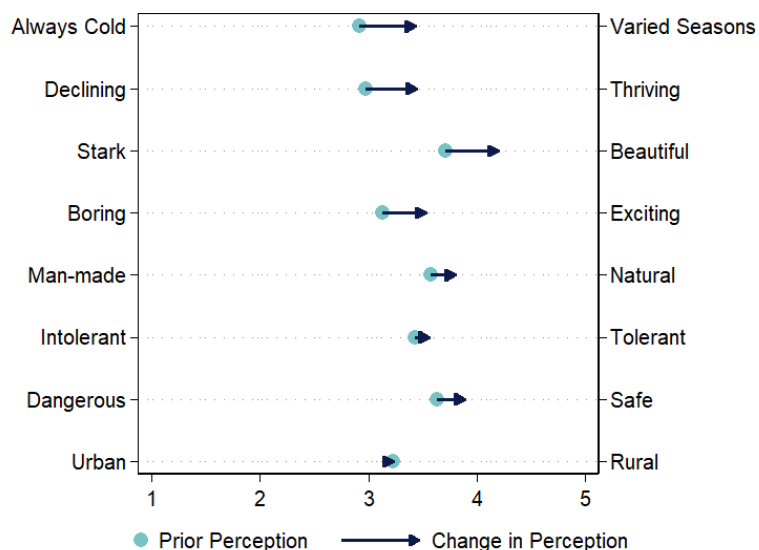
Specifically, Michigan residents were more likely than non-residents to choose each of the words “high-tech,” “innovative,” “dynamic,” “pioneering,” “fast,” “futuristic,” and “exciting” to describe the automobile industry.

Meanwhile, those living elsewhere were more likely than Michigan residents to say the words “traditional,” “conservative,” “declining,” and “boring” describe the industry.

Respondents who were born somewhere outside of Michigan were asked to recall their impressions of the state itself before they first arrived here, and indicate how those impressions had changed after having lived here. The instrument presented eight pairs of favorable and unfavorable adjectives (e.g., “Safe – Dangerous,” “Thriving – Declining”). For each pair, the respondent was asked to place their prior impression of Michigan on a five-point scale ranging from the favorable extreme to its corresponding unfavorable extreme. They then used the same five-point scale to indicate how they would now describe the state of Michigan after actually having lived there.

Figure 9 summarizes these perceptions and how they changed. The mean prior perception on each five-point scale is displayed as a light blue dot, while navy blue arrows indicate the mean perceptions

Figure 9. Change in Non-MI Born Residents’ Reported Perceptions of Michigan, Before and After Living in State



after having lived in Michigan and how much they differ from prior impressions. Longer arrows indicate opinions that changed more, while the direction of each arrow indicates whether the mean perception shifted in a more favorable direction or a more unfavorable direction. Note that on the “Urban – Rural” scale, neither end is objectively favorable or unfavorable, so the options are simply pictured in the order they appeared on the survey instrument.

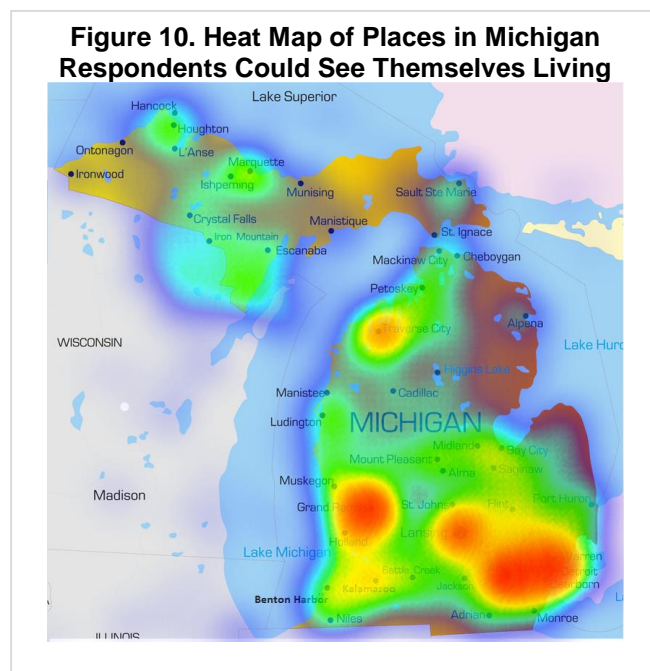
The results indicate in general that respondents born out-of-state reported that their perceptions of Michigan *improved* on most dimensions after having lived here, though the magnitude of the change varied from one topic to the next. In particular:

- The *largest* improvements were in perceptions of Michigan’s climate (“Always Cold → Varied Seasons”), aesthetic appeal (“Stark → Beautiful”), and future prospects (“Declining → Thriving”).
- Smaller improvements were reported in perceptions of Michigan’s level of excitement (“Boring → Exciting”) and safety (“Dangerous → Safe”).
- Only negligible changes were reported, on average, in perceptions of Michigan’s tolerance (“Intolerant → Tolerant”) and urbanicity (“Urban → Rural”).

In order to measure their interest in particular areas of Michigan as a place to live, respondents were shown a map of the state and asked to click on up to five different areas where they could see themselves living or pursuing a career. Their responses are visualized in Figure 10 as a heat map, with “warmer” (i.e., redder) colors indicating areas of the map that were clicked more often.

The results show that respondents were collectively most interested in living in the Lower Peninsula – especially around Detroit, Ann Arbor, Grand Rapids, Lansing, or Traverse City.

Few respondents said they could see themselves living in the Upper Peninsula, northeast Lower Peninsula, or the thumb.



They were then asked to perform the same task, but with a map of the entire United States. Figure 11 shows the nation-wide heat map, with warmer colors again highlighting areas that were chosen more often as places respondents could see themselves living or pursuing a career.

Figure 11. Heat Map of Places in the U.S. Respondents Could See Themselves Living

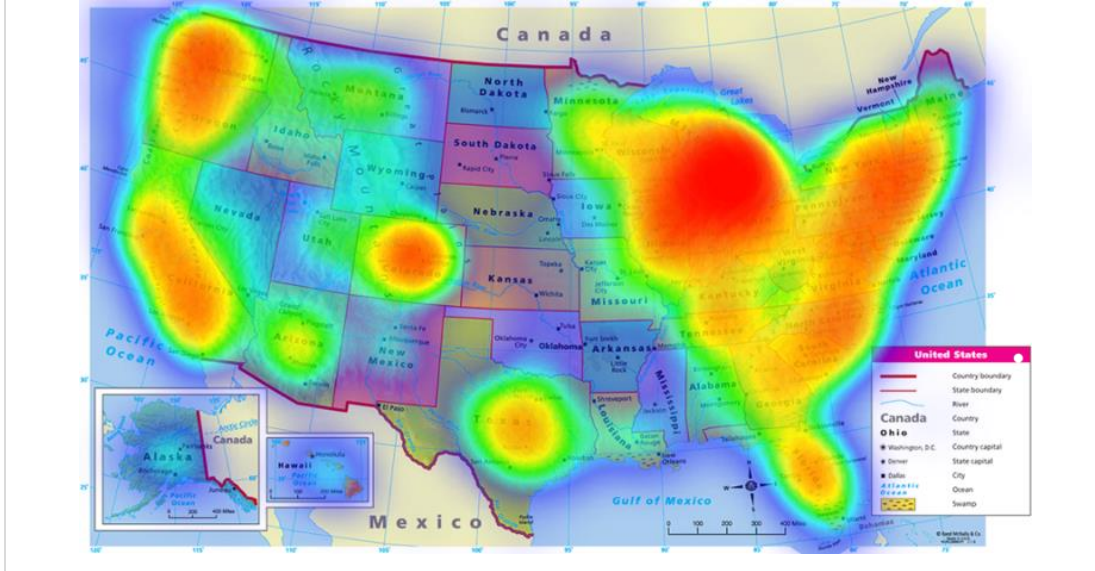


Figure 11 shows that respondents expressed the most interest in staying near Michigan or the Midwest, followed by regions along the Atlantic and Pacific coasts as well as Colorado and Texas. Very few indicated a desire to live in the Great Plains or Deep South.

Respondents' location preferences were also measured by pitting particular areas of Michigan head-to-head against various other United States cities and asking respondents, "Taking into consideration employment opportunities, quality of life, and personal interests, if you had to choose between the two, would you live in:" and then presenting a randomly chosen pair of options to choose from. Six regions of Michigan were randomly paired with each of ten other US cities (listed in Table 10), and each respondent was asked to choose between two different pairs (e.g., between Detroit and Los Angeles, and then between Traverse City and Cleveland). Each pairing was randomly assigned to between 70 and 100 respondents to be evaluated.

Table 13 shows the results of these choices, for each Michigan – US pairing. Percentages indicate the percent of respondents who chose the Michigan region over the US city, with higher numbers corresponding to a stronger preference for the in-state choice over the out-of-state choice. The results indicate that:

- Given the choice, majority of respondents would choose to live in the Ann Arbor or Grand Rapids area over all ten of the out-of-state options.
- Most respondents would choose Detroit over nearly all of the out-of-state options, but less than half (41 percent) would choose it over Chicago, and choices were about evenly split between Detroit and Denver (51 percent choosing Detroit).
- Most respondents indicated that they would rather live in *any* of the ten out-of-state options than in the Upper Peninsula.
- Among the out-of-state options, Chicago and Denver fared the strongest in head-to-head matchups with Michigan regions, while Cleveland and St. Louis fared the worst.

Table 13. Percent Who Would Choose Michigan Regions over Various US Regions

	Denver	Chicago	DC	Austin	St. Louis	Los Angeles	Cleveland	Indianapolis	Minneapolis – St. Paul	San Fran / Silicon Valley
Ann Arbor area	71%	62%	70%	73%	84%	70%	91%	88%	79%	67%
Grand Rapids area	59%	65%	66%	67%	76%	67%	82%	87%	74%	61%
Detroit area	51%	41%	62%	56%	77%	68%	80%	70%	65%	59%
Lansing / East Lansing area	46%	42%	51%	57%	78%	64%	80%	68%	60%	51%
Traverse City / Northern MI	45%	47%	44%	69%	70%	56%	62%	61%	60%	55%
Upper Peninsula	28%	29%	38%	35%	44%	46%	38%	27%	26%	30%

All percentages indicate the percent of respondents who said they would choose to live in the Michigan region instead of various other US cities, if given a choice between the two.

Blue highlights indicate a strong preference for the Michigan region (≥ 60%)

Tan highlights indicate a strong disadvantage for the Michigan region (≤ 40%)

SECTION V. HAPPINESS AND SATISFACTION

To measure their subjective feelings toward their jobs and other aspects of their life after college, respondents were given a series of questions pertaining to happiness, satisfaction, and personal engagement. First, they were asked to indicate on a five-point scale how happy or unhappy they are currently with their life overall, with their job(s) or employment situation, their personal life (family, friends, relationships, etc.), and with their community or area as a place to live. Table 14 summarizes the responses to these questions and breaks down the results separately for those living in Michigan and those living elsewhere. The table lists both the average happiness score (on the five-point scale) given in each area as well as the percentage of respondents who said they were “very happy” with that particular aspect of their life.

Table 14. Reported Happiness with Various Aspects of Life

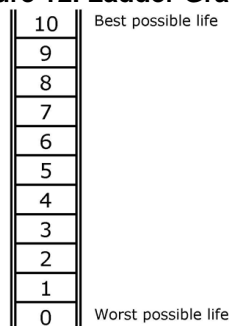
	<u>All Respondents</u>		<u>Current MI Residents</u>		<u>Non-Residents</u>	
	Mean Happiness	% “Very Happy”	Mean Happiness	% “Very Happy”	Mean Happiness	% “Very Happy”
Personal life	4.31	52%	4.31	53%	4.30	50%
Your life overall	4.28	49%	4.22	46%	4.39	53%
Community / area	4.09	42%	4.06	40%	4.15	44%
Job / employment	3.95	40%	3.84	37%	4.13	46%

Mean happiness is calculated using a five-point scale where 1 = “Very Unhappy” and 5 = “Very Happy”

The table indicates that:

- Respondents were more happy than unhappy with all four aspects of life, but expressed the most favorable attitudes toward their personal life (mean score of 4.31) and the least favorable attitudes toward their job or employment situation (mean of 3.95).
- Although respondents expressed similar levels of happiness toward their personal life regardless of their current location, respondents who had moved away from Michigan expressed higher levels of happiness toward their life overall, their community or area as a place to live, and their job or employment situation compared to current Michigan residents who took the survey.

Figure 12. Ladder Graphic



Next, respondents were shown an image of a ladder (Figure 12) with steps numbered from 0 to 10. They were instructed to imagine that the top of the ladder – Step 10 – represents the best possible life for them while the bottom – Step 0 – represents the worst possible life. Then, with the ladder displayed on screen for reference, they were asked to indicate which on which step they feel they currently stand at the present time, and on which step they think they will stand about five years from now.

The results are summarized in Table 15, including an “Expected Change” row that measures the extent to which respondents

believe their life will improve over the next five years – that is, the *difference* between their current step and the step they think they will be on five years from now.

On average, respondents reported moderate favorable perceptions of their current life (between Steps 6 and 7), and even more optimistic expectations about the future (between Steps 8 and 9).

However, some small differences exist between the answers of those living in Michigan and those living elsewhere. Specifically, current Michigan residents placed themselves on a lower step, on average, than those living somewhere else and also expected that they would be on a lower step in the future. However, this location-based gap was smaller for when evaluating one's future than evaluating one's present – indicating that Michigan residents foresee their lives improving to a greater extent than non-Michigan residents.

Respondents who reported being employed either full-time or part-time were also asked a battery of agree-disagree items about their level of personal engagement with their current job.

Table 15. Reported Quality of Life: Current and Expected Future

	All Respondents	MI Residents	Non-Residents
Current Step (Today)	6.71	6.60	6.90
Future Step (Five years from now)	8.58	8.54	8.64
Expected Change (Future – Current)	+ 1.88	+ 1.95	+1.75
Number of Respondents	6,575	4,207	2,368
<i>Expected change is calculated as future step minus current step. If the expected change is greater than zero, it indicates an expectation that life will improve over the next five years, while negative change indicates an expectation that life will get worse.</i>			

Table 16. Reported Level of Engagement with Current Job, Among Employed

	All Respondents	MI Residents	Non-Residents
Something interesting every day	4.10	4.02	4.24
Deeply interested in work	4.07	3.98	4.23
Like what I do every day	4.04	3.98	4.15
Average	4.07	3.99	4.21
Number of Respondents	5,250	3,371	1,879
<i>Means are all calculated using a five-point scale where 1 = "Strongly Disagree" and 5 = "Strongly Agree"</i>			

As shown in Table 16, respondents agreed more than they disagreed that they learn or do something interesting every day, that they are deeply interested in the work they do, and that they like what they do every day. Again, however, those who stayed in Michigan gave *less favorable* responses to all three of these items (average score of 3.99 out of 5, compared to 4.21 among those living outside Michigan).

SECTION VI. WHO LEAVES AND WHO STAYS

Lastly, the survey includes a number of tools useful for evaluating the reasons why some graduates stay in Michigan and others leave.

Table 17 breaks down Michigan residents and non-residents by a number of different demographic and financial variables. It indicates that those who stay in the state after graduating are more likely to be female, white, and over 30 years old than those who leave.

Moreover, 11 percent of current residents lived somewhere else prior to attending college, whereas nearly half (48 percent) of graduates who left the state lived in Michigan before they entered college. In large part, this is due to the fact that respondents who lived in Michigan before entering college simply outnumber those who lived elsewhere by roughly 3 to 1 in general. In fact, Michigan is retaining roughly 77 percent of those who lived in the state before college while gaining 27 percent of those who previously lived in another state and 29 percent of those who previously lived in a different country. Generally speaking though, as was reported in 2013, where one lived before college is the single strongest predictor of where they choose to live after graduating.

Table 16 also suggests that the more advanced degree a respondent earns, the less likely they are to stay in Michigan after graduation. Those with PhDs make up just 8 percent of current residents, compared to 16 percent of those who live elsewhere. Being debt-free was also far more common among those now living outside of Michigan (49 percent) than those who stayed in-state (31 percent). Over two-fifths (43 percent) of current Michigan residents reported having \$30,000 or more in debt, compared to just 29 percent of those living elsewhere.

Table 17. Demographic and Financial Traits, by Current Residency

	Current MI Residents	Non-MI Residents
Gender		
Female	65%	55%
Male	35%	45%
Race		
White	82%	72%
Black	8%	6%
Asian / Pacific	7%	21%
Middle Eastern	3%	3%
American Indian / Alaskan	2%	1%
Age		
18 – 22	25%	30%
23 – 26	39%	38%
27 – 30	14%	15%
31 +	22%	17%
Residency Before College		
Michigan	89%	48%
Another US state	7%	35%
Another country	4%	17%
Most Recent Degree Type		
Bachelor's	63%	54%
Master's	29%	30%
PhD	8%	16%
Current Debt		
None	31%	49%
Up to \$10,000	7%	7%
\$10,000 - \$29,999	20%	15%
\$30,000 - \$49,999	17%	10%
\$50,000 - \$99,999	18%	12%
\$100,000 +	8%	7%

Michigan is retaining talent in the health care and social assistance fields, but losing engineering talent. Table 18 indicates that 27 percent of Michigan residents are employed in the health care industry (compared to just 13 percent of those living elsewhere). Meanwhile, those employed in the professional, scientific, and technical field make up 15 percent of Michigan residents but 22 percent of non-residents. Indeed, only one-tenth (10 percent) of those who stayed in Michigan earned an engineering degree, compared to 17 percent of those living elsewhere.

This means that Michigan is only retaining about half (52 percent) of its engineering graduates. This does represent an improvement from 2013, however, when the previous survey of recent graduates found that only 47 percent of engineering graduates still lived in-state.

Table 18. Work Industry and Area of Study, by Current Residency			
	All Respondents	MI Residents	Non-Residents
Industry Where Employed			
Health Care / Social Assistance	22%	27%	13%
Education	17%	18%	17%
Professional / Scientific /Technical	17%	15%	22%
Manufacturing	9%	10%	7%
Government	7%	5%	9%
Finance / Insurance	4%	4%	5%
Information	4%	3%	6%
Business Management	3%	3%	4%
Arts / Entertainment / Recreation	3%	3%	5%
Accommodations / Food Service	3%	3%	2%
Field of Study			
Business	14%	13%	16%
Social / Behavioral Sciences	14%	14%	13%
Sciences / Mathematics	13%	13%	14%
Engineering	13%	10%	17%
Health Care	12%	14%	9%
Education	8%	9%	6%
Arts / Humanities	8%	7%	9%
Community / Public / Social Services	6%	7%	4%
Computer / Information Sciences	4%	3%	6%
Communications	4%	4%	3%
Number of Respondents	5,244	3,371	1,873

The data from the American Community Surveys (ACS) provide even finer details about the kinds of college-educated workers Michigan is losing to other states. Table 19 summarizes the top 10 occupations and top 10 industries where Michigan has seen the largest net gains (i.e., more in-migration than out-migration) and the largest net losses (i.e., more out-migration than in-migration) among college graduates under the age of 30 between 2014 and 2016.

Table 19. Occupations and Industries with Largest Net Migration among College Graduates under 30 (into and out of Michigan, 2014 – 2016)

<u>Occupations</u>		
Rank	Largest Net Gains	Largest Net Losses
1 st	Mechanical Engineers (+1,166)	Retail Salespersons (-1,792)
2 nd	Chiropractors (+1,045)	Marketing and Sales Managers (-1,438)
3 rd	Postsecondary Teachers (+819)	Military Enlisted Tactical Ops / Specialists (-1,177)
4 th	Misc. Assemblers / Fabricators (+615)	Sales Reps – Wholesale and Manufacturing (-1,138)
5 th	Registered Nurses (+614)	Elementary and Middle School Teachers (-938)
6 th	Materials Engineers (+602)	Waiters and Waitresses (-931)
7 th	Advertising Sales Agents (+595)	Retail Sales Supervisors (-931)
8 th	Media Producers and Directors (+562)	Teacher Assistants (-925)
9 th	Drafters (+535)	Bartenders (-908)
10 th	Counter and Rental Clerks (+519)	Computer Occupations - Other (-854)
<u>Industries</u>		
Rank	Largest Net Gains	Largest Net Losses
1 st	Motor Vehicle Manufacturing (+5,048)	Computer Systems Design (-3,114)
2 nd	Colleges, Universities, and Prof. Schools (+1,761)	Restaurants and Food Service (-1,407)
3 rd	Mgmt, Scientific, and Technical Consulting (+1,075)	Clothing Stores (-1,167)
4 th	Offices of Chiropractors (+1,045)	Other Health Care Services (-1,120)
5 th	Amusement, Gambling, and Rec Industries (+635)	Elementary and Secondary Schools (-1,111)
6 th	Schools and Instruction - Other (+623)	Justice, Public Order, and Safety (-1,027)
7 th	Real Estate (+582)	Electronic Component Manufacturing (-1,023)
8 th	Hospitals (+573)	Department Stores and Discount Stores (-997)
9 th	Grocery Stores (+500)	Advertising, PR, and Related Services (-948)
10 th	Furniture Manufacturing (+374)	Outpatient Care Centers (-925)
Data: American Community Surveys via IPUMS-USA, Univ. of Minnesota, www.ipums.org .		

Table 19 shows that:

- Michigan is gaining more mechanical engineers, chiropractors, and postsecondary teachers from other states than they are losing, having seen a net gain of at least +800 of each of these occupations between 2014 and 2016.
- The occupations Michigan is losing the most without replacing, among college graduates under the age of 30, are retail salespersons, marketing and sales managers, military specialists, and wholesale or manufacturing sales representatives. The state's net loss of each of these occupations exceeded -1,000.
- In terms of industries, Michigan has seen the largest net gain (+1,000 or more) of college graduates under 30 years old in the motor vehicle manufacturing industry; colleges, university, and professional schools; management, scientific, and technical consulting; and chiropractors' offices.
- On the other hand, Michigan has seen the largest net loss in computer systems design (-3,114) and the restaurants and food service industry (-1,407).

Returning to the results of the Michigan Post Higher Education Survey, Table 20 suggests that the decision to leave Michigan may be driven largely by where one is able to find work, while the decision to stay is often driven by personal ties to the area. When asked what they did first when looking for employment after graduation, about two-thirds (66 percent) of those living outside Michigan indicated that they found employment first and then relocated, rather than the other way around. Among those who stayed in the state, on the other hand, 72 percent either stayed near college or returned home first and then found employment.

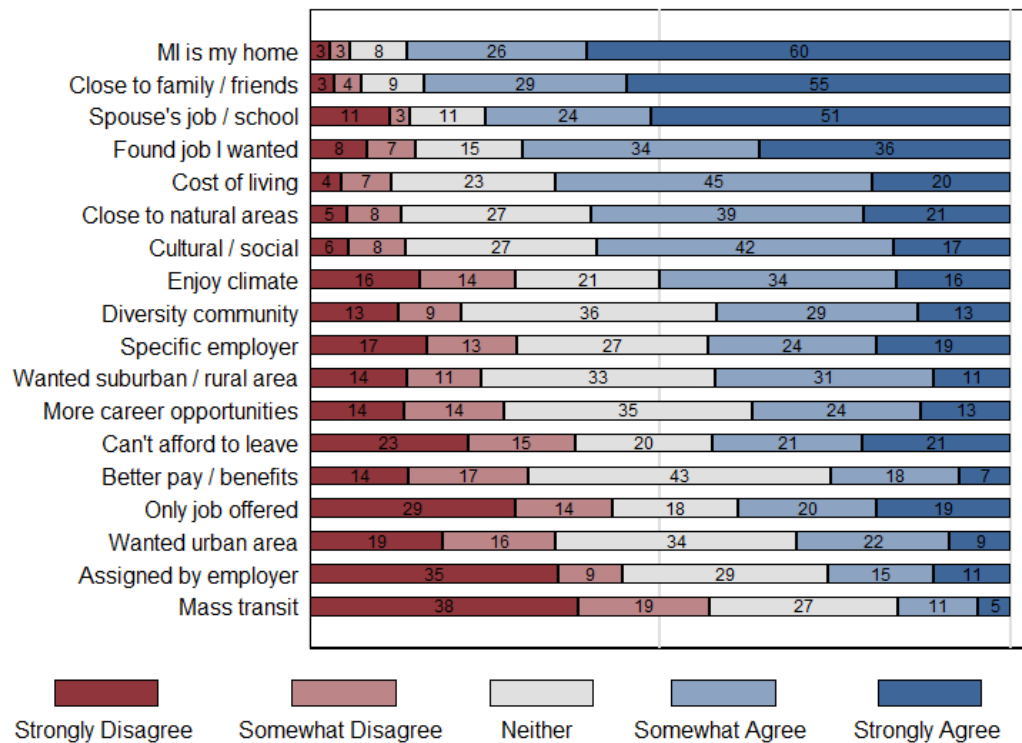
	All Respondents	Current MI Residents	Non-Residents
Found employment, then relocated	38%	23%	66%
Stayed near college, then found employment	32%	48%	4%
Returned home, then found employment	21%	24%	16%
Relocated, then found employment	8%	5%	14%
Total	100%	100%	100%
Number of Respondents	5,548	3,595	1,953

These conclusions are also evident when looking at the reasons respondents gave for the decisions they made about where to live after graduating. The survey instrument asked a battery of 18 agree-disagree items, the specific content of which was determined by whether or not the individual respondent still lived in Michigan, and whether they said they were employed or still looking for work.

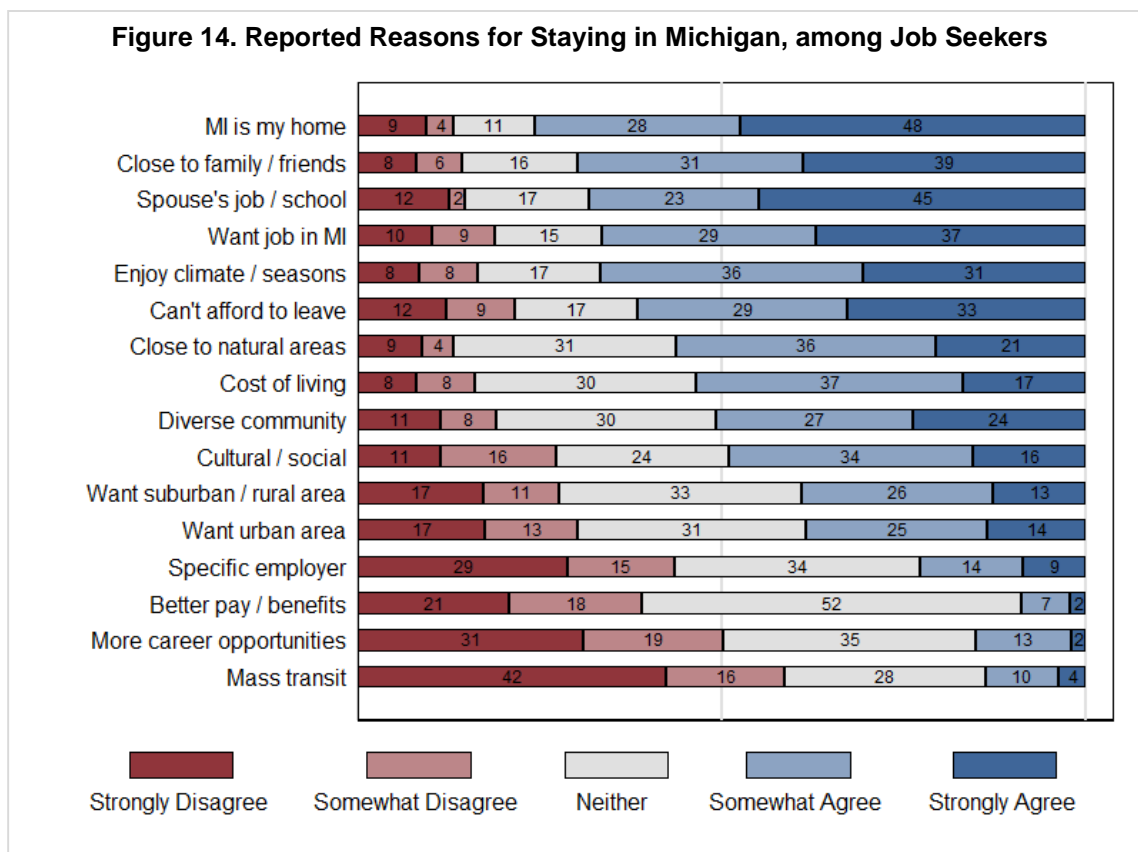
Figure 13, which summarizes the answers from employed respondents who still live in Michigan, indicates that the most important reasons decided to accept a job and stay in-state were feeling that Michigan is their home (86 percent agreement), wanting to be close to family and friends (84 percent agreement), and wanting to be close to a spouse or partner's job or school (75 percent agreement). Again, respondents seemed to be indicating that their personal ties to the area heavily influenced their decision to stay.

Of course, it should also be noted that 70 percent also agreed that they stayed because they found the job they wanted. Had that not been the case, they may have had to look elsewhere.

Figure 13. Reported Reasons for Staying in Michigan, among Employed Respondents



Among those who stayed in Michigan even though they are still seeking work, the key factors are similar (Figure 14). Once again, these respondents most strongly agreed that they stayed because Michigan is their home (76 percent agreement), to be close to family and friends (70 percent agreement), and to be close to a spouse or partner's job or school.



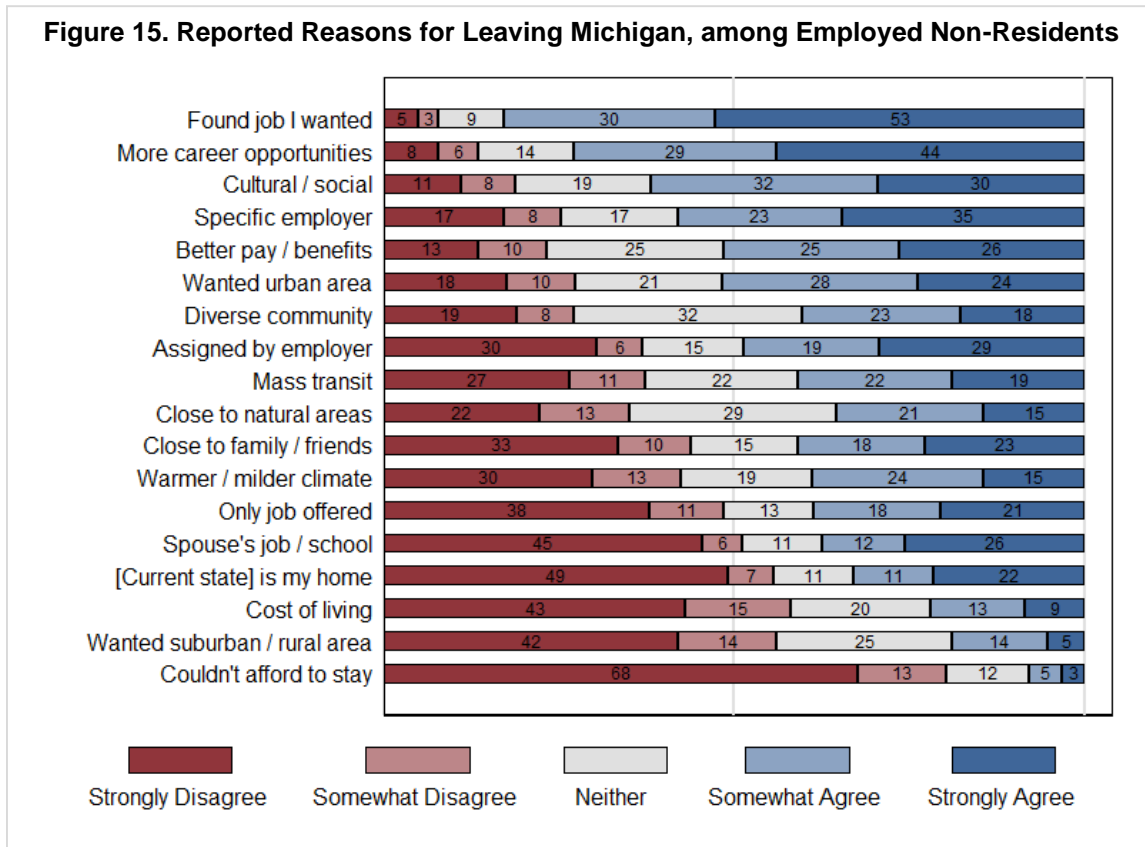
Michigan's climate and seasons, closeness to natural areas, and cost of living were also cited by both employed and job-seeking respondents as important reasons for staying in the state, while mass transit was rated as the least important factor by both groups.

Of note, two-thirds (66 percent) of this group said they stayed because they want to find a job in Michigan, yet only 15 percent agreed that more career opportunities are available to them in Michigan and only 9 percent agreed that the pay or benefits are better in Michigan. This could suggest that job-seekers in Michigan *hope* to find work within the state if possible, but do not perceive the in-state job market to be offering a quantity of well-paying jobs they consider to be competitive with the job market outside the state.

And, as a matter of fact, employed respondents who left Michigan after graduating (Figure 15) collectively placed job opportunities as the number one factor for their decision to move.

Over four-fifths (83 percent) of employed respondents living outside Michigan agreed that they left because they found the job they wanted, while 73 percent agreed they left because more career opportunities were available outside Michigan. About half (51 percent) said they left because the pay or benefits were better outside Michigan.

Among the non-economic reasons this group gave for their decision to leave the state, the key factors included liking the variety of cultural and social activities in their new location (62 percent agreement), wanting to live in an urban area (52 percent agreement), and wanting to live in a diverse community (41 percent agreement).

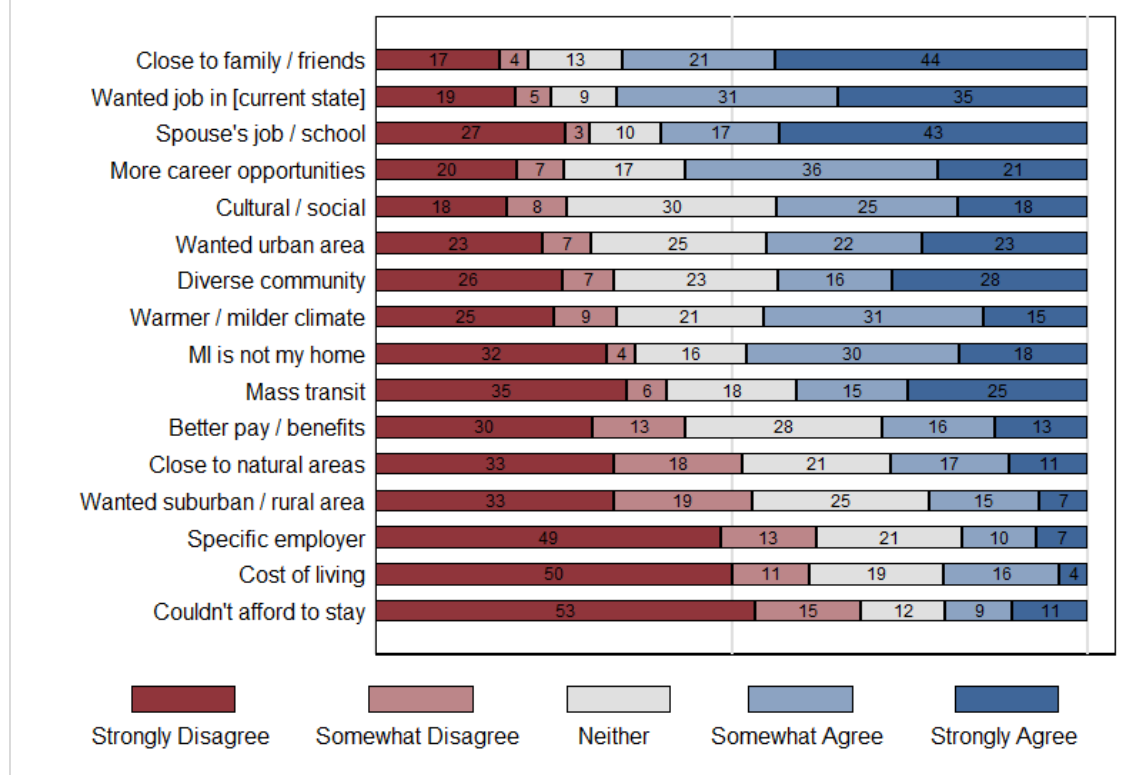


Employed respondents living outside of Michigan collectively indicated that affordability was *not* a factor that drove them to leave the state. An overwhelming 81 percent of them disagreed that they left Michigan because they could not afford to stay there, and most (58 percent) disagreed that they left because the cost of living was lower elsewhere.

Finally, those who left Michigan even though they had not yet found employment (Figure 16) indicated that a combination of personal ties and career opportunities were the most important reasons they chose to leave. Nearly two-thirds (65 percent) of the agreed that they left to be close to family and friends, while 60 percent agreed that they left to be close to a spouse or partner's job or school. At the same time, 66 percent agreed they left because they want to find a job in their current location, and 57 percent agreed that more career opportunities were available to them there.

Once again, availability of social and cultural activities (43 percent agreement), wanting to live in an urban area (45 percent agreement), and wanting to live in a diverse community (44 percent agreement) ranked among the top non-economic reasons for leaving, while affordability was *not* a strong determining factor.

Figure 16. Reported Reasons for Leaving Michigan, among Non-Resident Job Seekers



All respondents, regardless of their current location and employment status, were also asked a more general series of questions about the importance of various particular factors for deciding where to live and work. They rated each of 16 different factors (listed in Table 21) on a five-point scale ranging from "Not at All Important" to "Extremely Important." Table 21 presents the average score (on the five-point scale) respondents gave to each item, as well as the percent of all respondents who rated the factor "Extremely Important." The factors are listed in order of importance, from most important (according to average response) to least important.

Respondents rated two career-related factors – the availability of good paying jobs and career advancement opportunities – as the most important factors for deciding where to live and work, with over half (54 percent each) of respondents rating them “Extremely Important.” Safe streets and neighborhoods, cost of living, and air and water quality were also highly rated.

Among the factors rated by respondents as least important were climate and access to mass transit, each of which were rated “Extremely Important” by fewer than 15 percent of respondents.

Table 21. Reported Importance of Factors for Deciding Where to Live and Work

Factor	Mean Importance ^a	% “Extremely Important”
Good paying jobs	4.42	54%
Career advancement opportunities	4.40	54%
Safe streets and neighborhoods	4.23	45%
Cost of living	4.02	34%
Air and water quality	3.99	36%
Availability of housing near work	3.82	24%
Diversity of job opportunities	3.81	28%
Access to parks, natural, rural areas	3.70	27%
Variety of activities (museums, etc.)	3.66	22%
Openness to diversity	3.62	31%
Proximity to family and friends	3.57	25%
Good place to raise family	3.51	33%
Quality of roads and infrastructure	3.45	16%
Good K-12 school system	3.16	25%
Access to mass transit	2.71	12%
Warmer or milder climate	2.41	8%
^a Mean Importance is calculated using a five-point scale where 1 = “Not at all Important” and 5 = “Extremely Important”		

Factors such as the quality of the K-12 school system and being a good place to raise a family were rated as less important on average, yet nevertheless had a relatively high proportion of respondents (25 and 33 percent, respectively) say they are “Extremely Important.” This reflects the fact that these particular factors were rated as especially important to respondents with children, but far less important to those without children.

Although the preceding results provide a wealth of useful information about why graduates choose to stay in or leave Michigan, certain factors could also influence decision making without respondents being consciously aware of it. Therefore, in addition to simply asking people why they made the decisions they made, it is also instructive to see what other variables are statistically related to those choices.

Table 22 presents the results of a statistical analysis (binary logistic regression) predicting whether or not a respondent chooses to live in Michigan or somewhere else.

Binary logistic regression (also referred to as logit) is a scientific modelling technique for binary dependent variables (i.e., where the variable can take on only two values, “0” and “1”, representing two mutually exclusive outcomes – in this case, whether or not the respondent chose to stay in Michigan). The model uses a set of independent variables to predict a continuous, latent, and unmeasurable variable which in turn determines what the observed binary dependent variable (i.e., the actual decision to stay or leave) would equal. The analysis outputs a set of estimated coefficients or weights which indicate the independent “effect” of each

independent variable after controlling for the other variables in the model (along with a test of statistical significance to determine whether each coefficient is empirically distinguishable from a null effect). This analysis was used to test the independent impact of various demographic factors and attitudes on respondent's choices to live in Michigan – as well as several individual regions of Michigan – or not.

Included in the model as independent variables were four scales that combine each respondent's answers to groups of items that were determined via a factor analysis to be related to one another. Each scale was calculated as the average importance assigned by the respondent to specific factors in Table 19:

- *Career factors*: Average importance assigned to career advancement opportunities, availability of good paying jobs, and diversity of employment opportunities.
- *Family factors*: Average importance assigned to good place to raise a family, good K-12 school system, safe neighborhoods and streets, and proximity to family and friends.
- *Environmental factors*: Average importance assigned to quality of roads, air / water quality, access to parks and natural areas, and cost of living.
- *Lifestyle factors*: Average importance assigned to variety of activities, openness to diversity, warmer or milder climate, access to mass transit, and availability of housing near workplaces.

The statistically significant independent variables in the model are listed according to whether they are associated with an increased likelihood of staying in Michigan or an increased likelihood of leaving Michigan, along with an odds ratio that measures how strongly the factor is related to the decision to stay or leave. Odds ratios above 1.00 indicate factors more common among respondents who stay in Michigan, while odds ratios below 1.00 indicate factors more common among respondents who leave Michigan, after controlling for the other factors in the model.

As shown in Table 22, the variables associated with significantly *higher* likelihoods of staying in Michigan included:

- Having been a **resident of Michigan prior to college** – this was the single most important factor in the model, with an odds ratio of 8.26 which implies that the odds of staying in Michigan for respondents who lived in Michigan before entering college were 8.26 times those of respondents who lived elsewhere.

Table 22. Statistically Significant Predictors of Staying in or Leaving Michigan

	Odds Ratio
Increased Odds of Staying in MI	
Prior MI resident	8.26
Environmental factors important	1.76
Family factors important	1.55
Master's Degree	1.41
Black or African-American	1.39
Female	1.23
Decreased Odds of Staying in MI	
Career factors important	0.89
Single	0.87
PhD Degree	0.74
Asian	0.73
Lifestyle factors important	0.60
<i>Only statistically significant relationships ($p < .05$) shown</i>	

- Considering **environmental and family factors** important – respondents who rated factors pertaining to cost of living, the natural environment, and raising a family as being more important were more likely to stay in Michigan than those who rated these factors as less important.
- Having a **Master's-level education** – The odds of staying in Michigan for respondents who said their most recent degree was a Master's were 1.41 times those of respondents with other levels of education.
- Being **African-American or female** – Even after controlling for other factors, these demographic traits were significantly associated with greater odds of staying in-state.

On the other hand, the variables associated with a significantly *lower* likelihood of staying in Michigan included:

- Considering **career and lifestyle factors** important – respondents who rated factors pertaining to job opportunities, recreational activities, openness to diversity, and mass transit as being more important were more likely to leave Michigan than those who rated these factors as less important.
- Having a **PhD-level education** -- The odds of staying in Michigan for respondents who said their most recent degree was a PhD were only 0.74 times those of respondents with other levels of education.
- Being **single or Asian** -- Even after controlling for other factors, these demographic traits were significantly associated with lower odds of staying in-state.

The logistic regression analysis was also repeated for each of six specific regions of Michigan, based on whether or not the respondent had clicked on that area of the Michigan map to indicate they could see themselves living there (see Figure 6). The results of these analyses are presented in Table 23, with only the statistically significant relationships shown. For each different region, factors associated with a *higher* likelihood of being open to living in the region are highlighted in blue, while factors associated with a *lower* likelihood of being open to living there are highlighted in tan.

The results of the region-by-region statistical analyses indicate that having lived in Michigan prior to college was associated with significantly higher odds of being willing to live in each different region, except for the Upper Peninsula.

Additionally, in terms of specific regions:

- **West Michigan** – Considering lifestyle factors important was associated with a *higher likelihood* of being willing to live in West Michigan, while being female, Black or African-American, Asian, or considering family factors important were associated with a lower likelihood of interest in the region.
- **Mid-Michigan** – Valuing career or family factors highly was associated with a *higher likelihood* of being willing to live in Mid-Michigan, as well as being Asian or having a PhD. However, valuing lifestyle factors highly was associated with having *lower interest* in the region.

Table 23. Statistically Significant Predictors of Wanting to Live in MI Regions

	Odds Ratios					
	West Michigan	Mid-Michigan	S.E. Michigan	Tri-Cities / Thumb	Northern L.P.	Upper Peninsula
Prior MI resident	1.44	1.28	1.21	1.76	1.38	
Environmental factors important			0.75	1.21	1.56	1.95
Family factors important	0.90	1.07	0.77	1.22		0.79
Career factors important		1.10	1.31		0.89	0.75
Lifestyle factors important	1.09	0.89	1.77	0.74	0.75	0.62
PhD		1.23	1.47			
Female	0.85					0.82
Black or African-American	0.53			1.30	0.30	0.35
Asian	0.62	1.25	1.61	1.27	0.47	0.50
Single			1.22	1.21	0.87	

Blue highlight indicates variables associated with higher interest in the region
Tan highlight indicates variables associated with lower interest in the region
Only statistically significant relationships ($p < .05$) shown

- **Southeast Michigan** – Valuing career or lifestyle factors highly was associated with a *higher likelihood* of willingness to live in Southeast Michigan, as well as being single, Asian, or having a PhD. Valuing environmental or family factors were associated with having *lower interest* in the region.
- **Tri-Cities / Thumb** – Respondents who valued environmental or family factors highly were more likely to indicate an interest in this region, as well as those who are single, Black or African-American, or Asian. Those who valued lifestyle factors were less likely to see themselves living there.
- **Northern Lower Peninsula** – Respondents who highly valued environmental factors were *more likely* to see themselves living in the Northern Lower Peninsula, whereas those who valued career or lifestyle factors – as well as those who are single, Black or African-American, or Asian – were *less interested*.
- **Upper Peninsula** – Similarly, those who valued environmental factors were *more likely* to see themselves living in the Upper Peninsula, whereas those who valued family, career, or lifestyle factors – as well as those who are single, Black or African-American, or Asian – were *less interested*.

SECTION VII. CONCLUSIONS

Over 36 percent of graduates from Michigan's public colleges and universities have left the state – a number which is similar to but even slightly higher than was found in 2013. Although majorities of young graduates have personal ties to the state, are open to staying, and actively pursued employment opportunities in Michigan, many end up leaving anyway. Job opportunities and other career-related factors were consistently found to be among the most important reasons for moving out of state, although lifestyle factors such as the availability of cultural, social, and recreational activities play an important role as well. Michigan is especially losing graduates with engineering degrees, those who go on to work in education or scientific or technical fields, and those with advanced degrees.

Michigan does have many qualities recent graduates find attractive – including its cost of living, access to parks and natural areas, and varied seasons, as well as being close to most graduates' families and friends. In fact, subjective attitudes toward the state itself (and the automotive industry specifically, which was by far the top industry they associated with Michigan) were generally favorable, and even those born outside the state said their impressions of Michigan improved after living there.

Nevertheless, career issues loom large. Compared to those who leave, respondents who stay in-state report having a *lower* rate of full-time employment, *lower* incomes, a *greater* likelihood of working a job that is unrelated to their long-term career objectives, and *lower* levels of happiness and personal engagement with their job situation.

On the bright side, many of these gaps appear to be narrowing. Michigan residents are now much closer, on average, to their out-of-state counterparts in terms of full-time employment, income, and are more likely than in 2013 to report working a job that pertains to their long-term career. Moreover, around half of the graduates who moved away from Michigan indicated they might be likely to return within five years.

Whether these trends continue or reverse course will largely part depend on whether graduates see good career opportunities in their field and an exciting, attractive lifestyle when they consider their possible future in Michigan.

ⁱ Brandon Rigoni and Amy Adams. 2015. *As Baby Boomers Retire, It's Time to Replenish Talent* (Gallup Business Journal). < <http://news.gallup.com/businessjournal/181295/baby-boomers-retire-time-replenish-talent.aspx>>