JOBS for MICHIGAN'S
GRADUATES

Researchers at the University of Michigan, along with Youth Solutions, the parent of Jobs for Michigan's Graduates, partnered to find out the impact of the JMG program.

Here's what they found.

Participants had an average of **7.5 barriers**, including economically disadvantaged, trailing behind peers academically, and having a foster care background.

For every one additional hour spent in program activities, participants' weekly wages increased by between $1.09 and $2.25.

94% Graduation Rate

- 14% higher than the state average

- 27% higher than average for African American and economically disadvantaged students

Post program, 57% of participants had enrolled in post-secondary education, an **increase of +17,000%.**

A program such as JMG is especially *impactful for women*, particularly in improving their post-secondary education enrollment."

"If a student had previously dropped out of school and was re-enrolled in the JMG Out-of-School program, he/she saw an **increase in average weekly earnings of $107.**"

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Impact of Jobs for Michigan's Graduates Programming on
Participant Graduation Rates, Weekly Wages, and Enrollment in Post-Secondary Education

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Summary

The purpose of this study was to analyze the impact of Jobs for Michigan's Graduates (JMG) programming on graduation, employment, and post-secondary education enrollment outcomes for graduates of the program. JMG is the state affiliate of the national Jobs for America's Graduates (JAG) organization, and implements JAG model programming to serve at-risk youth and high school dropouts, ages 14-26. Researchers were most interested in the impact that the program's model services would have on participant weekly wage outcomes and the likelihood of pursuing post-secondary education. The seven model services analyzed by researchers are components of all JAG model programs and include: Academic Remediation, Community Service, Career Association, Employability Skills, Field Trips/ Guest Speakers, Guidance Counseling and Work-Based Learning.

The findings support Jobs for Michigan's Graduates as a promising program to positively impact low statewide graduation rates and the state's considerably lower minority and economically disadvantaged graduation rates. In addition, a program such as JMG is especially impactful for women, particularly in improving their post-secondary education enrollment.

Background

Jobs for America's Graduates, Inc. (JAG) is one of the largest school-to-work systems for at-risk and disadvantaged young people in the United States. JAG has served over 1,000,000 students – a 36 year history. Today, JAG operates in over 1,000 classrooms in 33 states, serving more than 50,000 young people a year. Throughout its history, JAG has partnered with third party researchers to conduct studies on graduation outcomes and post-high school employment experiences of program participants. At the time of these studies, JMG programming did not exist due to its launch in 2008. This study was designed to build on the methodology of prior studies with a specific focus on the success of Michigan-based programming. This study also extended prior studies to look at the impact of JAG Model programming on average weekly wage and enrollment in post-secondary education.

Process

This study included participants who took part in the program between the dates of December 12, 2011 and July 8, 2016. Data queries were run from the JAG Electronic National Database Management System. Two separate regression analyses were carried out: Ordinary Least Squares estimation is carried out to assess the impact of program services, barriers and demographics on weekly income. Binary Logistics estimation was done to assess the impact on the likelihood of post-secondary enrollment.

The study involved 299 program participants who received services in one of three JAG model programs – Multi-Year, Alternative, and Out-of-School. Participants' ages varied between 17 and 25, with 83% between the ages 19-20. Fifty-eight percent (58%) were female, and 79% were non-white with only 21% white participants. The overwhelming majority identified as black (69%). Study participants faced an average of 7.4 barriers with most of the participants facing an average of 6. Ninety-nine percent (99%) of JMG participants in this study reported having three or more barriers, compared to 87% of Jobs for Ohio's Graduates' participants, as reported in a prior study conducted nine years prior.

Findings

Positive outcomes for program participants included in this study were observed across all three JAG model types in operation by Jobs for Michigan's Graduates. Key findings included:

- Participants graduated at a rate of 94%, exceeding students' planned levels by 8%. Additionally, these outcomes were 4%, 18%, and 45% higher than JAG National goals for Multi-Year, Alternative, and Out-of-School model programming, respectively. Rates for African American participants were even higher, with a 95% graduation rate for students in the Multi-Year program, 91% for Alternative, and 90% for Out-of-School. JMG graduated African American students at a 27% higher rate than the state's rate for this ethnic group. Graduation rates for economically disadvantaged study participants were 94% – 27% higher than the state average.

- Researchers found a high correlation between Career Association and Employability Skills model services of .412, a correlation between Employability Skills and Field Trips/Guest Speakers of .398, and a correlation between Career Association and Field Trips/Guest Speakers of .386. These results were found to have a statistically significant impact on the participants' weekly income. For every one additional hour in Career Association participation, Employability Skills Training, and Field Trips/Guest Speakers, the students' weekly wage increased by $1.09.

- Post program, 57% of participants had enrolled in post-secondary education, an increase of +17,000%. Furthermore, 83% stated they were currently employed with a weekly income of $289, working on average 32.6 hours, earning $8.85 an hour.

- Of the study participants, 70% planned to enter part or full-time employment at the onset of the program, although only 20% were currently employed. After programming, 83% were employed – a 63% increase in student employment and 12% above students' planned employment levels. The average income ($170/week), number of hours employed per week (20.2 hours), and hourly earnings ($8.44/hour) increased by $119/week, 12.4 hours, and $.41 respectively.

- For every one additional hour spent in a JMG Academic Remediation or Community Service model service activity, there was a $2.25 increase in the weekly wage of the participant.

- Researchers analyzed the relationship between 35 participant barriers and weekly wage outcomes and found 13 barriers to be statistically significant. Most significantly, if a student had previously dropped out of school and was re-enrolled in the JMG Out-of-School program, he/she saw an increase in average weekly earnings of $107.

Conclusion

Overall, Jobs for Michigan's Graduates achieved each of the national performance standards. Successful outcomes were observed across all racial-ethnic groups. The program was most successful in helping participants overcome barriers such as being economically disadvantaged, having dropped out of school, having a father that does not work, lacking motivation, trailing behind peers academically, and having a foster care or runaway background. Academic Remediation and Community Service activities were found to have a significant impact on increases to the weekly wage of participants. Participation in the JMG Career Association, Employability Skills Training, and Field Trips and/or listening to Guest Speakers were found to have statistically significant positive impacts on participants' weekly wages as well as increased participants' likelihood of attending post-secondary education. **The study found Jobs for Michigan's Graduates is a viable program for addressing low youth employment and college enrollment rates.**

Impact of Jobs for Michigan's Graduates Programming on Participant Graduation Rates, Weekly

Wages, and Enrollment in Post-Secondary Education

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Purpose of Study

Jobs for America's Graduates, Inc. (JAG) is one of the largest school-to-work systems for at-risk and disadvantaged young people in the United States. JAG has served over 1,000,000 students – a 36 year history. Today, JAG operates in over 1,000 classrooms in 33 states, serving more than 50,000 young people a year. Throughout its history, JAG has worked closely with Dr. Andrew Sum, former Director of the Center for Labor Market Studies at Northeastern University. Dr. Sum's research on JAG National programming has centered on graduation outcomes and post-high school employment experiences of program participants.

Past Studies
Research by Sum, Fogg, Khatiwada, McLaughlin, Greenfield, Palma, and Sabodash (2007) offered empirical evidence supporting JAG National's successful performance history. JAG National had commissioned this study led by Dr. Sum to determine if the full JAG Model had been implemented and to determine the impact of JAG Model services on a JAG control group versus a peer comparison group. The study was prepared for JAG National's Board of Directors and staff leadership, and was disseminated to school district officials, state government leaders, corporate and foundation executives, and individual donors to the JAG organization. The research analyzed follow-up outcomes for the JAG Class of 2005 as reported in April through May 2006 follow-up surveys and tracked in the JAG Electronic National Database Management System (e-NDMS). Over 5,000 graduates were tracked over this two month period, with researchers exploring national follow-up outcomes from the prior 12-month period for graduates of the JAG Senior Year Model. Surveys were used to analyze outcomes based on the following variables:

- Positive activity rate
- Employment rate
- College enrollment rate

- Civilian employment/population ratio
- Full-time jobs rate
- Full-time placement rate

Findings from the JAG Class of 2005 were compared to peer data captured by the United States Census and United States Bureau of Labor Statistics' Current Population Surveys (CPS). In the study by Sum et al. (2007), JAG graduates from the Class of 2005 outperformed both JAG National performance targets and non-JAG peer groups on measures of employment and successful post-secondary education transitions. JAG participants were only one-half as likely to be disconnected from both college and work as the comparison group--the disconnection rate advantages were especially large for Black and Hispanic low income youth. When considering race and income differences between JAG graduates and the comparison group, the employment rate advantages of JAG participants ranged from six percentage points among African Americans to 10 percentage points among Hispanics and Whites. The employment rate advantages of JAG participants in each race-ethnic/low income group were substantial ranging from eight to ten percentage points. According to Dr. Jim Koeninger, President of the National Center for Evidence-Based Practices and Vice President of JAG National, "The magnitude of the differences due to race and income were most encouraging because Dr. Sum relayed to JAG National that these were the largest he had ever seen" (J. Koeninger, personal communication, January 16, 2017).

Khatiwada, Sum, McLaughlin, & Palma (2009) replicated the study by Sum et al. (2007) with a focus on Jobs for Ohio's Graduates' (JOG) programming. JOG programs utilize the JAG model, so this study explored the results of its application in one JAG-affiliated state. Results focused on the employment experiences of JOG program graduates from the Class of 2007. Researchers used data from the American Community Surveys for the same year. Similar to Sum et al. (2007), in addition to reporting on demographic data of participants, at-risk status was further defined using 12 "student and family background characteristics that have been found in previous research to be associated with the likelihood that a student will not graduate from high school, or go on to college, or obtain a job immediately upon graduation" (p. 3). All participants possessed at least one of the at-risk traits identified, 97% had two or more and 87% had three or more, placing students at-risk of not completing high school and/or moving onto college and/or employment post-graduation.

Study findings from Khatiwada et al. (2009) revealed that JOG youth were "much less likely to be both out of school and out of work" at a difference of 10% versus 27% (p. 11). The outcomes achieved by the JOG program were all-the-more impressive given more than half of the JOG participants from the Class of 2007 were in the bottom 50% of their graduating class, had below average GPA's, were low income, and had no plans to attend college. Despite these demographics and barriers to success, JOG students went on to post-secondary education at a rate of 3.5% higher than the general Ohio youth population. The same was true for non-college enrolled youth: JOG graduates were employed at a rate well above that of their high school peers, also non-college enrolled (83% v. 59%).

Current Study
The current study will build on some of the initial work presented by Sum et al. (2007) and Khatiwada et al. (2009) in analyzing success metrics for the Jobs for Michigan's Graduates Multi-Year Program from the Class of 2015. Similar to Khatiwada et al. (2009), this study is aimed at offering empirically validated performance outcomes and, as such, analyzes JMG Class of 2015 performance on JAG follow-up outcomes. However, the current study extends beyond the earlier studies in several important ways. First, this study includes program participants in the JAG Multi-Year, Alternative, and Out-of-School Model programs. Second, this study explores the impact of program model components on students' weekly wages and the likelihood of pursuing post-secondary education. These results will significantly add to existing research on Jobs for America's Graduates programming, while bolstering the credibility of the JAG Model as applied to Michigan programming. In assessing the impact of programming components, Jobs for Michigan's Graduates explores the affect each component had on different outcomes. This will have implications for developing and expanding future programming. More specifically, this study is intended to accomplish and/or address the following:

- Twelve years have passed since Sum et.al (2007) and 10 years since Khatiwada et al. (2009). In the decade since this research was conducted, significant changes at the state, national, and global level have occurred and have had implications for both education and employment within the United States and Michigan. The Great Recession of 2007-2008 hit Michigan particularly hard prompting the Obama administration to bail out the Michigan auto industry. According to the Federal Reserve Bank of Chicago, "Michigan's labor market continues to recover from the Great Recession that ran from December 2007

through June 2009 and its own recession that started four year prior to that. Michigan's unemployment rate peaked at 14.9% in June 2009…" (Lavelle, 2016). According to the American Fact Finder (2015), Michigan youth continue to lag the country in employment, with 16 to 19-year-olds at 26.8% unemployment and 20 to 24-year-olds at 15.6%. This compares to the United States averages of 25.1% and 14.2% respectively. Moreover, the Michigan Merit Curriculum (of 2014) and Common Core standards (adopted by Michigan in 2013) have both been passed, raising the graduation requirements for Michigan students. According to the Michigan Consortium for Educational Research, the tougher graduation requirements have resulted in slight graduation rate decreases for students entering high school with weak academic skills (Arndt, 2012). This is particularly true for the population served by Jobs for Michigan's Graduates. As such, a study that analyzes the success of the JAG Model under new economic conditions is well-timed.

- Michigan was not included in the initial study by Sum et al (2007). The researchers looked at JAG outcomes from 20 states in the JAG National Network; however, Michigan was not founded until 2008 and, as such, was not part of the study. As noted above, the economic climate in Michigan over the past 10 years as it relates to youth employment and graduation rates makes this study well-timed. This study will explore whether the JAG Model has successfully translated to strong education and employment outcomes for Michigan students. Moreover, it is the intention that the study will lend to intensification around those program components that are significantly related to positive wage and post-secondary outcomes for young people.

- Expansion of the study group to include youth with a wider range of barriers in various JAG Model programs enhances the ability to extrapolate study findings to a larger youth population that is more representative of Michigan's youth population.

- The University of Michigan's National Poverty Center promotes multi-disciplinary research on poverty and policy. Research findings that yield similar outcomes to the previous JAG National and JOG studies may have implications for poverty policy recommendations, specifically around expanding JAG programming. As Jobs for Michigan's Graduates receives both state and federal funding to support programming, positive study results could result in funding increases to expand programming in high poverty areas.

Background

Jobs for America's Graduates
The ultimate objective of the JAG model is to help disadvantaged youth secure a quality job that will lead to a meaningful and sustainable career. To achieve this objective, JAG focuses on supporting students in in-school and out-of-school contexts, emphasizing both dropout prevention and recovery. JAG programs support graduation while equipping youth with the academic and technical skills necessary to improve their employability. JAG requires not less than one year of follow-up and support after leaving the school environment. This latter

component is aimed at graduates securing a job and/or post-secondary education during the time when youth are most at-risk of failure.

According to Jobs for America's Graduates (2016), JAG's performance outcomes for at-risk youth populations include:

- *A 90% graduation rate* in the nearly 1,000 classrooms where JAG operates, from the most rural to the most urban.

- *Doubling* the rate of employment for poor and disadvantaged youth and *tripling* the rate of full-time employment compared to their counterparts.

- *Dramatic increase* in enrollments in higher education for this population, almost entirely first-generation college students.

The results achieved by JAG on a national scale have been at a cost of approximately $1,300 per participant – less than half the U.S. average of similar programs, none of which include the 12 months of follow-up. According to Jobs for America's Graduates (2016), evidence shows that young people who are employed full-time more than repay the costs of the program within 14 months in taxes paid alone.

Core Model Components. The Jobs for Michigan's Graduates model consists of a comprehensive set of services designed to keep young people in school through graduation and improve the rate of success in achieving education and career goals. All students have access to the following core model components:

- *Employability Skills Training (ES):* A trained JAG Specialist provides individual and group instruction to 35 to 50 students carefully selected by an advisory committee, comprised of faculty, administrators, counselors, and/or community stakeholders. JAG implements the Jobs for America's Graduates (JAG) Model to provide Multi-Year, Alternative, and Out-of-School programming. Out-of-School Model programming does not always occur in a whole-group/classroom instruction-based context. A competency-based curriculum consisting of 37 to 84 core competencies (varies by Model type) is used to teach Employability Skills Training. Competency areas include: career development, job attainment, job survival, basic skills, leadership and self development, and personal skills.

- *Academic Remediation (AR):* Students are provided academic remediation by certified instructors in core subject areas, such as math, science, English, and social studies.

- *Guidance Counseling (GC):* JAG Specialists provide individual attention to students to overcome barriers that prevent them from taking advantage of their high school education, completing requirements for a high school diploma and securing employment and/or pursuing a post-secondary education. JAG Specialists provide advice and support as students make significant career and life decisions. Specialists serve as a "one-stop" connection for participants to personal, psychological, and other youth services in the community.

- *Career Association (CA):* A highly motivational student-led organization – the JAG Career Association – provides opportunities for students to develop, practice, and refine their leadership and team membership skills.

- *Community Service (CS):* As part of the Career Association, students participate in community service learning activities and give-back to their communities.

- *Field Trips/Guest Speakers (FT):* Students attend talent tours on-site with employers and invite guest speakers into the classroom to present industry-relevant and/or educational information and opportunities.

- *Work-Based Learning (WL):* Job placement is provided during summer months and throughout the year. Partnerships with youth employment programs, such as workforce investment boards, support year-long learning and connecting classroom learning to the workplace.

- *Group / Social Recreation (GR):* Specialists work with students to foster inclusion in programming and build social membership through group and social recreational activities.

- *Other (*OT): All other non-categorized activities, including standardized testing.

In addition to the above core components, all 12th graders in the Multi-Year and Alternative Models, as well as participants in the Out-of-School Model, receive no less than twelve months of follow-up services upon their expected graduation. For Multi-Year and Alternative Model participants, follow-up begins on June 1st, the year of their expected graduation date. For Out-of-School Model participants, follow-up begins after 12 months of programming. All students in follow-up receive employment, post-secondary enrollment, and/or military transition assistance for a 12-month period. Program follow-up and core model services are documented in a comprehensive, national internet-based tracking and reporting system that records vital performance-related data (Jobs for America's Graduates, 2016).

JAG Model Types and Components

Multi-Year Model. The Multi-Year Program can last up to 60 months; however, is typically limited to 24 to 36 months due to Common Core state standards. Students may be recruited as early as 8th grade to attend JMG instructional classes during the 9th, 10th, 11th and/or 12th grade and receive support services for one year following graduation. The Multi-Year Program works with 40 to 50 students per specialist annually. Additionally, this program model includes:

- Employability skills training, participation in the JAG National Career Association, leadership development, job development, job placement services and post-secondary transition assistance. The goal of the program is graduation and successful transition into employment, post-secondary education, and/or the military.

- The JAG National Multi-Year Curriculum consists of 84 competency-based modules and provides up to 840 hours of classroom instruction for those students that complete four years of Multi-Year programming.

- The Multi-Year Program also includes a 12-month follow-up period for graduating seniors with emphasis on job placement, post-secondary education transition, and/or enlistment in the military. All non-graduates receive assistance in completing a GED or high school diploma prior to the end of the 12-month follow-up period (Jobs for America's Graduates, 2011b).

Alternative Model. The Alternative Education Program operates similarly to the Multi-Year Program except students served are less likely to succeed in traditional high school programming and are enrolled in an alternative schooling option. JAG Specialists serve 25 to 35 students through this model. Similar to the Multi-Year Program, specialists use the up to 84 competency-based modules, in addition to individualized instruction, to drive outcomes for students. The goals of this program remain consistent to the prior two models: graduation with transition into employment, post-secondary education, and/or the military (Jobs for America's Graduates, 2011c).

Out-of-School Model. The Out-of-School (OOS) Program serves youth (ages 16-24) who have left the traditional school system and are interested in completing requirements for a high school diploma or GED. High School dropouts normally experience extensive barriers to education and employment success including academic, economic, family and personal barriers. As such, the Out-of-School Program works to address these barriers with a range of services that include access to high school completion, counseling, employability skills training, barrier removal, membership in the JAG National Professional Association, job development/placement, and/or post-secondary education transition services. All services are intended to result in either a quality job leading to a career after graduation and/or enrollment in college. Additional program specifics include:

- The Out-of-School Program works with 30 to 40 high school dropouts in a cohort with open-entry, open exit program participation dependent upon completing graduation requirements.

- Instruction is based on 20 JAG employability competencies.

- Programming occurs in tandem with high school completion programming.

- The OOS program does not exceed 24 months, inclusive of the 12-month follow-up period. Follow-up programming mimics the above models following completion of a GED or high school diploma.

Jobs for Michigan's Graduates
Jobs for Michigan's Graduates (JMG) started in 2008 when Kinexus joined with local stakeholders to bring Jobs for America's Graduates programming to Benton Harbor, Michigan. Kinexus implemented two JAG Multi-Year Model programs at Benton Harbor High School in

2008-2009 to serve a total of 76 students. The program closely adhered to all JAG Multi-Year Model standards, but did not have senior year participants until 2009-2010. From 2010 on (aligning to the first senior year cohort), the Jobs for Michigan's Graduates (JMG) class at Benton Harbor High School has consistently achieved a higher graduation rate than the larger school population by as much as 29% (Table 1) (State of Michigan, 2016).
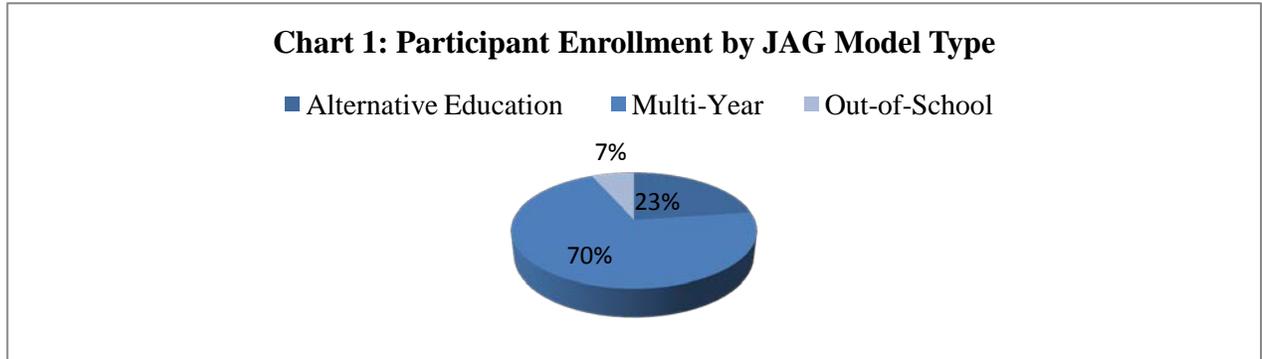
Table 1: Comparison of JMG to Benton Harbor High School's Graduation Rates								
	2008	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**
Benton Harbor High School	71%	82%	78%	77%	79%	58%	72%	71%
JMG at Benton Harbor HS	N/A	N/A	87%	89%	83%	76%	100%	100%
Difference	--	--	+9%	+12%	+4%	+18%	+28%	+29%

MI School Data, Michigan Department of Education (2017); JAG e-NDMS 2017

As the JAG National franchisee for the state of Michigan, Kinexus, a Southwest Michigan non-profit organization, was responsible for leading efforts to expand programming statewide. Kinexus adopted an affiliate structure for statewide expansion, allowing Jobs for Michigan's Graduates programming to leverage additional financial resources across the state. Kinexus affiliated with Michigan Works! organizations across the state to offer JMG programming in cities throughout Michigan. Under these affiliation agreements, Kinexus provides local Michigan Works! organizations with financial resources from the State of Michigan, foundations, and corporations, while affiliates leverage local Workforce Innovation and Opportunity Act funding to support programming. Affiliate partners in 2016-2017 include: Upward Talent, Networks Northwest, Michigan Works! Northeast Consortium, West Michigan Works!, GST Michigan Works!, Capital Area Michigan Works!, Michigan Works! Southwest, SEMCA, Detroit Employment Solutions Corporation, and Michigan Works! Southeast. The affiliate structure enabled Jobs for Michigan's Graduates to serve nearly 2,200 young people in 2016-2017 across 37 cities and 57 programs.

Analysis

This study includes 299 participants that took part in the program between the dates of December 12, 2011 and July 8, 2016. Of the participants, 173 (58%) are female, and 79% are non-white with only 62 (21%) white participants. The overwhelming majority identified as black (69%). Participants' ages varied between 17 and 25, with 247 (83%) of them ages 19-20. The study participants were enrolled in one of the three identified JAG Model programs (Multi-Year, Alternative, and Out-of-School), and were divided as shown in Chart 1:

Chart 1: Participant Enrollment by JAG Model Type

■ Alternative Education   ■ Multi-Year   ■ Out-of-School

7%

23%

70%

When entering the program, 86% (256) of youth stated they planned to graduate with a high school diploma. Seventy-one   percent (71%, 181) of these youth planned work full- or part-time. Sixty-nine percent (69%, 176) of these youth planned to attend a two- or four-year college or vocational school. Overall, 69% (206) of the 299 participants intended to work, and 59% (176) planned to purse post-secondary education.

High School Diploma or GED Attainment
A core outcome of all JAG Model programming is ensuring participants graduate from high school. Within Michigan, approximately 74% of open jobs require a high school diploma, further reinforcing the necessity of this outcome (EMSI, 2016). The performance targets for high school graduation rates vary by JAG Model type with the following targets: Multi-Year (90%), Alternative (75%), and Out-of-School (50%).

Prior to the program only one participant had a high school diploma or GED. Of the 299 participants in the Class of 2015 that were analyzed, 86% stated plans to graduate with a high school diploma. By June 2016, 281 of the 299 participants in all three programs successfully graduated from high school with either a high school diploma (275) or a GED (6), representing 94% percent of all program participants. This outcome exceeded planned levels by 8%. Additionally, these graduation rates can be compared to the larger state and national outcomes for high school-aged students. In 2015, Michigan had a graduation rate of 79.79% and the United States' graduation rate was 83%. As such, Jobs for Michigan's Graduates' Class of 2015 students exceeded state and national graduation rates by 14% and 11% respectively.

Overall, Jobs for Michigan's Graduates achieved each of the national performance standards, with very high graduation rates for many minority and economically disadvantaged students. These outcomes are particularly noteworthy when comparing JMG minority and economically disadvantaged students' graduation rates against those of the larger Michigan population.

According to the U.S. Chamber of Commerce Foundation (2015), Michigan is among the bottom five states in graduation rates for African-American students with a 67.31% average graduation rate (State of Michigan, 2017a). This rate lags the general state population by 12.48% Of the participant outcomes analyzed in this study, 196 of the 207 (95%) JMG students that identified as "Black" obtained a high school diploma or GED. This rate was 28% higher than the state's graduation rate for Black students. Similarly, Michigan's Hispanic students graduate at a rate of 72.07%, whereas the Hispanic participants in this study attained a 100% graduation rate, a difference of 28%. Finally, Michigan's graduation rate for economically disadvantaged youth is 67.48%; of the 256 study participants that identified as "economically disadvantaged," 241 of them graduated (94%). This outcome exceeded Michigan's graduation rate for economically disadvantaged students by 27%.

Model Services
Participants spent, on average, 66.2 hours within eight different JAG model services: academic remediation (6.6 hours), community service (10.6 hours), career association (10.2 hours), employability skills (10.8 hours), field trips/guest speakers (15.6 hours), guidance counseling (4.5 hours), work-based learning (3.4 hours) and other (4.7 hours). Table 2 shows the average number of hours spent in each model service by planned activity post-diploma at time of entry into JMG program. Based on the data, correlation existed between Academic Remediation and Community Service model services and separately among Career Association, Employability Skills, and Field Trips/Guest Speakers.

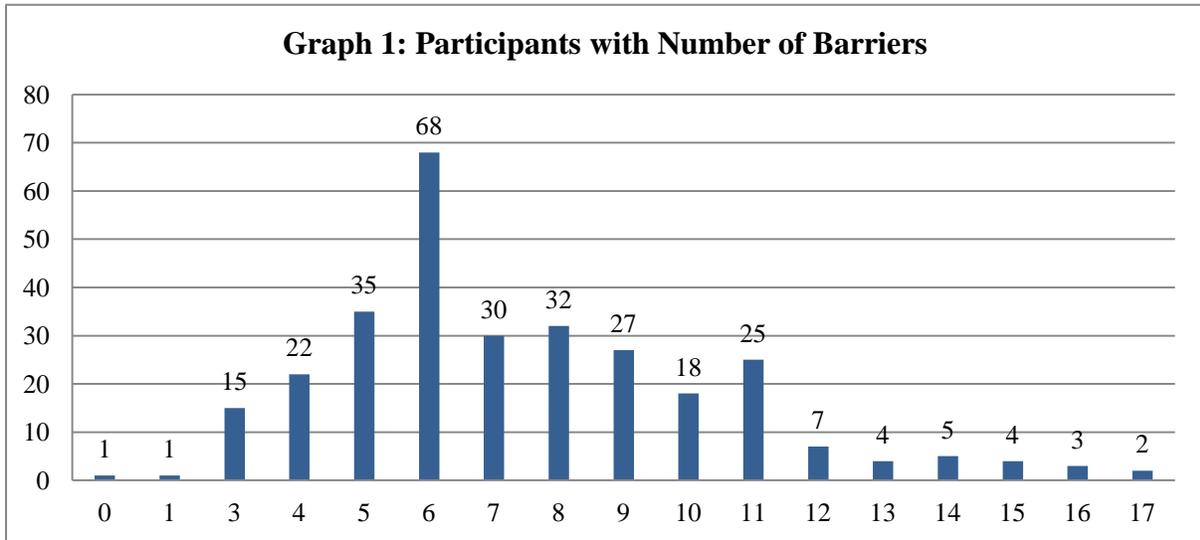| Table 2: Average Number of Hours in Model Services by Planned Activity Post-Diploma at Time of Entry into JMG		
Model Service	Plans to Work	Plans Post-Secondary Education
Academic remediation	7.1 hrs	6.6 hrs
Community service	11.3 hrs	11.1 hrs
Career association	11.5 hrs	10.8 hrs
Employability skills	11.3 hrs	11.1 hrs
Field trips/guest speakers	16.3 hrs	17.5 hrs
Guidance counseling	4.7 hrs	4.2 hrs
Work-based learning	3.5 hrs	3.8 hrs
Other	5.3 hrs	5.2 hrs

Barriers

Students faced numerous barriers that limited their success after the program. These are provided in Table 3:

Table 3: Student Barriers to Education and Employment	
Percent	**With Identified Barrier**
84%	Having inadequate or no work experience
81%	Lacks marketable occupational skills
78%	Economically disadvantaged
54%	Needs transportation
45%	Low academic performance
40%	A past record of excessive absences
38%	Deficient reading and math skills
33%	Mother does not work
30%	Father did not graduate from high school
26%	Has been suspended/expelled/probation
26%	Father does not work
24%	Lacks motivation or maturity
23%	One or more modal grades behind peers
23%	Family environment not conducive to education or career goals
20%	Mother did not graduate from high school
17%	Has dropped out of school previously
13%	Did not pass the state proficiency exam
12%	Has repeated a grade in school
12%	Has a disability
10%	Special education certified
7%	Is parenting
6%	Homeless
6%	Criminal offense other than a traffic violation
6%	Has dependent children in the home
5%	Alcohol and/or substance abuse
5%	Is pregnant
5%	Emotional disorder
5%	Has a record of violent behavior
3%	Health problems
3%	Requires childcare
3%	Other
2%	Foster Care
1%	Runaway
1%	Child of Incarcerated Parent
1%	Limited English proficiency

Students, on average, faced 7.5 of the above barriers with most (68) facing an average of 6 barriers to education and employment. The histogram below (Graph 1) shows the number of program participants facing different number of barriers ranging from none to 17.

Graph 1: Participants with Number of Barriers

Barriers	0	1	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Participants	1	1	15	22	35	68	30	32	27	18	25	7	4	5	4	3	2

Employment and Enrollment in Post-Secondary Education
Prior to the program, zero participants had any post-secondary education. Moreover, only 20% were employed with an average income of $170 per week, working on average 20.2 hours a week, earning $8.44 an hour. After the program, 170 (57%) had enrolled in post-secondary education, an increase of +17,000%. Furthermore, 83% stated that they were currently employed with a weekly income of $289, working on average 32.6 hours, earning $8.85 an hour. Table 4 shows the breakdown of graduates and non-graduates by program type, race, and economic status:

Table 4: Breakdown of Graduates and Non-Graduates by JAG Model Program, Ethnicity and Economic Status						
	Multi-Year		Alternative		Out-of-School	
	Number	Percent	Number	Percent	Number	Percent
Graduates	198	94%	63	93%	20	95%
Ethnicity						
White	22	11%	30	48%	6	30%
Black	167	84%	20	32%	9	45%
Hispanic	3	2%	2	3%	2	10%
Asian	2	1%	1	2%	0	0%
American Indian	0	0%	2	3%	0	0%
Multi-Racial	4	2%	6	10%	3	15%
Other	0	0%	2	3%	0	0%
Economically Disadvantaged	174	88%	51	81%	16	80%
Non-Graduates	12	6%	5	7%	1	5%
Ethnicity						
White	2	17%	2	40%	0	0%
Black	8	67%	2	40%	1	100%
Hispanic	0	0%	0	0%	0	0%
Asian	0	0%	1	20%	0	0%
American Indian	0	0%	0	0%	0	0%
Multi-Racial	2	17%	0	0%	0	0%
Other	0	0%	0	0%	0	0%
Economically Disadvantaged	12	100%	2	40%	1	100%
Total Graduates + Non-Graduates by Model Type	210	70%	68	23%	21	7%
Percent Above/Below Goal	+ 4%		+ 18%		+ 45%	

Table 5 shows the breakdown of employment and enrollment in post-secondary education for the JMG Class of 2015, including gender and race-ethnic group breakdowns:

Table 5: Employment and Enrollment in Post-Secondary Education by Gender and Ethnicity							
Measure	**Male**	**Female**	**White**	**Black**	**Hispanic**	**Other**	**Total**
Total Post-Secondary Education	63	107	36	126	1	7	170
Vocational Training Only	1	5	0	6	0	0	6
2-Year Postsecondary Education Only	46	66	28	77	1	6	112
2-Year Postsecondary Education and Vocational Training	0	4	0	4	0	0	4
2-Year and 4-Year Postsecondary Education	1	3	0	4	0	0	4
4-Year Postsecondary Education Only	14	29	8	34	0	1	43
4-Year Postsecondary Education and Vocational Training	1	0	0	1	0	0	1
Total Employed	106	145	56	172	6	17	251
Full-time Job with School	27	25	16	32	1	3	52
Part-time Job with School	26	63	15	71	0	3	89
Full-time Job No School	43	43	22	53	4	7	86
Part-time Job No School	10	14	3	16	1	4	24
Available/Unemployed and No School	10	8	1	11	1	5	18
Available/Unemployed With School	10	20	5	24	0	1	30

Demographics

Within Michigan, 54.53% of all students enrolled in post-secondary education in 2014-2015 were female (State of Michigan, 2017b). According to the State of Michigan (2017c), only 14.82% (75,411) of the 508,879 total enrollments in post-secondary education consisted of prior year Michigan high school graduates in 2014-2015. In 2015-2016, the number of enrollments compared to the total population of college students decreased to 11.45% (58,151). Of the prior year graduates enrolled in 2014-2015, the racial-ethnic enrollment background included: Caucasian (15.74%), two or more Races (19.04%), Native Hawaiian (13.91%), Hispanic (17.16%), Black (12.31%), Asian (13.08%), American Indian (14.09%), and Unknown (9.47%) (State of Michigan, 2017d). According to the Michigan Community College Association (2017), the average age of student attendees at 28 public Michigan community colleges is 25.7 with

56.17% of students falling in the 18-24 year old range. Moreover, 56.16% of students are female and only 27.91% are non-White. On the national level, 36% of community college attendees are first generation college students.

The 170 participants in this study who entered post-secondary education were comprised of the following racial-ethnicities: 74% African American, 21% White, 3% two or more Races, .6% Hispanic, .6% Asian, and .6% American Indian. Moreover, 53% (90) were first generation college students with an additional 4% of youth unaware of their parents' educational attainment level. Comparatively, the college enrollment demographics of Jobs for Michigan's Graduates to state and national data, JMG had 62% more African American and 5% more White students from its graduating class enroll in college than the state's population. Other minority enrollment rates fell below the state average, including Asian (13%) and American Indian (14%). This appears to be less a factor of the programs' success in promoting minority college student enrollment and more an underrepresentation of students from these racial groups in JMG programming. JMG also had 18% higher enrollment in post-secondary education from first generation college students compared to Michigan's community college data.

The following is an analysis of how different program model services, barriers faced by participants, as well as demographics affected the outcomes above. Two separate regression analyses were carried out: Ordinary Least Squares estimation is carried out to assess the impact of program services, barriers and demographics on weekly income. Binary Logistics estimation was done to assess the impact on the likelihood of post-secondary enrollment. The results are presented in Table 6:

Table 6: Affect of Program Model Services, Barriers, and Demographics on Observed Program Outcomes		
	Weekly Income	**Post-secondary Enrollment**
Constant	-104	
Demographics:		
Age	17.1	0.28*
Female	7.17	0.94***
Non-white	-20.6	-0.23
Model Services:		
Academic remediation +	2.25***	0.01
Community service		
Career association +	1.09**	0.05***
Employability skills +		
Field trip/Guest speakers		
Guidance counseling	-2.36	0.00
Work-based learning	0.28	0.02
Barriers:		
Having inadequate or no work experience	-29.3	0.64*
Lacks marketable occupational skills	29.9	-0.51
Economically disadvantaged	41.4*	0.29
Needs transportation	-9.22	0.18
Low academic performance	-25.7	-0.56*

Table 6: Affect of Program Model Services, Barriers, and Demographics on Observed Program Outcomes		
	Weekly Income	**Post-secondary Enrollment**
A past record of excessive absences	2.89	-0.56*
Deficient reading and math skills	-24.2	-0.14
Mother does not work	-47.4**	0.03
Father did not graduate from high school	-27.1	0.05
Has been suspended/expelled/probation	-62.0**	-0.45
Father does not work	40.5*	0.46
Lacks motivation or maturity	51.2*	-0.14
One or more modal grades behind peers	54.9*	0.92**
Non-conducive family environment	-55.7**	0.07
Mother did not graduate from high school	1.22	-0.48
Has dropped out of school previously	107***	-2.59***
Did not pass the state proficiency exam	35.8	-0.95**
Has repeated a grade in school	-83.6**	-0.91**
Has a disability	33.1	0.28
Special education certified	-61.0*	-0.80*
Is parenting	-19.7	-1.99**
Homeless	21.8	0.40
Criminal offense other than a traffic violation	21.3	1.21**
Has dependent children in the home	-33.3	0.51
Alcohol and/or substance abuse	10.8	1.42**
Is pregnant	-40.3	0.14
Emotional disorder	-34.2	0.70
Has a record of violent behavior	36.2	-2.00**
Health problems	-43.5	1.57*
Requires childcare	-46.2	1.99*
Other	-105*	-1.16
Foster Care	120*	-3.50***
Runaway	180*	-2.02
Child of Incarcerated Parent	87.8	0.95
Limited English proficiency	-54.5	-0.70
*, **, and *** mark those factors that are statistically significant at one-tail t tests at 90%, 95%, and 99% respectively.		

Discussion

The researchers were interested in analyzing the impact of Jobs for Michigan's Graduates programming on employment and enrollment in post-secondary education.

Employment

A core outcome for Jobs for Michigan's Graduates is employment, the first set of results in the regression analysis presented in Table 6. JMG programming is deeply connected to the state's workforce system and leverages local employer connections to support employment outcomes. Of the 299 study participants, 70% of them planned to enter part or full-time employment, although only 20% were currently employed. After programming, 83% were employed – a 63% increase in student employment and 12% above students' planned employment levels. The average income ($170/week), number of hours employed per week (20.2 hours), and hourly earnings ($8.44/hour) increased by $119/week, 12.4 hours, and $.41 respectively.

In total, 67% of the program participants were employed in a job in the public or private sectors with 61% employed full-time. Similar to graduation outcomes, performance targets for employment vary by JAG Model. Program participants achieved the following employment outcomes by model type as shown in Table 7:

Table 7: Employment Outcomes by Model Type								
	Multi-Year & Senior Model			Alternative Model			Out-of-School Model		
	Goal	Outcome	Difference	Goal	Outcome	Difference	Goal	Outcome	Difference
Employed in a job in the public or private sectors	60%	65%	+ 5%	60%	73%	+ 13%	60%	65%	+ 5%
Employed full-time	60%	58%	- 2%	60%	80%	+ 20%	60%	23%	- 37%

Researchers used participants' weekly income as one of two independent variables in the study. Beyond just obtaining employment, researchers were interested in analyzing if programming had an impact on the weekly income of program participants. The results of the analysis were presented in Table 4 and are referenced below:

Demographics. Researchers explored the relationship between age, gender, and race-ethnicity and weekly income, although none of the results proved statistically significant. Regarding age, an increase of one year in age resulted in an increase of $17.10 in weekly income; this was unsurprising as the researchers expected this outcome, given older individuals are often given more significant job responsibilities with corresponding pay. For gender, the researchers observed that female program participants were making an average of $7.17 more per week than male participants. Given wage disparities amongst the sexes, this finding proved surprising. Lastly, non-white participants made an average of $20.60 less than their white counterparts; again, an expected outcome given known wage disparities between whites and non-white youth.

Model Services. Researchers were most interested in the impact that the program's model services would have on participant weekly wage outcomes. The seven model services analyzed by researchers are components of all JAG model programs and include: Academic Remediation, Community Service, Career Association, Employability Skills, Field Trips/Guest Speakers, Guidance Counseling and Work-Based Learning. Researchers found a high correlation between Career Association and Employability Skills model services of .412, a correlation between Employability Skills and Field Trips/Guest Speakers of .398, and a final correlation between Career Association and Field Trips/Guest Speakers of .386. These high correlations made it impossible to determine which dependent variables in the set acted on the weekly wage variable. As such, the analysis was based on total hours spent on correlated model services.

First, when a study participant spends one additional hour in an Academic Remediation or Community Service model service activity, there is a $2.25 increase in the weekly wage of the participant. This finding was statistically significant at the 99% significance level, leading researchers to conclude that these model services had a direct impact on increases in the participants' weekly income. This finding is consistent with researchers' expectations. If a student engages in voluntary academic remediation and/or community service activities, he/she is likely more self-motivated and intrinsically driven to improve his/her environment, placing a stronger value on self-worth and accomplishments and leading to success in the workplace.

Career Association participation, Employability Skills Training, and Field Trips/Guest Speakers were also found to have a statistically significant impact on the participants' weekly income at the 95% significance level. For every one additional hour of these activities, the students weekly wage increased by $1.09. Researchers expected additional training in employment "soft skills," leadership development, employer site visits, and employer guest speakers would readily translate into better employment outcomes for study participants. Given the significant impact of these five model services on student employment outcomes, we would recommend that program specialists focus programming on these service delivery areas in the future.

The two remaining model services did not have a statistically significant impact on participant weekly wages. Surprisingly, guidance counseling activities had a negative relationship with weekly wage. For every additional hour of guidance counseling that a student received, the weekly wage decreased by $2.36. A likely explanation for this decrease is students requiring additional guidance counseling are likely to have a higher number of barriers and/or more significant barriers which negatively impact their employment success. These students are not as job ready as their peers who likely have fewer barriers requiring intensive counseling and barrier mitigation. Additionally, they are also likely to spend less time on model service components that had a positive impact on this outcome.

Lastly, work-based learning opportunities were not indicative of higher wage outcomes for students. Work-based learning includes subsidized employment opportunities that are supported by third-party funding organizations, such as the United States Department of Labor or a local foundation. The absence of a significant relationship between work-based learning and higher weekly wages for study participants is likely attributed to students earning Michigan's minimum wage as part of the subsidized employment opportunity.

Barriers. Researchers analyzed the relationship between 35 participant barriers and weekly wage outcomes. The selected barriers are standardized by JAG National and self-reported by the participants. Thirteen (37%) of the 35 barriers were found to be statistically significant at the 90% significance level or higher. The following 13 barriers had a significant impact on participants' weekly wages:

99% Significance Level:
If a student had previously dropped out of school and was re-enrolled in the Jobs for Michigan's Graduates Out-of-School program, he/she saw an increase in average weekly earnings of $107. Students in the Out-of-School Model program are typically more focused on securing employment and often have the flexibility to participate in a higher number of hours of work per week, due to a more abbreviated school schedule. As such, the researchers expected a higher weekly wage for this population.

95% Significance Level:
Having a mother that does not work and/or a family environment that is non-conducive to education and/or career goals decreased a study participants' average weekly wage by $47.40 and $55.70 respectively. The absence of employed role models within the home and the instability of the home environment both make it difficult for a young person to gain and maintain employment. Similarly, participants with a history of suspensions or expulsions and/or who have been on probation in the past also experienced decreased average wages of $62. Presumably study participants who are prone to getting into trouble with school officials or law enforcement also had difficulty maintaining employment. Finally, repeating a grade in school also decreased the average weekly wage by $83.60. Students who have difficulty completing academic coursework and who are behind academically are likely to experience difficulties in keeping employment and excelling within the job.

90% Significance Level:
If a participant was economically disadvantaged, he/she made on average $41.40 more than a non-economically disadvantaged participant. Taken at face-value, this finding seems contradictory to expectations; however, JMG partners with Michigan Works! organizations across the state to deliver programming leveraging federal workforce funding. Under new workforce legislation authorized in 2014, workforce development organizations are required to spend 20% of federal youth funding on work experience opportunities for economically disadvantaged young people. As this federal funding is need-based as determined by income level, economically disadvantaged students are likely to receive additional benefits in regards to employment. The same observations could be made for those study participants living in foster care and/or who are runaways and/or who had a father that did not work; average weekly wages for this population increased by $120, $180, and $40.50 respectively.

Participants who lacked motivation or maturity made on average $51.20 more per week than students without this barrier. This finding was not anticipated by researchers. Similar to lacking motivation/maturity, participants who were one more modal grades behind their peer made an average of $54.90 more than participants without this barrier. Again, this was not anticipated as typically poor performance in school does not translate into higher weekly earnings in employment. One possible explanation for this finding is the high number of alternative and out-

of-school participants in this study. Students in these two models would almost certainly possess this barrier. Given higher average ages and additional family-related barriers, students in these two models are also far more likely to seek out employment opportunities with more hours per week/higher wage opportunities. As expected, when students identified as having a special education barrier, their average weekly wage decreased by $.61.

Enrollment in Post-Secondary Education
Lastly, student enrollment in post-secondary education increased as a result of Jobs for Michigan's Graduates programming. At the start of programming, none of the students had participated in post-secondary education (inclusive of vocational training, two-year, and four-year college). At the conclusion of programming, 57% of students had enrolled in some form of post-secondary education. While enrollment fell just below the students' planned level of 59%, it is expected that higher rates of employment accounted for lower enrollment in post-secondary education.

The Binary Logistics estimation was performed to assess the impact on the likelihood of post-secondary enrollment based on a number of variables. Of the demographic data, age and gender both had a significant impact on the likelihood of enrollment. As expected, the older the study participant, the more likely he/she were to enroll in post-secondary education (significant at a 90% confidence level). As age increased by one year, the likelihood a student would enroll into post-secondary education increased by 28%. This is in alignment with state and national data around enrollment trends for recent college graduates and average of community college enrollment. Gender was also a significant variable in determining likely college enrollment, as females were significantly more likely than males to enroll in post-secondary education (significant at the 99% confidence level). If a study participant was female, she was 94% more likely to enroll in college. Again, this finding was consistent with the state and national data around gender enrollment.

Model Services. Three of the seven Jobs for Michigan's Graduates Model Services had a significant impact on the likelihood that a participant would enroll in post-secondary education. For every one hour of participation in Career Association activities, employability skills training, and attending post-secondary field trips/employer talent tours and/or hearing from guest speakers, a study participant's likelihood of attending post-secondary education increased by 5%. This was significant at the 99% confidence level.

The study findings that Career Association, employability skills, and field trips/guest speaker model services equate to a higher likelihood of post-secondary education enrollment support anecdotal observations from JMG programming. All JMG students are part of the Jobs for Michigan's Graduates' Career Association, a student-driven leadership organization that promotes service learning and leadership development. Some of the activities associated with the Career Association are required components of the coursework, such as participation in an Initiation Ceremony at the beginning of the program year. Other Career Association activities are optional and elected into by the student. For example, students can run for leadership roles within the Career Association that significantly increase their time commitment to programming. Moreover, the student has additional access to the program specialist in a mentoring capacity outside of traditional classroom hours. As additional hours of participation equates to additional

commitment on the part of the student and more adult mentorship, it is unsurprising that this would also increase the student's likelihood of applying to college. Regarding employability skills training, this model service is provided during the school day for elective credit in Multi-Year and Alternative Model programs. In Out-of-School programming, it is provided through both structured and unstructured delivery. In all three program models, program specialists work with junior and senior year equivalent students on college exploration, applications, financial services, and all related items as part of employability skills training. To further support this exploration/application process, specialists arrange for students to attend college site visits that broaden students' awareness of the opportunities that exist at the post-secondary level. Similar to the Career Association, logic dictates that the more hours the student participates in these exposure and application activities, the more likely he/she is to earn acceptance into college and have the foundational support necessary to enroll/attend.

The remaining four model services (academic remediation, community service, guidance counseling, and work based learning) were not found to have a significant impact on college enrollment. In general these model services are less directly related to post-secondary exposure and preparation activities. Students requiring significant academic remediation services are typically falling behind grade level expectations and, as such, are less likely to graduate and pursue advanced coursework. Community service and work based learning activities are aimed at leadership development and preparation for the workplace and have only a cursory relation to post-secondary enrollment. Of the four, guidance counseling is the service most aligned to promoting post-secondary education. It is likely that the guidance counseling being offered by program specialists is more focused on employment-related counseling services than post-secondary counseling. Nonetheless, as a future programming recommendation, there are opportunities for specialists to receive additional training in post-secondary access and/or additional resources to maximize college access opportunities as part of the guidance counseling model service.

Barriers. Researchers also examined the relationship between 35 participant barriers and a participant's likelihood to enroll in post-secondary education; the higher the magnitude of the statistic in the binary logistic analysis, the higher the likelihood of enrollment. Of the 35 barriers, 15 (43%) were statistically significant at the 90% significance level or higher. The following barriers were significantly related to the likelihood of enrollment in post-secondary education:

99% Significance Level:
If a student has dropped out of school previously, he/she is significantly less likely to pursue post-secondary education by 259%. Most of the students that have previously dropped out are enrolled in the Out-of-School Model program. As mentioned previously, the students in this program tend to be older and have a greater income need than their peers in Multi-Year or Alternative Model programming. As such, the emphasis of the Out-of-School Model is on employment, rather than post-secondary education. Similarly, students with a history in the foster care system are also 350% less likely to attend college. Living in foster care is co-morbid with many other barriers, as young people are not given as much support or resources within the foster care system. Accessing post-secondary education is significantly more difficult with fewer resources and less access to support.

95% Significance Level:
Students who were one or more grades behind their peers had a 92% increased likelihood of pursuing post-secondary education. This study finding was quite counterintuitive and out of alignment with researchers' expected finding. This was even more surprising given the above discussion that academic remediation services did not have a significant impact on enrollment in post-secondary education. The most likely explanation for this result is students with this barrier received extra academic remediation and attention from their program specialists to ensure a graduation outcome, thereby prompting additional conversations and planning around "next steps" following graduation. Unlike the finding for students who were behind grade level, students who did not pass the state proficiency exam and/or who had repeated a grade in school were less likely to enroll in post-secondary education. As college coursework requires proficiency in all core academic subjects, this was expected.

Counter to the finding that needing child care made a study participant more likely to enroll in post-secondary education, being a parent made a participant less likely to enroll. The demands of raising a child and need to generate an income make it difficult to simultaneously manage post-secondary education requirements. Study participants with past criminal offenses were more likely to pursue post-secondary education. While somewhat unexpected, these students are likely to receive additional guidance and support from court officials and are often required to participate in positive activities (such as college) as a diversion for their offense. Unlike the criminal offense finding, those participants with a record of violent behavior were significantly less likely to pursue post-secondary education. Violent offenses are likely to illicit longer criminal punishments and negative ramifications in an academic setting, such as being suspended or expelled. Thus, these students would not have as many opportunities to continue onto post-secondary education. Unlike students with a violent record, participants that identified as having an alcohol or substance abuse barrier were more likely to pursue post-secondary education. Again, this finding was counterintuitive to researchers' expectations, as substance abuse issues typically derail academic achievement in high school and render students less likely to pursue challenges, such as post-secondary education.

90% Significance Level:
Study participants with inadequate or no work experience, who had health problem, or who required childcare were all significantly more likely to pursue post-secondary education. Regarding inadequate work experience, students who do not have any industry specific training or relevant work experience will require additional training to obtain meaningful employment. Thus, pursuing post-secondary education is an advisable step following graduation. For students with health problems and/or who required childcare, the findings were counterintuitive to expectations. Being a parent and needing childcare pose real barriers to post-secondary success. Additionally, researchers would expect that students with health problems would be less likely to seek out a stressful academic environment out of fear of exacerbating health care problems.

Students with low academic performance or a past record of excessive absences were both 56% less likely to enroll in post-secondary education. Similarly, students with a special education certification were 80% less likely to enroll. All three findings were unremarkable, given consistent attendance is closely tied to success in school. Moreover, strong academic performance is typically a foundation for post-secondary acceptance.

Conclusion

Jobs for Michigan's Graduates has been quite successful in delivering strong outcomes for its participants, including high graduation rates, increases to average weekly wages, and an increased likelihood in enrollment in post-secondary education. Positive outcomes for program participants included in this study were observed across all three JAG model types (Multi-Year, Alternative, and Out-of-School) in operation by JMG. These successes were achieved despite significant academic, personal, and family backgrounds that placed students at risk of not graduating, obtaining employment, or enrolling into college.

Of the participants that graduated, 57% transitioned into post-secondary education outcomes and 83% went onto employment. The post-secondary education enrollment exceeds the national target by 27% and the employment rate exceeds national targets by 23%. Similar to graduation outcomes, high rates of post-secondary education enrollment and employment were also observed among African American study participants at 61% enrollment into post-secondary education and 83% employment. Again, study findings suggest that Jobs for Michigan's Graduates is a viable program for addressing low youth employment and college enrollment rates.

In the Khatiwada et al. (2009) study on Jobs for Ohio's Graduates, more than half of the youth in the study had no plans to attend college. In this current study conducted nine years later, 67% of all study participants planned to continue their education post high school. This difference in planned activities post-graduation for high school students nearly a decade apart could be attributed to a range of factors. Most obviously, the influence of technology on the workplace has increased substantially over the past ten years. A greater number of jobs within Michigan and the larger United States now require a post-secondary credential, likely influencing students' post-graduation plans. A second external factor that may account for this observed difference was Congress' passage of the American Recovery and Reinvestment Act in 2009. The legislation included nearly $7.2 billion in extra funds for the Pell Grant program for low income college students, increasing no-cost tuition access for low income high school graduates, including those students in JAG Model programs. Regardless of the factors impacting this shift - students, schools, and employers are increasingly focused on students earning post-secondary credentials prior to entering the workplace.

The findings from this study support Jobs for Michigan's Graduates programming as a viable option for increasing students' likelihood of entering post-secondary education. This study found that participation in the JMG Career Association, employability skills training, and attending field trips/hearing from guest speakers all increased a participant's likelihood of attending post-secondary education. Increased participation in the Career Association leads to additional one-on-one mentoring from the program specialist, enhanced leadership responsibilities within the program, and new experiences to create a competitive college entrance application. As employability skills training is a core component of all JAG models, students who receive a high number of employability skills hours are likely to be regularly attending school/participating in programming. This regular participation also increases contact with program specialists. And, when students are able to attend field trips to post-secondary institutions, they gain an awareness of different schools and further hone their interests.

The study findings also provide recommendations on services that would be useful in increasing the income and education level of participants in the Jobs for Michigan's Graduates program. First, Academic Remediation and Community Service activities were found to have a significant impact on increases to the weekly wage of participants. In both service delivery models, the youth spent additional time with adult mentors engaged in positive social and/or cognitive activities. The researchers recommend the JMG program focus on increasing the number of hours that youth spend in these two model services, particularly for those youth actively seeking employment. This finding is even more relevant for senior year participants in the Multi-Year program and/or participants in the Alternative and Out-of-School programs, all who tend to be older and in greater need of higher paying jobs.

Second, participation in the JMG Career Association, Employability Skills Training, and Field Trips and/or listening to Guest Speakers were also found to have statistically significant positive impacts on participants' weekly wages. All of these activities are directly linked to career awareness, exposure, and development opportunities for students. Researchers recommend that the JMG program increase the access to these services, offering students additional opportunities to participate in the Career Association and/or attend field trips/engage with guest speakers. These services allow students the opportunity to develop leadership skills, understand workplace expectations, and gain exposure to new careers/work environments. JMG program specialists should consider these value-add services that support wage increases. As employability skills training is already a key component of JMG programming, it should be continued and/or expanded to support participant wage increases. Given the significant impact of these model services on both post-secondary enrollment and weekly wage outcomes, the JMG program should focus the bulk of their model service hours on these activities. Time allotted for such programs are limited, and as you increase the time for one model service, you would need to reduce the time allotted for another. This analysis showed that there are greater returns to time allotted to career association, employability skills, and field trip/guest speakers, in increasing both post-program weekly income and post-secondary enrollment. Academic remediation and community service components have the highest impact on weekly income.

Study participants faced an average of 7.4 barriers with most of the participants facing an average of 6. Ninety-nine percent of JMG participants in this study reported having three or more barriers, compared to 87% of JOG participants in the study by Khatiwada et al. (2009) The most recurring barriers included inadequate or no work experience, lack of marketable occupational skills, economically disadvantaged, needing transportation, low academic performance, and a past record of excessive absences. Successful outcomes were also observed across all racial-ethnic groups. Barriers limit participants' success out of the program; however, the program was most successful in overcoming barriers such as being economically disadvantaged, having dropped out of school, having a father that does not work, lacking motivation, trailing behind peers academically, and having a foster care or runaway background. With each barrier, the program was successful in increasing post-program weekly income. Moreover, the program also had success in increasing the post-secondary enrollment of participants with barriers including: lack of work experience, being behind peers in grades, criminal offense, alcohol/substance abuse, health problems, and requiring childcare. Generally speaking, low academic performance, having been suspended/expelled, on probation, repeating a grade, and/or parenting are creating barriers

in participants in achieving higher post-program weekly income and post-secondary enrollment. In revision of the curriculum of the program, such barriers with persistent impact should be addressed directly, and sessions in reducing their impact on students' participation should be developed.

The study findings revealed that study participants graduated at a rate of 94%, exceeding the students' planned levels by 8%. While this average rate was 4% higher than the JAG National goal for Multi-Year, it was 18% and 45% higher than the Alternative and Out-of-School goals respectively. The graduation rates for African American participants were even higher, with a 95% graduation rate for African American students in the Multi-Year program, 91% for Alternative, and 90% for Out-of-School. JMG graduated African American students at a 27% higher rate than the state's rate for this racial-ethnic group. Lastly, graduation rates for economically disadvantaged study participants were 94%, also 27% higher than the state average rates for this population. The findings support Jobs for Michigan's Graduates as a promising program to positively impact low statewide graduation rates and the state's considerably lower minority and economically disadvantaged graduation rates. Such programs are especially impactful for women, particularly in improving their post-secondary education record.

A recent study by Givens, Gennuso, Jovaag, & Willems Van Dijk (2017) found that one in every seven Michigan residents, ages 16 to 24, were not working and not enrolled in school. Of the 1.3 million young people that fall into this age range, approximately 14% or 180,000 of them meet this disconnected definition. This disconnection rate compares to one in every eight young people across the United States. As such, there is an evident need for programming, such as Jobs for Michigan's Graduates, that focuses on dropout prevention and recovery efforts aimed at successful high school graduation and offers post-graduation follow-up services centered on employment and post-secondary education outcomes. This is particularly true as Michigan works to ensure far fewer of its residents fall into this disconnected group.

The researchers recommend future studies that build upon the findings presented above. First, as federal workforce legislation through the Workforce Innovation and Opportunity Act of 2014 has shifted funding emphasis to disconnected youth populations who are not actively enrolled in secondary school, additional studies on dropout recovery programming through the JAG Out-of-School Model are warranted into the future. While this study looked at Out-of-School Model programming in the context of the larger Jobs for Michigan's Graduates program, focused studies on this model that build on both the work of Khatiwada et al. (2009) and the findings from this study would reinforce JAG as a viable program for disconnected youth populations.

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