Which degree programs are most successful?

This paper is one in a multi-part series using data produced from the pilot Michigan Workforce Longitudinal Data System (WLDS). The WLDS is created by combining administrative records from multiple state databases, covering topics such as workforce development, education, and unemployment insurance. Once matured, WLDS data can be leveraged to answer a number of important questions related to the workforce and education, from the employment outcomes of Michigan’s students to the effectiveness of state assistance programs.

In this part of the series, we examine the relationship between the type of educational program pursued and subsequent employment outcomes. Specifically, this paper will discuss the effect that completing certain educational programs has on the amount of time it takes to find paid employment after graduation, as well as the associated earnings. Additionally, this paper will break down these post-secondary employment outcomes across the ten Michigan Prosperity Regions, seen in Map 1, and their respective 2-year and 4-year institutions. Due to limitations inherent in the test population, information presented in this paper does not represent all Michigan colleges and universities and incorporates data from 26 of Michigan’s 2-year institutions and 25 of Michigan’s 4-year institutions.

As a technical note, the initial run of WLDS data used a small, select population of Michigan Works! customers as the base upon which the pilot data system was built. All individuals included in the test population had to meet two criteria: they had to exit an education program during the study’s target period of July 1, 2009 to June 30, 2011, and they had to be registered as a Michigan Works! customer at any point between December 10, 1999 and June 30, 2014. Due to circumstances under which an individual typically visits a Michigan Works! office, this test population is not representative of the state population as a whole. For instance, employment outcome data for this group is often less positive than for the population due to employment barriers faced by a number of Michigan Works! customers. Consequently, none of the data presented in this paper should be viewed as a valid representation of the Michigan population. Rather, this paper is meant to provide an illustration of the types of information that can be made available when the WLDS is fully expanded.

Outcomes by Degree Program

One of the most fundamental questions that the WLDS can help answer is how employment outcomes vary from one program of study to the next, and Figures 1 and 2 (page 2) examine this issue directly. Using data from the test population of Michigan Works! customers, Figure 1 shows the average time to employment for the ten instructional programs with the highest levels of enrollment. As the figure demonstrates, there is considerable variation by program in the time that it takes an individual to find paid work. Those who have completed an
Education-related program on average have the lowest time to employment of only 165 days from program completion to finding employment. Inversely, those who completed a Visual and Performing Arts program on average take 240 days to find employment, 75 days longer than those who have completed a program in Education.

Figure 2 examines what occurs after these individuals have found work and begin to appear on employer payroll records. As with time to employment, there is significant variation in earnings across the ten groups. The two programs at the top of the earnings spectrum are Education and Engineering Technologies, which both have median annual earnings of about $44,000. This is approximately 45 percent higher than that of the program with the lowest annual earnings, Visual and Performing Arts, which has a median annual earnings of $30,493.

Furthermore, when comparing the average days to employment to the median annual earnings for each program, there is a clear correlation between having higher annual earnings and a lower time to employment. For example, the Education program has both the highest median annual earnings and the lowest time to employment, while Visual and Performing Arts programs have the lowest median annual earnings and the highest time to employment. This same pattern can be seen when comparing many of the other programs presented in the figures to the left.

These data demonstrate how a student’s choice of instructional program has important implications in shaping both a path to work as well as level of income. In the future, the WLDS can help students make these critical decisions by providing outcomes data using a representative population of Michigan students.
Outcomes by Type of Institution and Prosperity Region

Presenting information on degree programs is just one of many ways that WLDS data can be displayed to assist education stakeholders. The next two figures demonstrate how the WLDS can help with more localized decision-making, examining employment outcomes by Prosperity Region and type of institution. Figure 3 shows the average time to employment for individuals in the test population, disaggregated by attendance at a 2-year or a 4-year institution and Michigan Prosperity Regions. Some regions or institutions are excluded due to a lack of data. Within the figure above, several patterns emerge. First, there is considerable variation in the performance of 4-year institutions across the regions, while the 2-year institutions are more consistent in how long it takes students to find work. For example, average time to employment at 4-year institutions ranges from 169 days in Region 7 to 342 days in Region 6, a difference of almost six months. On the other hand, two-year institutions only vary from 179 days in Region 5 to 239 days in Region 1, a much smaller range of only 60 days. Second, looking across the regions, one type of institution does not clearly outperform the other. There is a lower time to employment for 2-year institutions in regions 4, 5, 6, and 8, while 4-year institutions perform better in regions 1, 7, 9, and 10.

Figure 4 examines wages earned by these students once they have successfully completed their search for employment. Of the ten Michigan Prosperity Regions, Region 5 has both the highest median annual earnings reported for both 2-year and 4-year institutions. Region 1 registered the lowest median annual earnings for 2-year institutions at $25,064, while Region 9 recorded the lowest earnings for 4-year
institutions at $29,650. Interestingly, the earnings information does not exhibit the patterns found in the average days to employment data. When looking at earnings, the 4-year institutions perform better than the 2-year institutions in every one of the regions for which data is available. This is much different than in Figure 3, where the institutional types were split in terms of performance.

Additionally, both 2-year and 4-year institutions exhibit a moderate level of variation across the regions. The median earnings of 2-year institutions vary from $25,064 to $32,833, a range of $7,769, while 4-year institutions ranged from $29,650 to $35,214, a range of $5,564. Again, this paints a much more consistent picture than the data in Figure 3, where the average days to employment for 4-year institutions varied widely across the regions.

In summary, the difficulty of finding work can vary widely from one region to the next, but the wages earned once employed are less varied. While it is important to remember that these data are biased due to the characteristics of the test population, future iterations of the WLDS can provide employment information that accurately represents the student population across Prosperity Regions and types of institutions.

Conclusion

The data discussed above represent a stepping stone for future endeavors in explaining the labor market success of degree earners in Michigan, and when fully expanded, the WLDS will provide a wealth of information on the relative performance of educational programs. Stakeholders will be able to view employment outcomes not only by major of study and the time it takes to earn a degree, but also by additional classifications of educational institutions such as public and private or non-profit and for-profit. When combined with information detailing the costs of various degree programs, the WLDS will provide a powerful tool for stakeholders to understand the relationship between higher education and the economic outcomes of Michigan’s students.

This paper is the product of a partnership between multiple state agencies. The WLDS is managed by the Michigan Workforce Development Agency, while all research and analysis is conducted by the Michigan Bureau of Labor Market Information and Strategic Initiatives. Data for the WLDS is provided by the Michigan Workforce Development Agency, Michigan Center for Educational Performance and Information, and Michigan Unemployment Insurance Agency.