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A Systematic Literature Review of LMI Usage in Postsecondary Institutions

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I n the context of increasing postsecondary accountability and technological advancements in data collection and analysis, it is becoming increasingly important to understand the use of labor market information (LMI) in higher education. To this end, we conducted a systematic review of the related literature to bring together existing discussions of these issues to date. Our review of grey and peer-reviewed literature between 2000 and 2022 examined 12 journal articles and 36 reports. This brief summarizes the findings from that review, addresses recommendations for future research and practice, and includes a bibliography of our sources for the field (Bjorn & Kerrigan, 2023).

Definition of LMI. LMI refers to all quantitative or qualitative labor market data and analysis related to employment and the workforce (LMI Institute, 2012). Traditional LMI refers to long-standing government-based data (e.g., data from the Bureau of Labor Statistics or the US Census), while contemporary LMI refers to data gathered from web-based job postings and social profiles on the internet (Lenard, 2021). Contemporary LMI also includes data culled from new, often privately funded products and systems that provide more up-to-date (including real-time) reports and greater analysis capabilities than those offered by traditional LMA sources.

Policy and Economic Forces Shape LMI Usage at PSIs. Policy and economic forces have shaped LMI usage at postsecondary institutions (PSIs) over the past 20 years. Federal legislation such as the Workforce Innovation Act, the Workforce Innovation and Opportunity Act, and the Carl D. Perkins Career and Technical Education Act (Perkins IV) have promoted LMI usage in the United States. These acts mandated improvements in LMI systems and increased the focus on data and evidence-based decision-making in postsecondary education, especially in career and technical education programs. In addition, significant economic shifts and events played crucial roles in heightening PSIs' emphasis on LMI. The Great Recession of 2008 and the COVID-19 pandemic, for example, both led to significant changes in the labor market that increased the need for PSIs to align their programs more closely with labor market demands and consumer interests.

LMI has Evolved with Technological Advances with Important Implications. The early 2000s marked a significant growth period in LMI, attributed to advancements in artificial intelligence, internet scraping, data visualization, and data modeling. This led to the emergence of real-time labor market information (RT-LMI; EMSI Burning Glass, 2012; Vollman, 2016). Millions of online job postings at websites such as Craigslist.com, Monster.com, and Indeed.com created massive new labor market data sets. Two companies, Burning Glass and EMSI (now Lightcast), drove the development of the RT-LMI industry during this period by taking advantage of evolving computer technology, the internet, and data science to develop data products that fundamentally changed the accessibility and types of LMI available. Technological advances in LMI have reinforced the dual role of PSIs in the labor market as both consumers and actors.

How PSIs Use LMI. Our review found many applications of LMI in higher education. LMI is used to enhance the quality of academic programs and address equity issues within institutions. includes aligning programs with labor market conditions and employer needs to ensure students are prepared for the evolving job market. Other LMI applications at PSIs include program review and development, alignment with employer requirements, academic planning, recruitment and enrollment strategies, and external partnerships. LMI users must navigate multiple data sources, from traditional government data to more recent online platforms, each with strengths and weaknesses. Cost considerations carry financial implications for accessing these sources, often dictating—and limiting—which and how much data PSIs are able analyze to make necessary improvements and adjustments. Cost considerations carry financial implications for accessing these sources, often dictating—an limiting—the access to and analysis of PSI to make improvements.

Data Infrastructure is Necessary. It was clear in our review that the existing data infrastructure within and across institutions is minimal and must be expanded upon. This includes the roles of those who use LMI and those who interact with it, such as data analysts, program planners, and strategic decision-makers. The literature provides insights into necessary organizational structures to support LMI integration and the use of LMI for improved decision-making. Professional development supports data infrastructure, and this review highlights the importance of staff training and development to ensure they are able to effectively utilize LMI in their roles.

Challenges and Supports Using LMI. A list of consistent challenges spanned the literature. One major challenge is the limitations of the available data. These limitations include the timeliness of data, geographical irrelevance, and the potential exclusion of emerging jobs and skills. Users of RT-LMI, while often able to draw on additional supports not available to users of traditional LMI, also face a number of unique challenges. Data literacy and skepticism of RT-LMI are significant challenges and include difficulties in interpreting these data, skepticism about their reliability, and concerns about the relevance and comprehensiveness of the information. To deal with challenges and the evolving LMI landscape overall, several organizations have published guides to help colleges and universities use LMI effectively (Dorrer & Milfort, 2012). These guides provide insights into a range of LMI sources, including their application in program review and development and in the enhancement of student success.

Recommendations and Suggestions for Policy and Practice

Several research recommendations and suggestions for policy and practice emerged based on our systematic review's findings.

Research

» **Empirical Research to Fill Knowledge Gaps:** There is a significant gap in understanding the impact of LMI on PSIs. New empirical studies should explore how LMI influences decision-making in program review, policymaking, and institutional effectiveness. We offer the following as possible starting points for this research:

» **Assessing LMI Impact on Students and Employers:** Research should be directed toward understanding how LMI affects students and employers. This includes examining its applications in aligning labor market demands with higher education offerings.

» **National Surveys and Data Collection:** Building on the findings of national surveys, such as the one by Kerrigan et al. (2023), can provide deeper insights into LMI usage trends and challenges faced by college leaders and administrators.

» **Regular Updates and Reviews:** Regular updates and reviews of LMI data and the methodologies used for collecting and analyzing those data are needed to ensure they remain relevant and accurate in rapidly changing labor markets.

Practice and Policy

Collaboration and Networking: Encourage collaboration between educational institutions, government bodies, and industry stakeholders to share best practices, resources, and LMI data more effectively.

Technology and LMI Advances: Since the evolution of LMI since the 2000s has been closely tied to technological advancements, it is essential for PSIs to continuously adapt and leverage the latest digital tools and platforms for LMI analysis.

Advanced Analytics: Utilizing advanced data analytics and predictive modeling to gain deeper insights from LMI data can aid in more strategic and forward-looking decisions.

Training and Capacity Building: PSIs should invest in training and capacity building to assist staff and administrators in the effective use and interpretation of LMI data for informed decision-making.

Policy Development for LMI Usage: The need for ongoing policy development is crucial. Policies should address the accessibility, affordability, and timeliness of LMI data to enhance its utility for PSIs.

These recommendations and best practices can maximize the potential of LMI in enhancing the quality and relevance of higher education in alignment with labor market needs.

References

Bjorn, G., & Kerrigan, M. R. (2023, October 25). Labor market information (LMI) usage in postsecondary institutions: A systematic literature review. https://doi.org/10.35542/osf.io/pfa35

Dorrer, J., & Milfort, M. (2012). Vendor product review: A consumer's guide to real time labor market information. Jobs for the Future. https://skilledwork.org/wp-content/uploads/2017/08/JFF-VendorProductReview_041712.pdf

EMSI Burning Glass. (2012, Feb 5). Making a key distinction: Real-time LMI & traditional labor market data. https://lightcast.io/resources/blog/making-a-key-distinction-real-time-lmi-038-traditional-labor-market-data

Kerrigan, M. R., Coty, V., Lenahan, J., Bjorn, G., & Van Noy, M. (2023). Emerging insights into the use of labor market information in postsecondary education. Rutgers Education and Employment Research Center. http://hdl.voced.edu.au/10707/658754

Lenard, M. (2021). Contemporary labor market information in postsecondary contexts. Society for Research on Educational Effectiveness. https://www.sree.org/assets/Summer_Fellows_Reports/sree_fellowship_lenard.pdf

LMI Institute. (2012). Defining labor market information (LMI) and LMI customers. https://www.lmiontheweb.org/wp-content/uploads/sites/4/2020/02/2014-06-27_-_Defining_Labor_Market_Information.pdf.

Vollman, J. (2016). Brookings Institution LMI forum: Real time labor market information. Brookings Institution.

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