

Wage Gap: Myth or Reality? Earning Gap Between Immigrants and Natives in STEM Occupations

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Abstract: The demand for U.S. temporary workers has doubled since the 1990s, especially after the technology boom. American employers have benefited from hiring foreign talent for STEM occupations. Despite the mandatory prevailing wage regulations, temporary skilled immigrants have been criticized for their *willingness* to work for lower wages. This integrated literature review aims to clarify the wage gap between skilled immigrants and natives in STEM occupations. This research design utilized a systematic literature review to identify relevant studies, collect data, and analyze data using thematic coding. Findings included two major themes: the wage gap as a *myth* and the wage gap as a *reality*. Practical and policy implementations will be discussed based on the findings of this integrated literature review.

Keywords: skilled-immigrants, STEM, wage gap

The United States of America has been one of the top destinations among skilled workers for decades, thanks to a strong economy and a good reputation for entrepreneurship (Batalova et al., 2016; Carnevale et al., 2011). Similar to other developed countries, the United States expands its skilled workforce through immigration (International Migration Outlook, 2015), especially in the fields of science, technology, engineering and math (Depew et al., 2017; Hanson & Slaughter, 2016; Tong, 2010). Temporary work visas that bring skilled workers to the United States have been heavily criticized due to a negative effect on local workers (Hira, 2010b; Matloff, 2004; Mithas & Lucas, 2010). Opponents argue that foreign workers are *less expensive*, and U.S. companies hire cheap and immobile labor to replace the native employees (Hira, 2010a), which may lower the wages of natives (Huang, 2010). Previous studies (Hanson & Slaughter, 2016; Lowell & Avato, 2014; Matloff, 2004; Tong, 2010) indicate that temporary workers earn less than natives despite the prevailing wage regulations. Therefore, a need for reform and enforcement of employment and immigration regulations are required (Lowell & Avato, 2014; Steigleder & Sparber, 2017).

The purpose of this integrated literature review is two-fold: (a) to review the existing literature to clarify the wage gap between skilled immigrants and natives in STEM occupations and (b) discusses whether skilled immigrants earn less compared to their native counterparts. This research design used a systematic literature review to identify relevant studies, collect data, and analyze the data using thematic coding. The guiding questions for this integrated literature review follow: What is the perceived reality regarding the wage gap between skilled immigrants and natives in STEM occupations? What is the impact of the “legal status acquisition” on the earnings of the temporary skilled immigrants in STEM occupations? Above mentioned questions guided this integrated literature review along with the research design.

Background

The wage difference between natives and foreign-born workers is a central concern in the public debate (Hanson & Slaughter, 2016). The most common argument is foreign workers' willingness to work for lower wages (Aobdia & Srivastava, 2018; Hira, 2010a), and employers' inclination to substitute higher-wage U.S. professionals with lower-paid foreign workers (Mithas & Lucas, 2010; Ottman, 2017). The reason skilled immigrants might agree to a lower salary could be explained by comparing their U.S. wages to those back home and/or a possibility of being sponsored on their temporary visa, which they view as a pathway to a legal permanent residency (Lowell & Avato, 2014). There is a concern that firms in the United States practice monopsony power over temporary workers, which reduces their bargaining power and leads to lower wages and poor working conditions (Hunt & Xie, 2019). Monopsony power often refers to a monopsony employer who has market power in hiring workers (Muehlemann et al., 2013). Therefore, skilled workers with temporary visa are more likely to suffer from a disadvantage in terms of benefits and job stability (Luthra, 2009). The practice of monopsony is also believed to decrease the demand for native workers (Matloff, 2013). However, several studies (Alarcon, 1999; Campbell et al., 2018; Hanson & Slaughter, 2016) claim that foreign-born professionals were more likely to be employed and have higher annual earnings than their local counterparts in science and engineering fields. Time spent in the workforce and upgrading immigration status have also been shown to increase the earnings of foreign-born STEM professionals (Lowell & Avato, 2014), whereas male immigrants earned more than females and had more flexibility to quit the job if desired (Ransom & Sims, 2010).

Research Design of Systematic Literature Review

An integrative literature review is a distinct form of research that reviews, criticizes, and synthesizes previously published literature on a specific topic and aims to generate new frameworks and perspectives (Torraco, 2005). The inclusion criteria for this integrated literature review were peer-reviewed journal articles that focused on the wage gap between skilled immigrants and their local counterparts in STEM occupations and were published during the last two decades in English in ERIC and Google Scholar. The initial search resulted in 360 articles, but after omitting the duplicates and studies that did not meet the inclusion criteria, 49 articles were selected as suitable for this paper. This integrated literature review utilized a mixed-research technique by collecting and analyzing quantitative and qualitative data. The matrix model was used for the data collection using an Excel spreadsheet to systematically record the data (Gerrard, 2014), where each article was summarized using rows and columns. For data analysis, the selected articles were reviewed individually again, and the author coded each article and identified major findings (Creswell & Poth, 2016). To assure the reliability and validity, the author repeated the coding process several times, read the articles, finalized coding, and identified key outcomes.

Theoretical Framework

Segmented labor market (SLM) theory was selected as a framework to guide this integrated literature review. Originally developed by Piore in 1971, this approach divides the dual labor market into a primary and secondary market. Primary jobs possess high earnings, better working conditions, stability, equality, and due process in work rules (Dickens & Lang, 1988), whereas

secondary (nonstandard) jobs have lower wages, poor working conditions, less stability, less likely to provide benefits (Kalleberg et al., 2000). The high demand for low-wage immigrant workers is theorized under the SLM theory. SLM creates a capital-intensive sector to meet the ongoing demand and a labor-intensive sector to satisfy the demand associated with economic cycles that constantly fluctuate (Massey et al., 1993). Hudson (2007) asserts that the American labor market is sharply divided between good and bad jobs. An increase in the number of immigrants into the United States has caused the labor market to become increasingly stratified based on national citizenship (Ehrenreich, Hochschild, & Kay, 2003).

This current integrated literature review seeks to determine the perceived reality regarding the wage gap between skilled immigrants and natives in STEM occupations and the impact of the legal status acquisition on earnings. From the SLM theory perspective, primary jobs should possess high earnings, stability, and equality. Considering that temporary work visas (H-1 and L-1) are granted to highly skilled and educated immigrants for STEM jobs that require years of expertise. Therefore, temporary skilled immigrants should be part of the primary job market with high earnings regardless of immigration status.

Findings

Prior studies that focused on wage differences between foreign-born STEM professionals and native workers found mixed evidence (Alarcon, 1999, Aobdia & Srivastava, 2018, Matloff, 2008). To better understand the wage gap, it is important to draw attention to the temporary worker visas and the limitations they possess for the temporary skilled workers. Temporary workers are restricted to the particular employment and time period (may range from one to six years) for which they are authorized and may have degree requirements (Temporary Work Visas, U.S. Department of State, n.d.). For example, H-1 temporary work visas are awarded to a certain foreign professional for specialty occupations for a period of up to three years with the possibility of extension for up to six years maximum (Butler, 2012). L-1 temporary work visas are awarded to foreign nationals for the length of an initial stay of one year, but companies may request an extension for a total of five years. For the L-1 visa category, sponsoring employers are not required to pay a prevailing salary, and temporary workers are not allowed to change their company and transfer their visa to a new employer (Hunt & Xie, 2019).

Some temporary work visas require the prospective employer to file a petition with U.S. Citizenship and Immigration Services (USCIS), and the visa will be available only after the petition is approved. American employers who wish to hire foreign talent must attest to the Department of Labor that they will pay wages at least equal to the actual wage paid to other employees with similar skills and qualifications or the prevailing wage for the job in the area of intended employment--whichever is greatest (Miano, 2005). Although there are 11 employment-based nonimmigrant visas for foreign nationals, American employers are more likely to utilize the H-1B and L-1 visa categories for STEM-related jobs than for other occupations due to the high demand for skilled workers in the STEM field (Rothwell & Ruiz, 2013).

Wage Gap as a Myth

Previously published studies (Alarcon, 1999; Campbell et al., 2018; Loftstrom & Hayes, 2011) were examined to answer the first research question. The studies that focused on earning equality among foreign-born STEM professionals and native workers found evidence that not only foreign professionals made more money (Campbell et al., 2018), but also increases natives' employment opportunities because of the productivity gains associated with immigrant scientists, and even had a positive effect on wages of natives by 7-8% (Peri et al., 2014). Mithas & Lucas (2010) surveyed 57,000 IT professionals and revealed that H-1B temporary work visa holders earned a salary premium when compared with U.S. citizenship in IT occupations. Loftstrom & Hayes (2011) study was consistent with Mithas & Lucas's (2010) study by stating that H-1B visa holders were in earning advantages compared to their U.S. born counterparts. In their sample, H-1B visa holders made on average about \$78,200, which was 10 percent higher than the average annual earnings of their sample of US- born workers (\$71,200). According to Hanson & Slaughter (2016), although the wage gap did exist between skilled immigrants and natives two decades ago in 2012, foreign-born earnings have exceeded the wages of native workers. Their study also mentioned that foreign-born professionals have better chances to reach the earning parity in STEM occupations compared to their counterparts in non-STEM jobs. Alarcon (1999) interviewed 20 skilled immigrants in Silicon Valley, and none of the participants complained about the wage parity. When examining wage differences among skilled immigrants and natives in STEM occupations, it is notable to mention that several factors such as immigration status, degree origin, the region of birth, gender, marital status directly affects the wages of the skilled immigrants. Lowell & Avato's (2014) study indicated that male immigrants made more money compared to females, whereas married immigrants had better income compared to singles. Additionally, skilled immigrants from Asia and Europe had better earnings compared to other immigrant groups. His study also claimed that employers are more willing to pay the prevailing salary to the skilled immigrants hired directly from overseas versus the recent graduates of the U.S. Universities.

Wage Gap as a Reality

Several studies (Lowell & Avato, 2014, Miano, 2005; Matloff 2008) yielded controversial results regarding the wage gap between skilled immigrants and natives. Matloff (2008) argued that in the IT field, companies pay to the H-1B holders approximately 15% to 33% less than the prevailing wage, and most tech companies hire average talented immigrants, especially from Asia. According to Hanson & Slaughter (2016), recently arrived foreign professionals in STEM jobs earned 5.7 percent less compared to natives, but in less than a decade, foreign professionals close this gap. Lowell & Avato (2013) revealed that H-1B earn significantly less on average compared to natives in STEM jobs as they may accept lower wages to improve their chances of being sponsored on the H-1B visa and potentially apply for a legal permanent residency. Miano (2005) argued that H-1B workers earn significantly less in computer occupations as well compared to their American counterparts. Loftstrom & Hayes (2011) also experienced an initial earning deficit of about 9% for newly hired H-1B visa holders for math and science occupations. There mentioned studies claimed that temporary skilled immigrants in STEM jobs earn less compared to the native workers, and the local companies do not offer the prevailing salary as mandated by Congress.

Legal Status Acquisition

Previously published studies were examined to answer the second research question: What is the impact of the “legal status acquisition” on earnings of the temporary skilled immigrants in STEM occupations? Previous studies (Lowell & Avato, 2014; Steigleder & Sparber, 2017) have focused on the legal status acquisition and its impact on the earnings of skilled immigrants in the United States. Lowell & Avato's (2014) study showed that upgrading the immigration status from temporary to permanent has a positive impact on the earning trajectories of the immigrants in STEM occupations. According to Mukhopadhyay and Oxborrow (2012), green card holders earn 25.4 percent more compared to the temporary worker visa holders that reflect lower bargaining power and limited mobility for the skilled immigrants (Hunt & Xie, 2019). Kandilov's study (2007) was also consistent with the previous studies, revealing that employer-sponsored immigrants experienced a significant increase in earnings following adjustment to permanent residency. Reviewing these studies revealed that immigration status does play a crucial role when it comes to the median wage for immigrants. Legal status (green cards) carries additional advantages such as higher job mobility, better bargaining power, no educational restrictions, or visa sponsorship compared to the temporary worker visas.

Discussion

Several policy implementations will be suggested based on this integrated literature review. The current immigration policy that regulates temporary skilled immigration should be revised in order not to link temporary immigrants to their employers. Dependency from employers may lower temporary immigrants' bargaining power and job mobility. Future studies should investigate whether skilled-immigrants earnings are consistent with prevailing salary requirements set by Congress. More studies should focus on the earning gap between skilled immigrants and the natives in STEM occupations as the previous studies yielded inconsistent results.

In practice, the results of this study can be utilized not only in the formation of future policies but also as a tool for workplace training and awareness. HRD professionals, policymakers, and employers can greatly benefit from the critical aspect of this training to bring more internal pay equity into the HRD practice. HRD professionals, stakeholders, and employers can work together to achieve internal pay equity, where employees feel they are being compensated fairly based on performance and skills regardless of their current immigration status. It is important for HRD professionals to understand the legal obligations of pay equity to assess the lawfulness of their organization's pay practices and take obligatory corrective action.

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