



# Labour Market Matters

## Special points of interest:

- Study finds education increases the adoption of technologies that carry out higher-order tasks.
- While Craigslist has caused strong efficiency gains in the housing rental market, the effect on the labour market matching efficiency is found to be muted.

*“[T]his study contributes to the literature on the relationship between education and economic growth by providing empirical evidence that supports education as an effective means to enhance technology adoption and diffusion and hence technological advancement and productivity growth.”*



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Volume 5, Issue 1

January 2013

## Exploring the Relationships among Education, Technological Adoption and Economic Growth

As developed countries shift more toward knowledge-based economic activities, information, technology, and learning play an increasingly important role. The use and adoption of new technologies by firms and workers constitutes a critical component of the process of technological diffusion and advancement. A paper by CLSRN affiliates Craig Riddell (University of British Columbia) and Xueda Song (York University) entitled **“The Role of Education in Technology Use and Adoption: Evidence from the Canadian Workplace and Employee Survey”** ([CLSRN Working Paper no. 83](#)) investigates the causal effects of workers’ educational attainment on their use and adoption of new technologies. The study shows that education exerts causal impacts on certain measures of technology use and adoption, although not all.

Relying on data from the Canadian Workplace and Employee Survey (WES) (1999-2005) and using the instrumental variable approach to overcome the endogeneity of education problem, the study finds that employees with more education are more likely to use computers on the job. Graduating from high school increases the probability of using a computer in the workplace by 37 percentage points and an additional year of schooling increases such probability by 7 percentage points, impacts that are large in size and statistically significant.

The study also finds that employees with more education possess longer work experiences in using a computer. Specifically, graduating from high school increases computer use experience by 6.2 years and an additional year of schooling increases computer use experience by 1.2 years. Education also increases time spent using a computer, both at the time of the survey and when the respondent first started the job. For example, graduating from high school increases computer use time when first started the job by 12.1 hours per week and an additional year of schooling increases that measure by 1.7 hours per week.

The impact of education on technology use in the workplace, moreover, is found to differ by the type of technology. Specifically, education does not exert causal effects on the use of computer-controlled and computer-assisted devices or other technological devices such as cash registers and sales terminals. In the context of the current “information and communication technology” era, these results are consistent with the view that education increases the use of technologies that require or enable workers to carry out higher order tasks, whereas schooling does not affect the use of technologies that routinize workplace tasks.

Findings from this study not only shed light on the role of



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education in technology use and adoption, but also contribute to the literature on the non-market impacts of education. To the extent that education increases technology use and adoption, the social benefits of education may be understated by standard outcome measures (e.g., individual earnings). This will especially be the case if an individual’s education and the associated technology use also influence employer and coworker outcomes.

Further, this study contributes to the literature on the relationship between education and economic growth by providing empirical evidence that supports education as an effective means to enhance technology adoption and diffusion and hence technological advancement and productivity growth. It thus illuminates one specific channel through which education may enhance economic growth.

## Craigslist: Can matching gains from housing be indicative of similar efficiency gains in Labour Market Matching?

Since its launch in 1995, Craigslist, has served as a platform for users to post ads that centre primarily on jobs, housing, services, personals, or for sale items, and has grown to receive more than 20 billion page views per month – making it one of the most visited websites in the world.<sup>1</sup> The advent of the internet age has revolutionized the way people search for goods, services, housing and even friends. The job-search market and apartment and housing rental market have been virtually transformed since the emergence of Craigslist and the wide abundance of easily accessible information has affected the way these markets function. A study by CLSRN affiliates Kory Kroft (University of Toronto) and Devin Pope (University of Chicago) entitled: **“Does Online Search Crowd out Traditional Search and Improve Matching Efficiency? Evidence from Craigslist”** (CLSRN Working Paper no. 108), finds that Craigslist significantly lowered classified job advertisements in newspapers, caused a significant reduction in apartment and housing rental vacancies, but had no effect on unemployment. The study finds that Craigslist reduced the number of classified job posts by approximately 7% between January 2005 and April 2007. The housing rental vacancy rate was also found to be reduced by roughly 10% (1 percentage point). This implies that rental

units where Craigslist was utilized for advertising took approximately 3 weeks less to rent out than they would have otherwise. In contrast to the study’s findings with regards to the apartment and housing rental market and even on the reduction of classified job posts, Craigslist was found to have no measurable impact on labor market outcomes, as measured by local area unemployment rates. The study also found that Craigslist did not have a detectable effect on low-skilled employment.



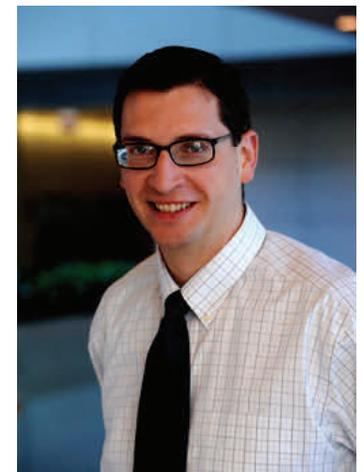
**Kory Kroft**  
(University of Toronto)

The researchers consider several explanations for their results. Unlike the apartment and housing rental market, the labor market has many other online job boards, and so the marginal impact of Craigslist may have been muted. A second explanation is that the two markets may be fundamentally different in ways that make the apartment and housing rental

market more responsive to improvements in information flows. In particular, search frictions – or the time sellers and buyers take to locate each other – might be much more important in the apartment and housing rental market than in the labor market. The researchers view their contrasting findings across these markets as a potentially interesting area for future research.

**“The welfare consequences of Craigslist are less tangible. Theoretically, if information between workers and firms is symmetric, a reduction in search costs increases welfare. Realistically however, the flow of information between workers and firms is generally asymmetric; in this case, a reduction in search costs could exacerbate adverse selection problems.”**

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**Devin Pope**  
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symmetric, a reduction in search costs increases welfare.<sup>2</sup> Realistically however, the flow of information between workers and firms is generally asymmetric; in this case, a reduction in search costs could exacerbate adverse selection problems. Indeed, a more costly search process can actually serve as an efficient screening device. For example, Craigslist increases the chances that *anyone* – qualified or not – can apply to a given job posting – exacerbating successful matching problems by flooding human resource professionals with both qualified and unqualified applications. Therefore, a more costly or exclusive search process might increase the likelihood of finding a suitable match.

<sup>1</sup> [Alexa.com](http://www.alexa.com) (March 24, 2011)

<sup>2</sup> Autor, D. (2001) “Wiring the Labor Market,” *Journal of Economic Perspectives*, Vol. 15, Issue 1 (Winter) 25-40.

### Endnotes

*Labour Market Matters* is a publication of the Canadian Labour Market and Skills Researcher Network (CLSRN). The CLSRN is supported by the Social Science and Humanities Research Council of Canada (SSHRC) under its Strategic Research Clusters program. Opinions expressed in this publication do not necessarily reflect the views of the SSHRC.

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