

Life-cycle Productivity of Industrial Inventors: Education and Other Determinants

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Abstract

This paper examines the life-cycle inventive productivity of Japanese industrial inventors. Using a panel of 1,731 inventors, we explore two issues. First, we examine whether and how inventors with advanced doctorate degrees (PhDs) perform better than their non-PhD counterparts, despite their delayed start. Second, we examine whether inventors who earned their doctorate degrees on the basis of a dissertation only (PhD-DO), for which a university performs only a certification function, are similarly productive. We found that inventors with traditional PhDs are significantly more productive on an annual basis than inventors with lower education levels, even controlling for the types of work places, project types and inventor's abilities and that they start inventions early after joining the firms, so that they are able to compensate for the delayed start easily. We further found that inventors with PhDs-DO have also high productivity, and they work longer as inventors.

Keywords: Inventor, life-cycle inventive productivity, productivity profile, education, patent

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