

More Recommendations on Relationship between R&D and Economic Innovation

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ABSTRACT

The goal of this article focuses on analyzing **More Recommendations on Relationship Between R&D and Economic Innovation** in recent years. Method: Methodology includes Qualitative research method, synthesis and inductive methods. We also expand SWOT model by adding Value part analysis on it. Results: Authors stated opportunities for values adding including but not limit to: the deep level of R&D will affect commercial activities (and of enterprises); R&D will improve productivity, market expansion and R&D will change process of firms.

Keywords: SWOT; Factors; R&D; Economic innovation.

1. Introduction

Nowadays in globalization era, roles of science and tech shows in creating breakthrough developments in all sectors and fields of industrial production, domestic trade, import and export and international economic integration. Burcay et al. (2015) pointed that "The concept of globalization accelerates the transfer of the trade from the local point to the international dimension". In today's information age, besides getting the information, it is important to use the information effectively and create value. This context increases the value of the innovation that means renewal of science and technology that provide economic and social benefits. The goal of innovation is positive change, to make someone or something better. Innovation leading to increased productivity is the fundamental source of increasing wealth in an economy. Hence innovation is the most important factor for countries that guarantees employment growth, sustainable growth, social welfare and the quality of life. International competition and sustainable growth have increased the importance of Research and Development (R&D) expenditure. So for this, a good R&D level is required for whole countries. The increase of the R&D level forms a basis for the innovation to move.

Entering the construction of socialism, production became the most important political task, so everything served production. At the same time, he also believed that each person needed to clearly understand: "Labor is a sacred duty of every citizen towards the Fatherland. Everyone must voluntarily participate in labor, contributing to the construction of the country according to their ability" (Source: Ho Chi Minh Complete Works, vol. 10, p. 545. The appeal on the occasion of May 1 published in Nhan Dan newspaper, issue 1150, May 1, 1957). According to Ho Chi Minh, contributing to the development of production must become a measure of morality and revolutionary will of each person, and he required "resolutely fighting against empty talk, showing off, and working styles that do not aim to improve production". Along with that, President Ho Chi Minh had the viewpoint of promoting collective spirit and opposing individualism, however, he believed: "If those personal interests are not contrary to the interests of the collective, then it is not bad. The common interests of the collective are guaranteed by the personal interests

of the individual to have the conditions to be satisfied" (Source: Ho Chi Minh Complete Works, vol. 11, p. 610. The article Revolutionary Ethics published in Hoc Tap Magazine, issue 12, 1958).

Through that, we see that Ho Chi Minh paid great attention to the role of the interest factor in the economy, and at the same time always used the ethics of the collective owner to promptly adjust conflicts of interest, creating a harmonious combination between common interests and individual interests, so that the state, cooperatives and members all benefit.

Sixth, the viewpoint of building an independent and autonomous economy while expanding and improving the effectiveness of international cooperation.

Expanding international cooperation in economic construction and development is a great and consistent thought of Ho Chi Minh. He believed that: "common progress depends on the development of internationalism; and civilization is only beneficial when international relations are expanded and strengthened" (source: Ho Chi Minh: Complete Works, vol. 1, p. 14. The Indigenous Peoples' Problem, L'Humanité newspaper, August 2, 1919).

After the August Revolution, the view of international economic cooperation was reaffirmed by Ho Chi Minh: The Democratic Republic of Vietnam "will stand with all friendly countries" and "will trade with all countries in the world that want to trade with Vietnam honestly" (source: Ho Chi Minh: Complete Works, op. cit., vol. 6, p. 46. Reply to an interview with Mr. Walter Briggs).

Hence authors choose this topic of **More Recommendations on Relationship between R&D and Economic Innovation** and our paper is organized with introduction, previous studies, main findings, discussion and conclusion. Analysis of latest research where the solution of the problem was initiated.

2. Summary of Previous studies

Particularly, there is also strong evidence that R&D spillovers from industrialized countries to developing countries have positive effects on the TFP growth of the latter (Coe, Helpman and Hoffmaister (1995); Griffith, Redding and Reenen (2002)). In a more recent study Savvides and Zachariadis (2003) show that both domestic R&D and foreign direct investment increase the domestic productivity and value added growth.

Moreover, Han, L.T. (2024) also analyzed and mentioned that there will be many macro factors including money supply and loans from banks that affect the market.

Next we also look at below table:

Table 1. Previous studies

Authors	Year	Content, results
Myers & Majluf	1984	Innovation policy, in the sense of policies affecting innovation, consist of a range of different policies (and policy instruments) that have been introduced at various points in time, with different motivations, and using a variety of labels including, increasingly, innovation policy. Some of this may have to do with terminological shifts.

Fabiano, et al.	2021	Firms with high levels of R&D tend to have significant proprietary information about their R&D projects which they do not wish to share with outside parties.
Griffin, et al.	2022	Consequently, when such firms seek external debt financing for their R&D investments, providers of debt finance may demand to see confidential information about the success of extant R&D investments and the potential success of proposed R&D projects. If the firm wishes to keep this information proprietary, this information asymmetry problem may discourage debt financiers from financing future R&D activities.
Vincent, et al.	2022	Explores the interrelationship between R&D investment, financial leverage, and a firm's R&D innovation success. Using a sample of UK and EU firms, we predict that changes in one-year-ahead R&D investment are negatively associated with changes in financial leverage in the current period. Crucially, we also predict that this negative association is positively moderated by the extent to which firms are successful in generating commercially viable and technically feasible innovations from their R&D work. We use insights from International Accounting Standard (IAS) 38: Intangible Assets to measure R&D innovation success. Our empirical findings offer strong support for each of our theoretical predictions. Consequently, we contribute to the extant literature by demonstrating that R&D innovation success influences how firms finance their subsequent investments in R&D.
Apa, et al.	2021	Absorptive capacity is therefore an all-important input to expand the innovation capacity and to maintain the sustainability trajectory of the innovation landscape.

Source: Author synthesis.

Hence we choose this topic: **Further Discussion on How to Improve Relationship between R&D and Economic Innovation.**

3. Methodology

- **Qualitative research method:** We also uses comparison and synthesis method, combined with analytical and inductive methods, whereas we take advantage of historical (combined with) dialectical materialism method for our qualitative analysis.

- **Quantitative research methods:** Authors use scientific results as reference.

3.1. Main findings and discussion

Overview of domestic research situation - First of all, the public support to R&D expenditures is rationalized in economic terms by the existence of positive externalities. When innovations are embodied, firms enjoy production

externalities to the extent that they use the new goods. As has been argued by several authors (e.g. Stokey, 1995, Jones and Williams, 2000), alongside positive externalities in the R&D process like ‘stand on the shoulders’, there is also the possibility of some others being negative (‘fishing out hypothesis’, ‘stepping on toes effect’, ‘creative destruction’, etc.), which makes the measured aggregate contribution of R&D to economic growth very uncertain.

Moreover, R&D variables stated in below.

The “Celtic Tiger” vs. the “Swedish Paradox”. Economic and technological indicators

	Ireland	Sweden
GDP per capita (current PPPs), 1999, (OECD=100)	113	103
GDP per capita (current PPPs), 2005, (OECD =100)	135	113
Average growth of GDP, in volume (1995-2005)	7.5	2.7
Expenditure on educational institutions (public and private) in percent of GDP, 1998	5.00	6.90
Expenditure on educational institutions (public and private) in percent of GDP, 2002	4.38	6.86
Gross Domestic Expenditure on R&D (GERD), in percent of GDP, 1997	1.43	3.85
GERD in percent of GDP, 2004	1.20	3.95
Business enterprise expenditure on R&D (BERD), as a percent of value added in industry, 1997	1.34	4.35
Business enterprise expenditure on R&D (BERD), as a percent of value added in industry, 2004	1.07	4.64
Business sector capital/output ratio, 1999	1.5	2.0
Business sector capital/output ratio, 2003	1.9	2.9
Exports in percent of imports:		
High-Tech industries	234	136
Medium High-Tech industries	192	135

Source: OECD (2000, 2006).

Figure 1. Comparing Ireland and Sweden

Last but not least we see below model:

The pervasiveness of the threats of climate change provides a basis for reflection on the prevailing intellectual property protection system, which focuses on enhancing the private appropriability of returns from R&D investments, thereby restricting the diffusion of knowledge outputs (Fabiano et al., 2021).

Next, we see below:

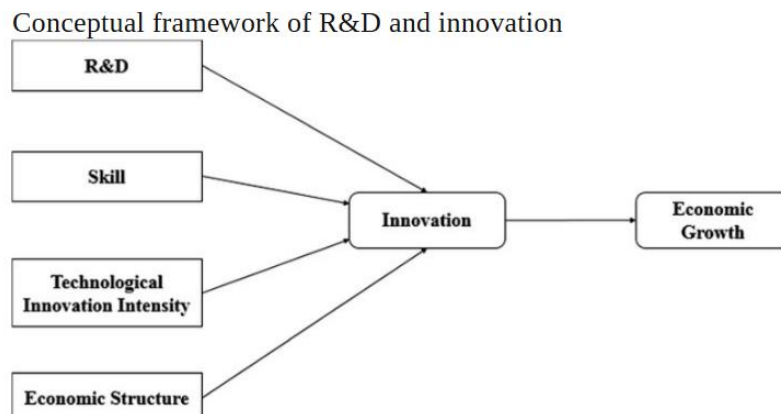
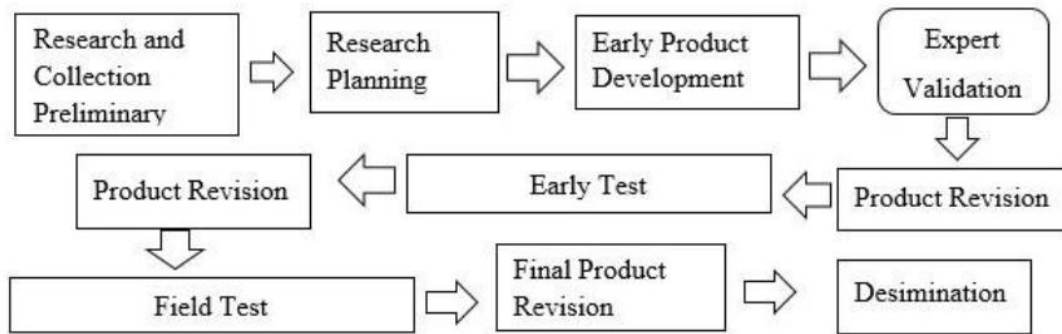


Figure 2. Path analysis for R&D (Source: Haq et al., 2020)

And also:



Research and Development (R&D) Model by Borg and Gall

Figure 3. R&D model

3.2. SWOT analysis

Table 2. SWOT analysis and Values

Values	<ul style="list-style-type: none"> - R&D: promoting researches among universities, industries, scientists; levels of R&D will influence benefits/values of global commerce among countries. - R&D might consist of: basic -applying- empirical.
<p style="text-align: center;">Strengths</p> <ul style="list-style-type: none"> - The deep level of R&D will affect commercial activities (and of enterprises). - R&D will improve productivity, market expansion. - R&D will change process of firms. 	<p style="text-align: center;">Weaknesses</p> <ul style="list-style-type: none"> - Using many old technologies.
<p style="text-align: center;">Opportunities</p> <ul style="list-style-type: none"> - Positive economic growth (average 5.2% last 3 years). - Linkage with universities and research institutes. - Taking advantage of young scientific researchers. 	<p style="text-align: center;">Threats</p> <ul style="list-style-type: none"> - Low productivity, still lack of high qualified laborers. - High, intensive capital foreign firms.

Source: Author Analysis.

Cost for developing trade facilitation measures: there are some types of trade facilitation cost, such as: Regulatory and legislative costs, Institutional and organizational costs. Human resources and training costs, Equipment and infrastructure costs, Operational and maintenance costs,... However, most developing countries that have implemented trade facilitation have seen the benefits exceed the costs (OECD, 2005).

Labor resources and the cooperation between the government, relevant ministries and agencies, and businesses. Sometimes, developing countries don't have people skilled and with good knowledge about trade facilitation, or people working in relevant agencies are not willing to change, to develop trade facilitation programs. Consequently, facilitating trade in developing countries may be taken slowly and long.

Figure 4. Trade facilitation barriers for developing markets (Source: Nga, L.T.V., et al., 2021)

Although specialized inspection has been reformed and highly appreciated by the business community, there are still some shortcomings presented in SWOT analysis above.

3.3. Discussion on Ho Chi Minh ideology for economic development

President Ho Chi Minh pointed out: The economy we are building is a socialist economy with modern industry and agriculture, advanced science and technology. "On the basis of an increasingly developed socialist economy, capitalist exploitation is gradually eliminated, and the material and cultural life of the people is increasingly improved".

The socialist economy must be established on the basis of public ownership of the means of production. In the transitional period, that economy still has four main forms of ownership: "State ownership means ownership of the entire people. Cooperative ownership means ownership of the working people. Ownership of individual workers. A few means of production are owned by capitalists", in which "the state-owned economy is a form of ownership of the entire people, it leads the national economy and the State must ensure its priority development". Thus, Ho Chi Minh was the one who soon proposed the policy of developing a multi-sector economic structure during the transition period to socialism in our country.

He emphasized: Our first important task is to build the material and technical foundation of socialism and affirmed the necessity of industrialization: "To ensure a happy life forever, we must industrialize socialism", "industrialization of socialism is still the common goal, the path to true prosperity for our people". He talked about the role of heavy industry: "To successfully build socialism, we must be determined to develop heavy industry well".

President Ho Chi Minh paid great attention to the research and dissemination of science and technology to serve production. He pointed out: "Science must come from production and must return to serve production, serve the masses, in order to increase labor productivity and constantly improve people's lives. The task of science and technology is extremely important, so all sectors and all people must participate in scientific and technical work" (source: hcmcpv.org.vn).

4. Conclusion

Ho Chi Minh's thoughts on economic construction and development Ho Chi Minh always placed economic issues in close relationship with socio-political issues: "We have gained freedom and independence, but if people still starve and freeze, freedom and independence are useless. People only know the value of freedom and independence when they have enough to eat and wear." Therefore, immediately after gaining power for the people, he called on the people of the whole country to actively increase production, determined to eradicate illiteracy and clearly pointed out the responsibility: "If people are hungry, the Party and the Government are at fault" (source: moit.gov.vn).

Moreover, endogenous innovation and growth framework argues that goal-directed, profit-seeking investments in knowledge play an important role in economic growth (Grossman & Helpman, 1994).

And it is necessary to research and promulgate regulations on safe lending policies to limit risks. This need proper lending policy or vital roles of banks (TD Thang, DTN Huy, PA Dung, LN Nuong, DTN Hien, 2024).

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Consent for publication

The authors declare that they consented to the publication of this study.

Authors' contributions

All the authors took part in literature review, analysis and manuscript writing equally.

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