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## An Analysis of Joseph Schumpeter's Life, Concept of Innovation, and Application for Estonia

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### **Abstract**

This research studies a basic concept of Schumpeterian Theory by exploring the life of Joseph Schumpeter and the application for Estonia. The secondary data were taken from World Values Survey (WVS); a worldwide group of researchers observing global values and their effect on society as a whole with headquarters in Sweden. Author took the most recent data of WVS in wave six (year 2010-2014) with the total of 74,042 cases for analysis. An analysis was performed by multiple regressions and no multicollinearity problems were detected. The results show that the nature of tasks (both manual vs. intellectual and routine vs. creative) affects the importance of employees being creative. Further analysis was performed by an independent pair sample T-test and the result shows that there are differences in the nature of tasks (both manual vs. intellectual and routine vs. creative) of Estonian and global employees. Subsequently, the final analysis was performed to explore the difference in the nature of tasks in intellectual and creative Estonian and global employees. However, there is no difference in this aspect between them.

**Keywords:** Innovation; Schumpeterian Theory; Secondary Data; Intellectual; Creative; Creativity; Workplace; Estonia

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## **Joseph Schumpeter: The Leader in Innovation Theory**

Innovation is a common word mentioned frequently in the academic world nowadays. Even in the business world, this word has been repeated as well. In fact, it is comprehensible that enterprises cannot survive without the development of innovation. Being innovative can bring wellness to society and improve know-how for those who are innovative (Witt, 2002: p. 19). In reality, the concept of innovation was derived from one of the best economists in mankind's history, Joseph Schumpeter (Tidd and Bessant, 2013: p. 8). Schumpeterian Theory, which concerns deeply on innovation, was dedicated by Joseph Alois Schumpeter (1883-1950) (Schumpeter, 2008: p. vii). His book "The Theory of Economic Development" that was written when he had been only 28 years old (Croitoru, 2012: p. 137), acclaimed the success of his life and made him to become the leader in innovation theory. The Theory of Economic Development (German: *Theorie der Wirtschaftlichen Entwicklung*) was written by Joseph Schumpeter and later translated into English by Redvers Opie (Schumpeter, 2008: p. vi).

Schumpeter was born in the Austrian empire on 8 February 1883 and passed away in the USA in 1950 (Fagerberg, 2009: p. 20; Groenewegen, 2010: p. 17; Mee, 2009: p. 1; Smithies, 1950: p. 628). Due to his personal life, his mother, working as physician in Wiener-Neustadt, remarried with an army man when he was 10 years old (Schumpeter, 2008: p. ix; Smithies, 1950: p. 628). Schumpeter got a PhD in Law from the University of Vienna when he was 23 years old (Schumpeter, 2008: p. ix). At the age of 26 with knowledge of English, French, Greek, Italian, and Latin, he became the youngest professor at the University of Czernowitz (Groenewegen, 2010: p. 17; Schumpeter, 2008: p. ix.), Austro-Hungarian Empire (nowadays, Chernivtsi University, Ukraine). His students included current gifted economists (Witt, 2002: p. 7). Even though Schumpeter seemed to be familiar with the academic world, he involved himself more in business and government sectors than academic sectors (Fagerberg, 2009: p. 20; Schumpeter, 2008: p. xlii). In 1932, Schumpeter had a chance to teach at Harvard University in some subjects such as Business Cycles, Economic Theory, History of Economic Thought, and Socialism (Hagemann, 2013: p. 2; Schumpeter, 2008: p. xlii). Schumpeter's work was influenced so much by Karl Mannheim (Jensen, 1985: p. 257) and Marxist concepts due to his respective teacher, Eugene von Böhm-Bawerk (Schumpeter, 2008: p. vii). He embraced Marxist thinking into his understanding (Fagerberg, 2009: p. 21). He then tried to explain in his book the core concept of innovation and the main source of innovation (Fagerberg, 2009: p. 20). He also thoroughly comprehends the concept of evolutionary theory (Witt, 2002: p. 20). Figure 1 shows his portrait.



Figure 1. Joseph Alois Schumpeter (Ābeltiņa, 2008: p.8)<sup>2</sup>

However, it is of questioning how effective Schumpeter's innovation theory was. For instance, Mee (2009: 1-5) mentions that Schumpeter's work, regarding his idea of the business cycle, is underestimated, especially when compared to Keynes' work of General Theory. Foster (1983: p. 328) also supports that it is of contradiction when Schumpeter mentioned capitalism when his work was influenced so much by Marxism. Questioning the efficiency of the theory, is there any other country trying to promote a brand-new process in debuting itself to international platforms by using innovation? A good example could be research by Jordan (2014: p. 285), which emphasizes Estonia's slogan 'Brand Estonia' and how it performed such innovative process in the past. There are some works done according to the Schumpeterian concept of innovation such as Smithies (1950), Foster (1983), Jensen (1985), Mee (2009), and Groenewegen (2010). Nevertheless, there is a very limited number of research investigate on how a country really adopts the concept of innovation into its policy. As a result, it is of curiosity as to how Estonia adopts the innovation process as the application to its national building process. This article is divided into five sections. The first section is an introduction, which describes and analyzes the life of Joseph Alois Schumpeter in general. The second section explains the concept of Schumpeterian innovation, which stresses into concept how Estonia deals with innovation, and implication to the theory. The third section employs the research methodology by using descriptive statistics and multivariate statistical methods. The fourth section reveals the findings of the research by using the data from World Values Survey (WVS). Finally, this article ends with the conclusion of the research.

## **The Concept of Innovation, Legacy, and Implication**

### *Innovation Concept*

With the stable growth of income, population, and saving of one certain country, that country will encounter sustained economic development (Schumpeter, 2008: p. xix). Therefore, a country with many resources will gain more economic development. Notwithstanding, it is

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questionable as to whether the ways an owner of enterprise using his resources can generate different plausible outcomes or not. Schumpeter (1928, p. 378) claims that a resource owner in an enterprise that can generate the new way of using resources can lead to the result of economic development, disregarding the past success of development (Jensen, 1985: p. 261). Therefore, brand-new usage of resources can bring positive outcomes. A development in human resource by putting national budget in educational investment is a good example for this. *Ipsa facto*, innovation differs from invention because invention deals with mechanical or technical ideas; whereas innovation can be any emerging idea that deals with business issues (Schumpeter, 1928: p. 366; Schumpeter, 2008: p. liv).

In reality, the benefit of innovation is that it can generate higher revenues for enterprise (Fagerberg, 2009: p. 21; Schumpeter, 2008: p. xxxv). On the other hand, based on Schumpeter (1928: p. 381-384) and Schumpeter (2008: p. xxi), it is difficult to create innovation due to some reasons: (1) this process requires a lot of budget for small enterprises, (2) certain knowledge for making business decisions is very insufficient; (3) the entrepreneur is too scared to take a risk; and (4) there are non-supporters in innovation. Witt (2002, p. 18) also adds that there will be copycats who readily imitate innovative products. Therefore, being innovative is risky and difficult. Finally, Hagemann (2013: p. 4) adds that in Schumpeter's work 'Statics' is congruent with 'Circular Flow' and 'Dynamics' is congruent with 'Economic Development'.

### *Estonia and Innovation: Legacy and Implication According to Schumpeterian Theory*

Estonia, along with Latvia and Lithuania, is Baltic state. It is located next to Russia and Latvia, with Finland across its strait. During the occupation of the Soviet Union, Estonian creative and innovative culture of startup had already emerged (L. S., 2013). Consequently, Estonia, as a post-Soviet country, was the first country to establish its own national identity project in 2001 (Jordan, 2014: p. 283). This project tried to encourage the better image of Estonia, altogether with boosting the entrepreneurship in the nation. This encouragement related with the innovation process, since innovation cannot emerge without entrepreneurs (Mee, 2009: p. 5). Thanks to its movement in promoting creativity and innovation, while roughly six percent of startups in Estonia came from high-technology industries (V. D., 2012), Estonia also had one of the highest number of startup per one entrepreneur in the world (L. S., 2013).

In 2011, Estonia had more than 14,000 enterprise registrations (V. D., 2012). However, it is a difficult question to answer as to how many of them are innovative enough. According to Schumpeter (1928, p. 378), when an enterprise can produce products or provide service at a cheaper price, this process will be considered as being innovative (Mee, 2009: p. 3). When the innovation process (as a bunch or a cluster of innovative activity) is presented in the national economy, this will influence the business cycle (Mee, 2009: 1-3). In addition, it is crucial that the collaboration of people (Fagerberg, 2009: p. 20) or employees should be innovative enough to create or maintain state-of-the-art production process in enterprise. According to Witt (2002, p. 14), the innovation flow will cease when brand-new process becomes monotonous (Witt refers this as 'Routine'). Therefore, here are the research hypotheses in our study 1:

*Hypothesis 1. The nature of tasks (manual vs. intellectual) affects the importance of employees being creative.*

*Hypothesis 2. The nature of tasks (routine vs. creative) affects the importance of employees being creative.*

## Research Methodology

To assess validity and reliability of the research, the author used secondary data provided by World Values Survey (WVS). WVS, with headquarters in Sweden, is a worldwide group of researchers observing global values and their effect on society as a whole (World Values Survey, n.d. a). WVS started in 1981 and now, with standardized surveys conducted in many countries, it is using the most precise research design in each country (World Values Survey, n.d. b). Previous research by Hofstede et al. (2010: xii-xiii) also used data from WVS to perform analysis in their research to fulfill the missing gap, especially in an Eastern European sample. As a result, the author of this current research took the most recent data of WVS in wave six (year 2010-2014) with a total of 74,042 cases for analysis by using parametric tests (multiple regression and independent pair sample T-test).

## Research Findings and Discussion

Based on table 1, the author examines the relationship between the nature of tasks (manual vs. intellectual), the nature of tasks (routine vs. creative) and the importance of employees being creative (Hypotheses 1 and 2). The data of the importance of employees being creative were taken from questionnaire item V70 (with the likert scale from 1-6). The data of the nature of tasks (manual vs. intellectual) were taken from questionnaire item V231 (with the likert scale from 1-10). And, the data of the nature of tasks (routine vs. creative) were taken from questionnaire item V232 (with the likert scale from 1-10). Multiple regression analysis was used as the quantitative tool and here is our model specification:

$$\text{The Importance of Employees Being Creative} = \beta_0 + \beta_1 \text{ Nature of tasks (manual vs. intellectual)} + \beta_2 \text{ Nature of tasks (routine vs. creative)} + \varepsilon$$

Table 1 Multiple Regression Analysis' Result (n = 74,042)

Predictors	B	SE	t	Sig.	Intercorrelation	
					TOL	VIF
Nature of tasks (manual vs. intellectual)	-0.013	0.002	-6.197	0.000	0.781	1.280
Nature of tasks (routine vs. creative)	-0.063	0.002	-27.793	0.000		

An analysis was performed by multiple regressions ( $R^2 = 14.5\%$ ) and no multicollinearity problems were detected ( $TOL = 0.781 > 0.100$  and  $VIF = 1.280 < 10.000$ ). The results show that the nature of tasks (both manual vs. intellectual and routine vs. creative) affects the importance of employees being creative and thus supports both Hypothesis 1 and 2. In study 1, it implies that given the environment in the workplace, this environment affects the characteristics of employees. However, this information is not enough to clarify that, according to Estonian creative and innovative startup culture<sup>3</sup>, if there is a difference in employee performance of Estonian employees and the other countries or not. Therefore, here are the research hypotheses in our study 2 to investigate in this issue:

*Hypothesis 3. There is a difference in the nature of tasks (manual vs. intellectual) between Estonian employees and global employees.*

*Hypothesis 4. There is a difference in the nature of tasks (routine vs. creative) between Estonian employees and global employees.*

According to table 2, the author performs the analysis by using T-Test for equality of means as a quantitative measurement for an independent sample test. The demographical data of the employees were taken from questionnaire item V2.

Table 2 The Differences in Nature of Tasks of Estonian Employees and Global Employees

Nature of Tasks	Employees	Mean	Sig. (1-tailed)
Manual vs. intellectual (n = 60,170)	Estonian	5.71	0.000
	Global	5.10	
Routine vs. creative (n = 59,961)	Estonian	5.26	0.000
	Global	4.58	

Based on an independent pair sample T-test, the result shows that there are differences in the nature of tasks (both manual vs. intellectual and routine vs. creative) of Estonian employees and global employees. Regardless of the environment of work assigned, Estonian employees tend to be more intellectual and creative than global employees, which supports both Hypothesis 3 and 4. However, we do not know exactly whether there are differences between intellectual and creative Estonian employees and intellectual and creative global employees or not. As a result, here are the research hypotheses in study 3:

*Hypothesis 5. There is a difference in the nature of tasks between intellectual and creative Estonian employees and intellectual and creative global employees.*

According to table 3, the author again performs the analysis by using a T-Test for equality of means as a quantitative measurement for an independent sample test. However, the author selected only employees with a score in the nature of tasks (manual vs. intellectual) and

<sup>3</sup> According to L. S. (2013) Estonian primary school students have to study computer programming.

the nature of tasks (routine vs. creative) more than 5. This process was done by recoding the data in V231 and V232 according to employees with likert scales from the range of 6 to 10. By doing so, this will wash away the data belonging to employees with the nature of tasks (manual) and the nature of tasks (routine). The demographical data of the employees were retaken from questionnaire item V2 and also recoded to be V0.

Table 3 The Differences in Nature of Tasks of Intellectual and Creative Estonian Employees and Intellectual and Creative Global Employees (n = 15,821)

Nature of Tasks	Employees	Mean	Sig. (1-tailed)
Intellectual and Creative	Estonian	7.97	0.399
	Global	7.95	

Subsequently, the final analysis was performed to explore the difference in the nature of tasks in intellectual and creative Estonian and global employees. However, there is no difference in this aspect between them and thus does not support Hypothesis 5. This implies that both Estonian and global employees, who are intellectual and creative, do not have distinctive tasks in their workplace (they tend to perform the same, regardless of work assigned). Table 4 is the summary of hypotheses.

Table 4 Summary of Hypotheses

Hypotheses	Results
Hypothesis 1. The nature of tasks (manual vs. intellectual) affects the importance of employees being creative.	Support
Hypothesis 2. The nature of tasks (routine vs. creative) affects the importance of employees being creative.	Support
Hypothesis 3. There is a difference in the nature of tasks (manual vs. intellectual) between Estonian employees and global employees.	Support
Hypothesis 4. There is a difference in the nature of tasks (routine vs. creative) between Estonian employees and global employees.	Support
Hypothesis 5. There is a difference in the nature of tasks between intellectual and creative Estonian employees and intellectual and creative global employees.	Does not support

### **Managerial Implication, Research Limitations, Future Research, and Research Conclusion**

Schumpeterian theory is important because it is the bedrock of economic process explanation nowadays (Schumpeter, 2008: p. xxiii). It is true that Schumpeter's theory is a breakthrough in the business world. He spent his whole life dedicated to the well-being of economic studies, including his very last work: History of Economic Analysis (Schumpeter, 2006: p. x). Due to his personality of being independent and ambitious (that it contradicts to an imaginary leader), we cannot deny that he is a real leader not only in innovation theory, but also in the business world. That is, a business leader does not have to listen to engineers in his



enterprise (Schumpeter, 2008: p. 13). Schumpeter also adds in his work (1928: p. 385) that an enterprise having a good leader does not mean that an enterprise will be successful since electing a leader is just a matter of politics. For managerial implication, Estonian government sectors can use the knowledge from this study to establish their new policy towards innovation and creativity in the workplace. For private sectors, they should encourage employees to be more creative and innovative, since they are more flexible than government sectors towards regulations. The example is that Estonian private sectors are not only the creators of Playtech, but also Skype (L. S., 2013; V. D., 2012). For research limitations, this research may not cover all aspects that influence innovation, since accomplishing innovation demands so many aspects such as group, people, or even social status (Fagerberg, 2009: p. 22). And, understanding people's behavior through innovation is a very complicated process. This is supported by Mee (2009, p. 4) that the nature of Schumpeterian work is almost implausible to explain in mathematical formulae. For future research, it is interesting to understand the bigger scope on innovation in a multinational stage. Future researchers may put their work forward to understand how innovation in the workplace works in multinational enterprise in various countries. They also can try to explain Schumpeterian work into a more visible mathematical form by the help of statistical methods.

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