

APPROACHES TO IMPROVED INSTITUTIONAL MECHANISMS IN TRAINING LABOUR FORCE TO PROMOTE INNOVATION

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Abstract

The paper deals with the approaches for satisfying the need for the training of modern labour force capable of implementing innovation. The focus of the research is the existing and potentially new institutional mechanisms for enhanced co-operation among the various key stakeholders. The authors' assumption is that more co-operation between the higher education and research system on the one hand, and the vocational education system on the other hand, would have a beneficial influence on the overall labour force training at all levels to promote innovation. Therefore, the target group for the empirical study of the present research have been medium and high level public administrators in both systems. This has allowed to obtain more objective and representative data and to determine the attitudes among various relevant stakeholders and decision makers regarding our research issue. This has also enabled us draw the conclusions regarding the vision of the Latvian public administrators on the existing gaps and the potentially needed future steps, also regarding the introduction and strengthening of new institutional approaches.

Keywords: innovation, labour force, skills, institutional mechanisms, complex approaches.

JEL Classification: M53.

Introduction

A key challenge in the European research and development policy is bridging the gap between the innovative research and its implementation in practice. One of the identified reasons for the existence of this gap is inadequately trained labour force, also in terms of the ability of the labour force to implement innovation. Although, according to the Innovation Union's Performance Scoreboard for Research and Innovation, human resources have been referred to as Latvia's relative strength, innovation as such and linkages between entrepreneurship and innovation have been indicated as a relative weakness – it has been estimated below average performance¹. As Latvia now already for many years has been at the bottom of EU 27 countries regarding in EU Member states' innovation performance², it is extremely important to pay attention to innovation and to take further steps for improving the situation, since it is crucial for the competitiveness of the national economy. Consequently, the above mentioned data have prompted our research topic – to study the approaches and mechanisms in developing the labour force in relation to innovation, or rather, in relation to the ability of the labour forces to implement innovation.

More specifically, our research interest was to study the existing and (potentially) new institutional mechanisms for addressing these identified needs and gaps. Our assumption was that the existing institutional mechanisms may not be adequate or sufficient for effective training of the labour force in demand – administrators, workers and employees capable of effective and broad introduction of innovative solutions into practice. In the present research by the institutional mechanisms we imply formalised structures and processes (including the normative base) being used for achieving the respective objectives.

Thus, within the framework of our research topic, the research problem addressed by the paper is – to what extent are the stakeholders within the higher education and research system and those within the vocational training system satisfied with the present situation regarding the implementation of innovation and to draw conclusions regarding their potential preparedness to accept new approaches and (institutional) mechanisms to address the new needs for training the 'innovation capable' labour force. It should also be pointed out that the present paper addresses only some aspects and problems of our overall research, therefore, while concentrating on these specific problems, we will occasionally refer to the broader context of our overall research, for more clarity and comprehension of the actual research context.

In order to carry out the research, we needed first of all, to investigate the existing research and research findings concerning our research topic, in order to create a theoretical background for studying our

¹ Innovation Union Scoreboard 2010. The Innovation Union's performance scoreboard for Research and Innovation.1 February 2011 (<http://www.proinno-europe.eu/metrics>).

² It has been pointed out in the Innovation Union Scoreboard 2011 and 2012 that "the performance of Bulgaria, Latvia, Lithuania and Romania is well below that of the EU27 average. These countries are 'Modest innovators'".

specific research problem. Being well aware of the new challenges in the overall European labour market and innovation processes, through our research we have been attempting, among other things, to identify the potentially novel approaches and new institutional mechanisms both, in Latvia and in Europe – as possible policy measures and initiatives in solving the identified problems.

Without much research emphasis, in our paper we will touch upon the recently emerged formation in Latvia – the twelve Branch (sectorial) Expert Councils (BECs)³. They are relatively new key actors in Latvia, established only in 2011 to implement governmental priorities for improved qualification systems and improved link between the labour market demand and the training of specialists for various branches⁴. The role of BEC's will be at the focus of our subsequent studies and important for the overall research.

As a result of our study we will attempt to draw conclusions regarding the vision of the key stakeholders in Latvian (higher and vocation) education and research regarding the status and implementation of innovation and regarding the role of education and training in securing the future innovation capable labour force. These drawn conclusions are highly relevant for our overall study, since based and depending on these findings and conclusions, the subsequent phases of our (empirical) research will be geared and carried out.

The novelty of the study is its attempt to view the issue of the (training of) the innovation capable labour force from a different angle – in the context of existing and potentially new institutional mechanisms. Although the empirical analysis of the present paper does not specifically target re-shaping of the traditional institutional mechanisms, the provided in-depth analysis of the opinions and attitudes of the key stakeholders regarding the status of innovation and the training issues of the innovation capable labour force is indispensable, as already mentioned before, for our overall study – since the potential alteration of the present relevant institutional mechanisms is within the range of responsibilities of our empirical research respondents. As increased horizontal co-operation, instead of the more traditional vertical co-operation within the systems of higher education and research on the one hand, and the vocational education, on the other hand, is a major question of our overall research, the newly established BECs will serve as an example of a potentially new type of institutional mechanism, and further on, a target for our further empirical study – still to be observed and analysed from a research perspective.

Aim of the research and the methodology

The current research is directed towards the existing and potentially needed new institutional approaches (mechanisms) to secure a complex treatment of the skills shortage or mismatch problem and for enhanced introduction of innovative solutions in practice. Given the fact that we are at the initial stage of the research and given the limited volume of the present paper, here we will be presenting specifically the findings regarding the attitudes of relevant stakeholders in the field towards a potentially different and novel approach in addressing the innovation capable labour force training problems.

To carry out the research, text and literature analysis was used (policy and statistics documents, legal acts and research articles), as well as the research results of our empirical study. The empirical study consisted of the survey of opinions and interviews with policy makers, administrators and experts in higher education, research and vocational education and training, on the actual evaluation of the existing situation.

For the implementation of the empirical research, a questionnaire was developed and tested among the proved professionals in the above mentioned fields. Evaluations had to be made in scale 1 – 10, where 1: fully disagree; 10: fully agree. Based on the material obtained by the questionnaire, the primary analysis of the opinions of the various target groups has been conducted and the results compared. Qualitative analysis has been complemented by quantitative analysis through applying the indicators of central tendency or location (arithmetic mean, mode, median), as well as indicators of variability (variance, standard deviation, standard error of mean, range, etc.). This has enabled us to draw conclusions regarding the research problem based on which further practical recommendations for possible steps in policy making taken.

³ The analysis of the various stakeholders attitudes towards BECs, although part of our overall research, is, however, not part of the present paper.

⁴ The BECs represent the key sectors of the national economy. Among other issues, the novelty of the BECs lies also in the approach to their formation and composition. If previously the emphasis was on including various branch associations, through the BECs all the branch associations have delegated their representatives to the BECs, thus securing the uniform opinion of the branch within one representative body.

Theoretical background

Public policies much depend on the tradition, however, at times when paradigms globally change, the revision of the approaches to the national policy making may be advisable – if not as an immediate reform initiative, then at least as an intellectual exercise to generate grounds for further targeted discussion. The same refers to the much discussed issue of innovation, as “over time, as the players in the innovation system and their specific objectives evolve, the portfolio of policy design also evolves” (Bodas Freitas I.M., 2008).

Under the new globally changing circumstances, the nationally existing tradition may be becoming a double-edged sword. As argued by Bodas Freitas, the national pattern of alignment of objectives of national players towards innovation, as undertaken by policy-makers, depends on the present and past specificities and characteristics of the national innovation systems and of the innovation support networks (Bodas Freitas I.M., 2008). On the one hand, the existing tradition secures stability, however, on the other hand, it may be hindering the needed flexibility in addressing the new global challenges. Hobdaya, however, reflects on the need for specific innovation policy design and argues that innovation policy makers and analysts have traditionally paid little attention to design policy (Hobdaya, M. et al, 2012). He differentiates between five generation models for innovation and claims that design policies tend to reflect on some previously popular approaches, rather than systems or network based fifth generation models⁵. According to Hobdaya, within the field of innovation, the lack of attention to design and design policies applies both to academic studies and to policy reporting and policy making (Hobdaya, M. et al, 2012).

Flanagan favours the recent emergence, take-up and use of the term ‘policy mix’ by innovation policy makers and by policy analysts and scholars alike, implying the focus on interactions and interdependencies between different policies, as they affect the extent to which policy goals are realised (Flanagan, K. et al 2011). He also argues that the innovation policy debate has changed in recent years - policy makers, scholars and analysts alike increasingly focus on challenges stemming from policy complexity. According to Flanagan, “policy prescriptions often explicitly or implicitly assume that policy action is confined to the selection of discrete and well-defined instruments – or the development of new ones – by a single, purposive, (boundedly) rational and disinterested ‘policy maker’ – often implicitly synonymous with national government or ‘the state’” (Flanagan, K. et al 2011).

This is clearly not an approach in compliance with good governance. Moreover, as pointed out by Von Schomberg, on-going public debate and monitoring public opinion is needed for the legitimacy of research funding and particular scientific and technological advance (Von Schomberg, 2012). This concerns also technological innovation, and principles of good governance apply here, if research and innovation is to be responsible. To address this, “public debate, ideally, should have a moderating impact on the “Technology Push” and “Policy Pull” of new technologies” (Von Schomberg, 2012). The speed with which modern technologies are innovated seems to be accelerating, and there appears to be some consensus that faster technological change is likely to create substantial problems for public policy makers (Rycroft, R.W., 2006). This relates also to the issue of the co-ordination of public investment. The strength of each institution arises not just from its own productivity, but also from its ability to make other institutions more productive (Hoskisson, R.E., 2004). Thus, various strategic partnerships are becoming increasingly important, and the conscious involvement of various stakeholders (social partners) needed to enhance the overall ‘productivity’ in the broader understanding of the word. Evidently, a good and realistic balance should be sought by relevant stakeholders to secure the right proportion of the ‘push’ and ‘pull’ impacts.

Thus, Saint-Paula distinguishes between ‘primary innovation’, which is the introduction of a new good, and ‘secondary innovation’, which is a cost reduction in an existing good, discussing the ‘home bias’ assumption that it is cheaper to produce a good in the country where the innovation has taken place (Saint-Paula, G., 2002). Along somewhat similar lines, Lundvall and Borrás claim that technology policy means different things to different countries from the point of view of their level of income and size. In big income countries the focus will be on “establishing capacity in producing the most recent science-based

⁵ According to Hobdaya, 5th generation systems integration and networking model is typical during post-1990ties and represents fully integrated parallel development supported by advanced information technology. Use of expert systems and simulation modelling in R&D. Strong linkages with leading edge customers (customer focus at the forefront of strategy). Strategic integration with primary suppliers including co-development of new products and linked ICT systems. Emphasis is on corporate flexibility and speed of development (time-based strategy). Policies focus on improving system and market conditions and infrastructure (e.g., supply of human resources) and addressing market and system failures which impact business innovation.

technologies, as well as apply these innovations”, whereas in smaller countries it might be a question about “being able to absorb and use these technologies as they come on the market” (Lundvall & Borrás, 2005). Certainly, this may be a questionable approach, at the same time the related issue of best practice and policy transfer cannot be overlooked. Marsdena, for example, stresses the importance of policy transfer regarding innovation, claiming that such understandings should help to promote and accelerate the uptake of effective and well matched policies (Marsdena, G. et al, 2011). At the same time, they point out that the governance structure in the European cases varies widely, and also different institutional frameworks exist. Sharif argues that nowadays technological innovation has emerged as a leader of desired societal progress and „there now seems to be universal awareness that technological innovation is indeed the engine for economic prosperity of a country... and technological innovations provide limitless opportunities for all people to do: more things, newer things, better things, and things faster than ever-before” (Sharif, M.N, 2012).

However, no public policy regarding innovation can be implemented without an adequately trained labour force. Continuous training of the labour force is needed even under the conditions of the existence of unemployed skilled labour force, and therefore incentive for training the labour forces should be increased even under such circumstances. As argued and proved by Boom, failure to do this will cause the problem to become even more severe, and only if perfect markets for training can be established, then efficient levels of training can be achieved (Boom, A., 2005). Proceeding from the Boom’s argumentation, in the current global situation with the unprecedented increase of unemployment, the continuous training of skilled labour force remains of paramount importance.

Thus, implementation of the research and development policies and innovation goes hand in hand with the respective and adequate training of the labour forces, both, in the higher education and in the vocational education system. A systemic innovation approach for this is needed, and, as indicated in the OECD/ CERI study of systemic innovation in VET, a systemic innovation approach is “any kind of dynamic, system-wide change that is intended to add value to the education process and outcomes” (OECD/ CERI study, 2008), and public programmes should ideally be geared towards “coordinating and rewarding individual and collective learning for a determined period of time in order to accomplish specific objectives” (Bodas Freitas I.M.,2008). Within the context of the present research, we will be examining the attitudes of the policy makers and administrators in the in the higher education and vocational education in Latvia, concerning their opinions of the existing innovation policies, their implementation and the problems of the training of the respective labour force to implement innovation.

Empirical research results

Table 1. Main statistical indicators on research and innovation policy in Latvia in 2012

		In Latvia as research result valuable innovative solutions are created	Innovative approaches resulted by research policy are successfully implemented	Research policy is enough connected with demanded innovative solutions	Labour force is competent for research results' implementation	It is necessary to pay more attention in education and training for realisations of innovations
N	Valid	19	19	17	19	19
	Missing	0	0	4	0	0
	Mean	6,2105	4,4737	4,5294	5,1579	7,6316
	Std. Error of Mean	,41590	,31870	,68662	,46681	,44070
	Median	7	4	5	4	8
	Mode	5 and 7	4	5	4	8
	Std. Deviation	1,81288	1,38918	2,83103	2,03479	1,92095
	Variance	3,287	1,930	8,015	4,140	3,690
	Range	7	5	8	7	6
	Minimum	2	2	1	3	4
	Maximum	9	7	9	10	10

Source: Expert survey on January – February, Evaluation scale 1 – 10, where 1- fully disagree, 10 – fully agree (n=19)

Information in table 1 indicates that experts on innovation issues have low evaluations on issues related to innovations: the lowest evaluations of all experts are for the statement “Innovative approaches resulted by research policy are successfully implemented” where there is the lowest arithmetic mean of the evaluations, most of experts for the statement gave 4 (mode), for half of experts evaluations were less than 4, for half of experts evaluations were more than 4 (median). For this statement there were the lowest differences in evaluations of experts – confirmed by indicators of variability. For the statement “Research policy is well connected with demanded innovative solutions” experts had very different view points: there was the greatest variability of evaluations, there were even two experts whose evaluations were 9, but many experts gave low evaluations. Most of the experts evaluation was 5, also median was 5. Great differences of expert evaluations were for the statement “Labour force is competent for research results’ implementation” – from 3 to 10, most of experts gave evaluation 4 (mode), half of experts gave evaluations less than 4, for half of the experts gave evaluations more than 4 (median). Based on the analysis of the policy makers and administrators’ statements – major work and input is needed to put the innovation policy on the right track.

Average expert evaluations on innovation issues are stated in figure 1.

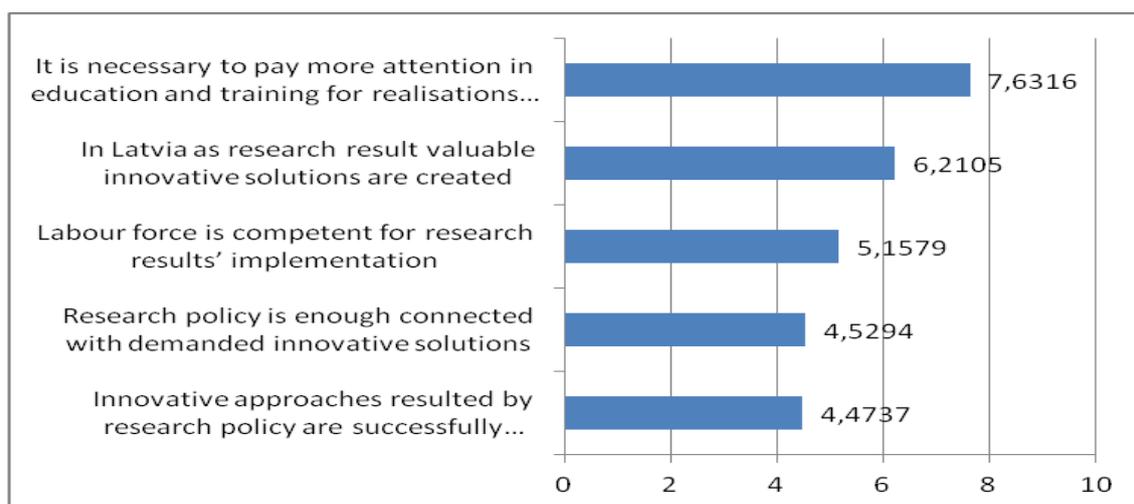


Figure 1. Average evaluations of experts on innovation issues in Latvia in 2012

Source: Expert survey on January – February, Evaluation scale 1 – 10, where 1- fully disagree, 10 – fully agree (n=19)

Table 2. Distribution of evaluations of the most problematic indicators on research and innovation policy in Latvia in 2012

Evaluations	In Latvia as research result valuable innovative solutions are created		Innovative approaches resulted by research policy are successfully implemented		Research policy is enough connected with demanded innovative solutions	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
Valid	1	0	0	0	1	5,3
	2	5,3	1	5,3	1	5,3
	3	5,3	4	21,1	2	10,5
	4	0	6	31,6	2	10,5
	5	26,3	2	10,5	3	15,8
	6	10,5	5	26,3	2	10,5
	7	26,3	1	5,3	1	5,3
	8	21,1	0	0	1	5,3
	9	5,3	0	0	2	10,5
Missing	0	0	0	0	4	210,5
Total	19	100,0	19	100,0	19	100,0

Source: Expert survey on January – February, Evaluation scale 1 – 10, where 1- fully disagree, 10 – fully agree (n=19)

The Branch expert councils – a new key stakeholder

Given the radically new situation in the world economy where the traditional approaches start showing overall signs of failure in producing the desired results, and given the fact that the traditional mechanisms in the training of the labour forces are increasingly recognised as inadequate to address the new labour market challenges, by our research we decided to study the possibly new solutions for addressing the problem of the training of the modern labour force. Our intention was to study and analyse the current situation and tendencies as they are from the perspective of the Latvian key stakeholders in research, education and employment. By this research we intended also to do the initial testing of our ideas and assumptions regarding a more intensive introduction of the issue of innovation into the vocational training system, since currently the traditional emphasis regarding innovation has been mainly on the field of higher education and research systems.

What we are potentially aiming at studying in our subsequent future research is – whether by changed institutional approaches and mechanisms a greater cohesion between the higher education and research system and the vocational training system could be reached (and if it is needed at all) – in order to train a more qualified labour force at all levels – capable of introducing innovation. According to our assumptions – without an increased emphasis and attention towards the vocational training system, the gap between innovative solutions generated by research and development and the implementation of this innovation into practice cannot be bridged successfully.

Without going deep into the issue of identifying relevant novel institutional mechanisms in Latvia, we would like to mention one of them – the twelve Branch Expert Councils (BECs), established in 2011, dealing with the restructuring of the national qualification system. However, an important reason for our interest in BECs is the relatively novel approach (in Latvian context) as to their composition and the comparatively fresh approach in relation to vocational and higher education qualifications applied within BECs⁶. As the aim and scope of the present paper does not allow to present our in-depth research on BECs and their role regarding the training of innovation capable labour forces, still it was important to refer to them, in order to indicate the role of these novel institutional mechanisms for our overall research. In our opinion, the study of the currently prevailing opinions of the relevant key stakeholders in relation to the existing institutional mechanisms and the possibility of new approaches towards the training of modern labour force and in implementing innovation must be carried out in the context of identified new tendencies in policy developments. As to our preliminary research, our assumption is that the BECs may play an important role in the training of innovation capable labour force in Latvia and are, for this reason, interesting as a case study to be presented in our subsequent research publications.

Conclusions

As a result of the research, the following conclusions have been drawn: the traditional approaches (institutional mechanisms) are firm structures that, on the one hand, can secure the stability of the given system, and on the other hand, prevent it from further development. In the new situation in the labour market the change of attitudes is of utmost importance for promoting new developments. New institutional mechanisms may be necessary for a more successful implementation of innovative approaches, and further academic research is needed especially on the impact of the innovative approaches on the training of a skilled workforce. More specifically regarding our empirical study – the very approach and the formulation of the survey questions with implicitly challenging aspects (e.g. the suggestions on the potential need for shifting the focus of innovative approaches to the vocational education system with respective institutional mechanisms) has provided a wealth of information for a continued research. The range and the polarity of answers, as well as the included ideas and comments will serve as a base for next stages in our research, as well as for preparation of real and research based suggestions for policy makers.

⁶ Although much emphasis in the BECs work is being laid on the analysis of the needed labour force as part of the vocational training system, there is a certain link also with the training of the more qualified labour force within the higher education system. As traditionally in Latvia the vocational education systems and the higher education and research systems have been functioning relatively separately, also the networks of social partners to a great extent have been functioning respectively – the vocational education system and the higher education system have their own expert boards and councils, and we can speak of relatively autonomous systems in this respect.

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