



## **POLICY NOTE OF THE WORKING PAPER 5.5**

### **CULTURE AS A POSSIBLE FACTOR OF INNOVATION: EVIDENCE FROM THE EUROPEAN UNION AND NEIGHBOURING COUNTRIES**

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#### **OBJECTIVE**

The objective of this report is to examine the effect of different cultural dimensions on innovation performance covering as much EU-countries and neighbouring countries as possible. It is commonly accepted that innovations play an important role in economic development and growth. In forming the innovative milieu, country's societal culture, i.e. shared values, beliefs, and behaviours play an important role. Although geographically close to each-other, the countries in European Union (EU) and its neighbouring countries differ significantly from each-other according to cultural background and environment. Thus, the innovation performance in these countries may also depend on these factors and it can be assumed that part of the differences in the innovative activity and innovation outcomes can be explained by the cultural differences. The analysis covers all 27 EU countries and 20 neighbouring countries: Norway, Iceland, Switzerland, Albania, Bosnia-Herzegovina, Croatia, Macedonia, Montenegro, Serbia, Moldova, Belarus, Russia, Ukraine, Armenia, Azerbaijan, Georgia, Turkey, Egypt, Jordan, and Morocco.

#### **SCIENTIFIC METHOD**

To describe societal culture, Hofstede's original concept of four cultural dimensions (power distance, uncertainty avoidance, masculinity-femininity, and individualism-collectivism) was used. Data from the latest waves of the European Values Study and the World Values Survey was used to describe culture. From initial indicators latent factors were composed with the help of confirmatory factor analysis. Correlation and regression analysis were used in order to explore the possible influence of four cultural dimensions on innovation. Then, graphical and cluster analysis was used to investigate further the countries' innovation performance and the possible cultural explanations. Last, the indicator of the support of culture for innovation was calculated in order to describe the combined effect of all four cultural dimensions.

## POLICY VALUE

The results indicated that all four cultural dimensions have significant influence on innovation. Uncertainty avoidance and masculinity appeared to have strong negative relationship with all innovation indicators used. Power distance that was also negatively related to innovation seemed to be more related to the inputs and less to the outputs of innovation while individualism turned out to be positively related to innovation and to be more related with the outputs of innovation. It was also found that countries group differently according to different cultural dimensions, but different cultural dimensions often seem to balance each-other: countries may have different combinations cultural dimensions, but still perform equally well in innovating. Hence, the final innovation performance may develop on the basis of the combined effect of four cultural dimensions. The indicator of the support of culture for innovation can be calculated as an average of the indicators of four cultural dimensions, incorporating the indicator of individualism with a plus sign and the indicators of power distance, uncertainty avoidance and masculinity with minus signs. The calculated indicator appeared to explain quite well the differences in the innovation performance in different countries.

Regarding policy, innovation outputs are undoubtedly highly related to innovation inputs, such as R&D, but innovation processes are also strongly determined by culture. At that, different cultural dimensions have to be taken into account. The final innovation performance is influenced by different cultural dimensions that may or may not balance each-other in a particular country. In countries, where innovation performance appeared to be the best (mainly EU countries, except Iceland, Norway and Switzerland), the cultural background summarily seems to be supporting for innovation. Accordingly, in the countries with poorer innovation performance (most of the EU-neighbouring countries), the culture appears to be less supporting for innovation. It is hard to give any policy recommendations here, as to change culture is a very complicated or possibly even impossible task. However, if this could be possible at least at some extent, for example, by promoting certain beliefs and attitudes, the possible policy should be focussed on those cultural dimensions that need to be changed in a particular country. As in different countries different cultural dimensions may hinder innovation, the thorough investigation of what dimension(s) would be the first priority is of great importance.