

In The Name Of Allah

**Evaluation of Innovation Survey
Systems and Providing a Framework for
Innovation Survey in Iran**

By:

*Seyed H. Tabatabaeian, university of Allameh,
taba@ma-atu.ir*

Mahdi Pakzad

- This article deals with importance of the survey of research and scientific activities and the existing mechanisms in this regard, and at the same time, provides a framework for innovation, survey at national level (for Iran)

- . The first part of the article is a review of the literature of technological change measurement. In this part, theoretical principles of technological changes are discussed.

- In the second part of the present article, an appropriate framework for innovation survey at national level is proposed through the use of field research

- Finally, considering the results of the field research, we offer appropriate and possible indicators for innovation survey at national level

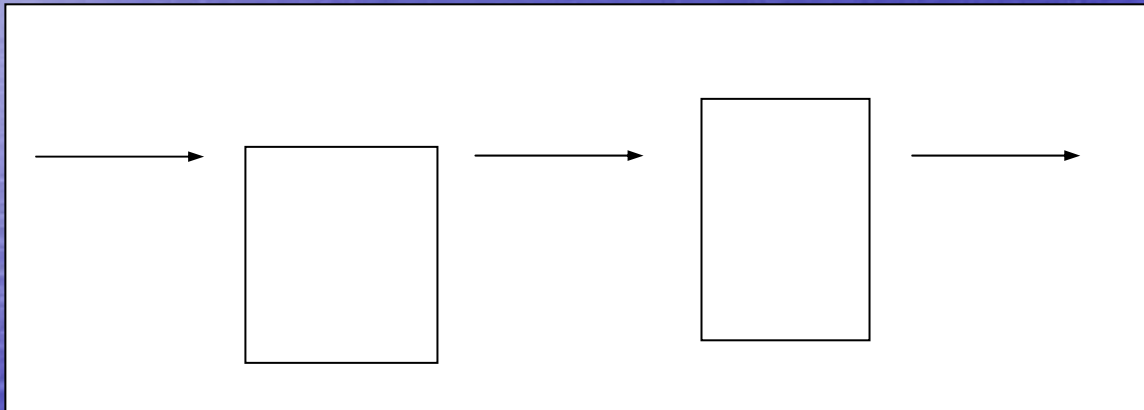
Linear Approach

- More and more investment in research and development is considered as the main input for linear viewpoints. In other words, there is a direct relation between input and output of a process, and any change in its input would affect the output
- Frascati manual

Evolutionary Approach

- there is no direct relationship between input and output of a process; rather a collection of various factors, such as universities, public and private institutes, help us create new innovations. Therefore, we pointed to the evolutionary approach as a mechanism for dealing with all aspects of innovation survey
- (Oslo manual).

A Simple Representation of Innovation Process. [Balzat 2002]

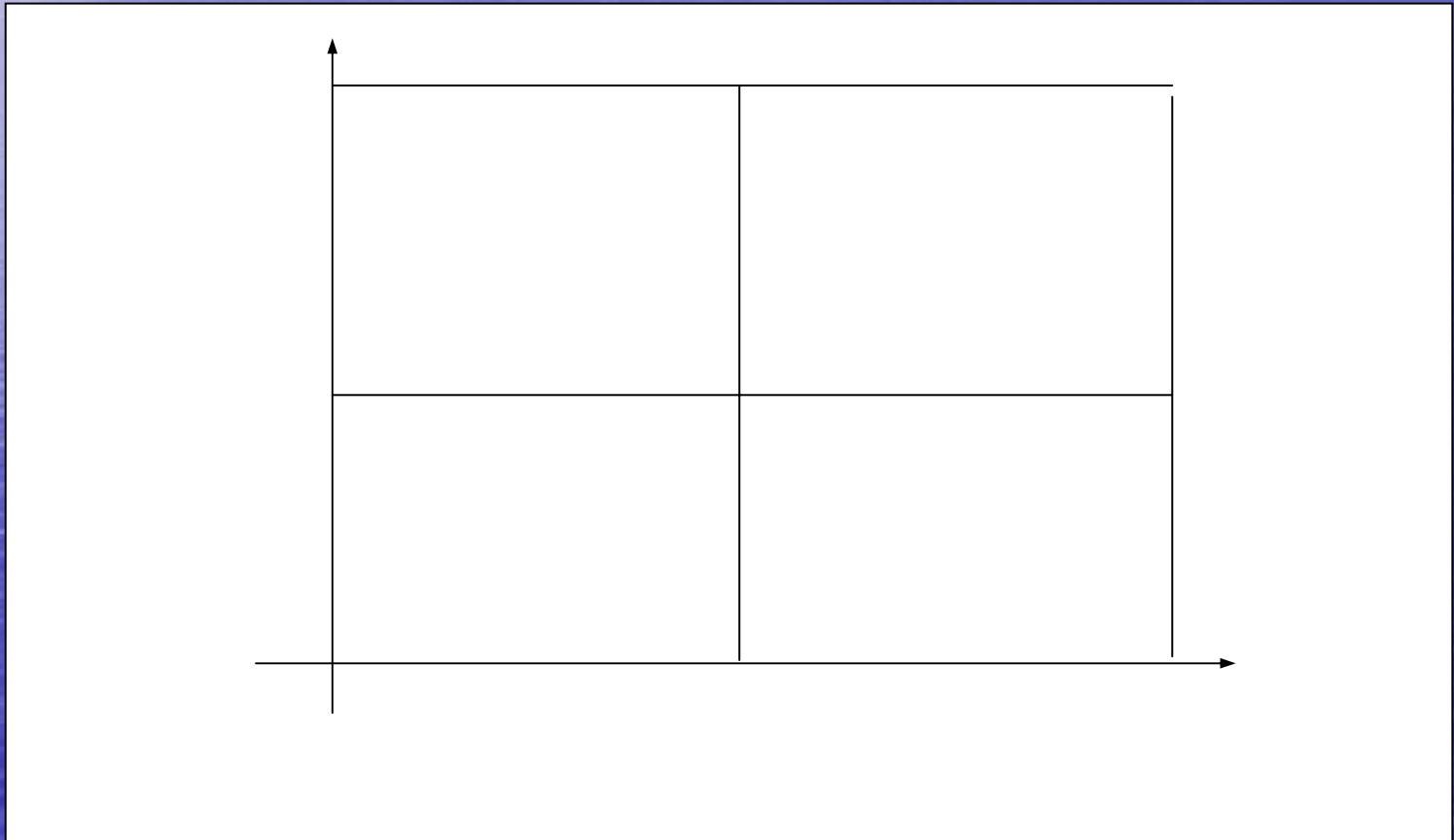


Performance Criteria of Technological system [Carlsson et al; 2002]

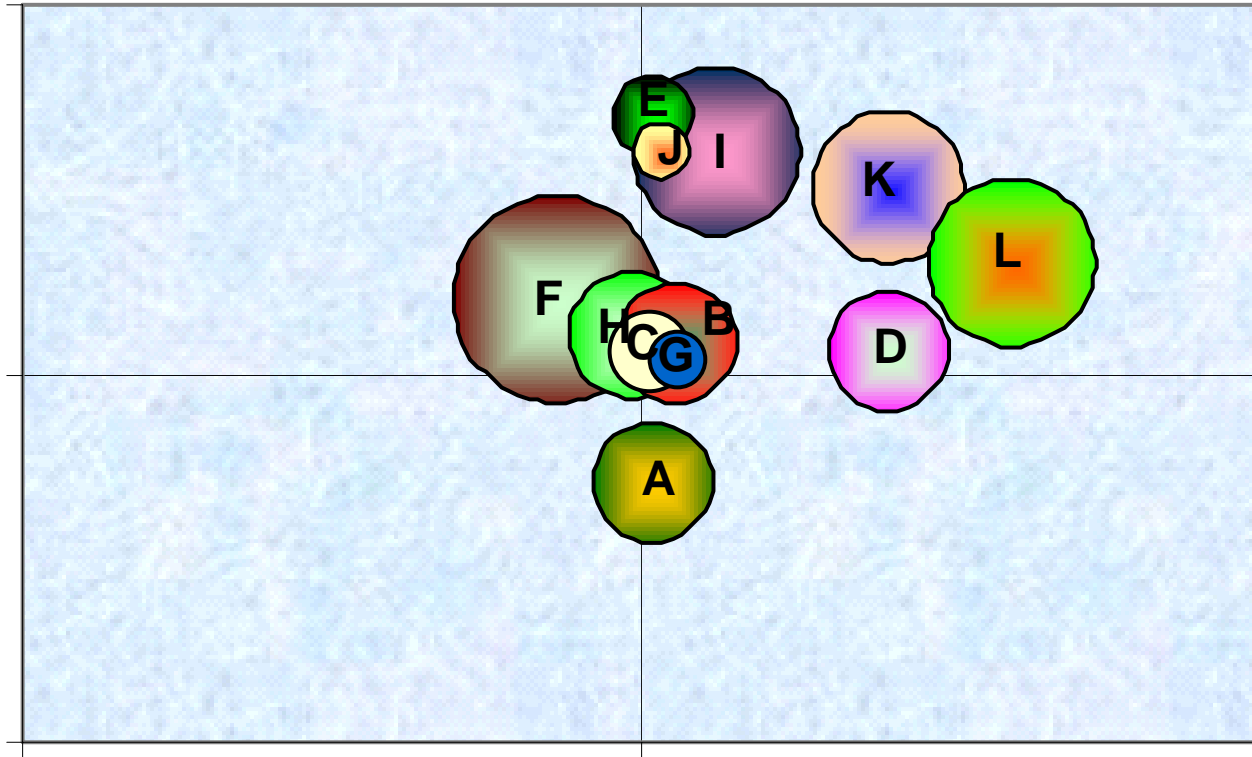
Indicators of the creation of knowledge	Indicators of expansion of knowledge	Indicators of application of knowledge
<ul style="list-style-type: none">* Number of patents* Number of engineers and scientists* Mobility of experts* Technological intensity	<ul style="list-style-type: none">* Number of colleagues* Time intervals for different phases of innovation development* Legal acceptance	<ul style="list-style-type: none">* Employment* Sale* Growth* Financial assets

The Matrix of direct Approach Classification

[Cantner, Pyka; 2001]



Classification of Innovative Activities of Iran's Main Research



Code	Research Center	
A	Institute for Studies in Theoretical Physics and Mathematics (IPM)	<u>Ministry of Science, Research and Technology</u>
B	National Institute for Genetic Engineering and Biotechnology (NIGEB)	<u>Ministry of Science, Research and Technology</u>
C	<u>International Institute of earthquake Engineering and seismology</u>	<u>Ministry of Science, Research and Technology</u>
D	Material and Energy Research Centre (MERC)	<u>Ministry of Science, Research and Technology</u>
E	Iran Research Organization in science and Technology(IROST)	<u>Ministry of Science, Research and Technology</u>
F	Chemistry and Chemical Engineering Research Center of Iran (CCERCI)	<u>Ministry of Science, Research and Technology</u>
G	Iran Polymer and Petrochemical Institute (IPPI)	<u>Ministry of Science, Research and Technology</u>
H	Iranian National Center for Oceanography (INCO)	<u>Ministry of Science, Research and Technology</u>
I	Research Institute of Petroleum Industry (RIPI)	<u>Ministry of Petroleum</u>
J	Iran Telecommunication Research Center (ITRC)	Ministry of Communication and Information Technology
K	Razi research institute of vaccine	Ministry Of <u>Agriculture-Jihad</u>
L	Pasteur Institute of Iran	<u>Ministry Of Health and Medical Education</u>

Determining the status of Innovative Activities in the Iran

- Considering figure and descriptions provided for direct approach, it could be concluded that research and innovative policies in the country are mostly mission-oriented. These policies are moving toward fields and activities that have little distance from the market

Criticism linear approach

- despite the fact that many countries carry out R&D activities, only limited number of these countries pays attention to systematic development and commercialization of new technologies.

The European Innovation Scoreboard

- considering the potentials of each of these approaches, we decided to select an appropriate approach (The European Innovation Scoreboard) as the basic framework. Never the less, this approach was mostly based on the economic conditions and requirements of European countries. Therefore, we decided to turn this framework into an indigenous one.

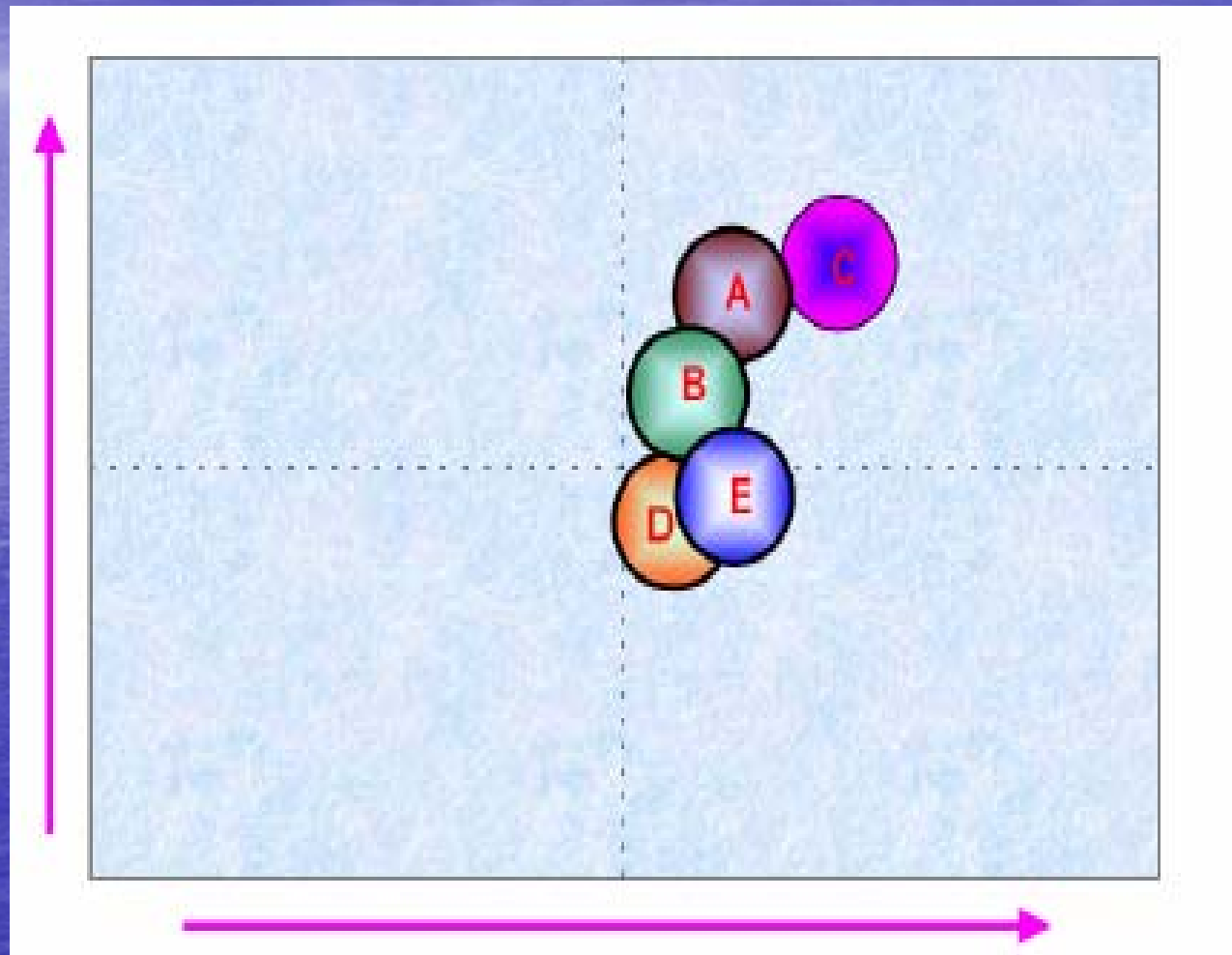
- We found out that research and innovation policy of the country is mission-oriented and moving towards domains and activities that have little distance from market. In the next phase, we prepared two questionnaires and distributed them among related authorities in order to identify suitable indicators for innovation survey at national level at the same time find out feasibility of indicators.

- The European Innovation survey has been defined according to Oslo manual and most developing countries consider it as the basis of innovation survey; therefore, we should also adopt this approach as the basis, in order to be able to compare national-level innovation survey with that of the other countries

- . At the same time, considering the outcomes of desirability - feasibility matrixes, we should take advantage of the following indicators

Desirability – Feasibility Matrix

feasibility



Desirability

Selected Indicators

- we should take advantage of the following indicators:
- **Domain of Human Resources:**
- * Total employed personnel in R&D (age-group percentage 20-29)
- * New S & E graduates (age-group percentage 20-29);
- * People with third level education (age-group percentage 25-64);
- **Domain of Creating new knowledge:**
- * R&D expenditure of the public sector (as a percentage of GDP);
- * Percentage of R & D in universities;
- * Number of registered innovation (per one million people);
- * Number of published articles in international journals.
- **Domain of Transmission and Application of new knowledge:**
- * Companies engaged in collective innovation;
- * Application of the registered innovation in developed technology (per one million people).
- **Domain of Innovation finance, output and markets:**
- * Percentage of the obtained value-added in developed technology;
- * The market value-added in R & D;
- * New products for the market (as a percentage of the sale of the company).

One Opinion

Asian Innovation Scoreboard

Thank You