



# Intellectual Capital for Communities in the Knowledge Economy Nations, Regions, Cities and Emerging Communities



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*Promoting knowledge and learning for a better world*

# On Measuring Regional Knowledge: an Italian perspective

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- ✓ **Research focus**
- ✓ **Hypothesis: understanding the role of IC in value creation**
- ✓ **RICI: benchmarking IC of Italian regions**
- ✓ **Discussion of empirical results**
- ✓ **Managerial and policy implications**
- ✓ **Final remarks**



In the last decades we have been investigating:

*The role and relevance of knowledge resources  
for organisation systems competitiveness*

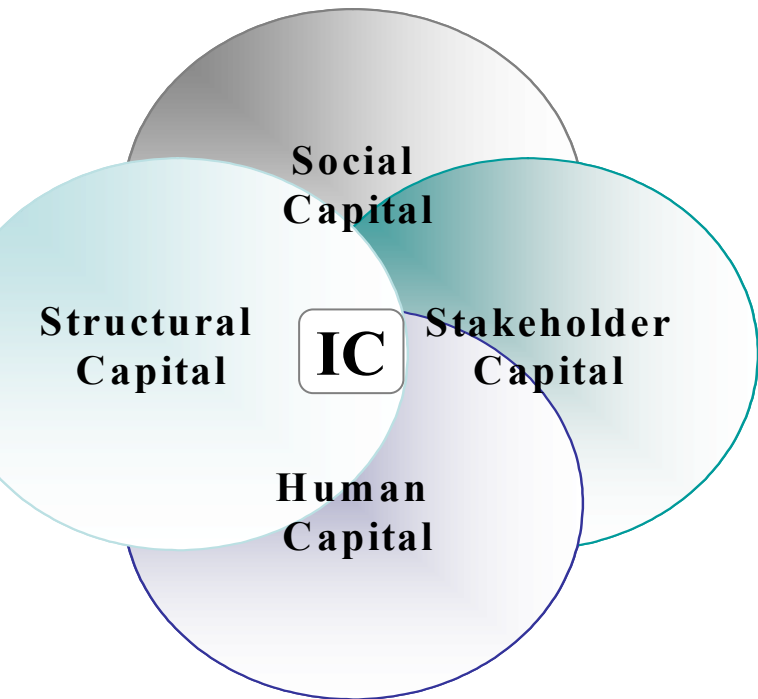
Focus

**Understandings the links between IC/KAs and  
organisation systems' value creation dynamics**

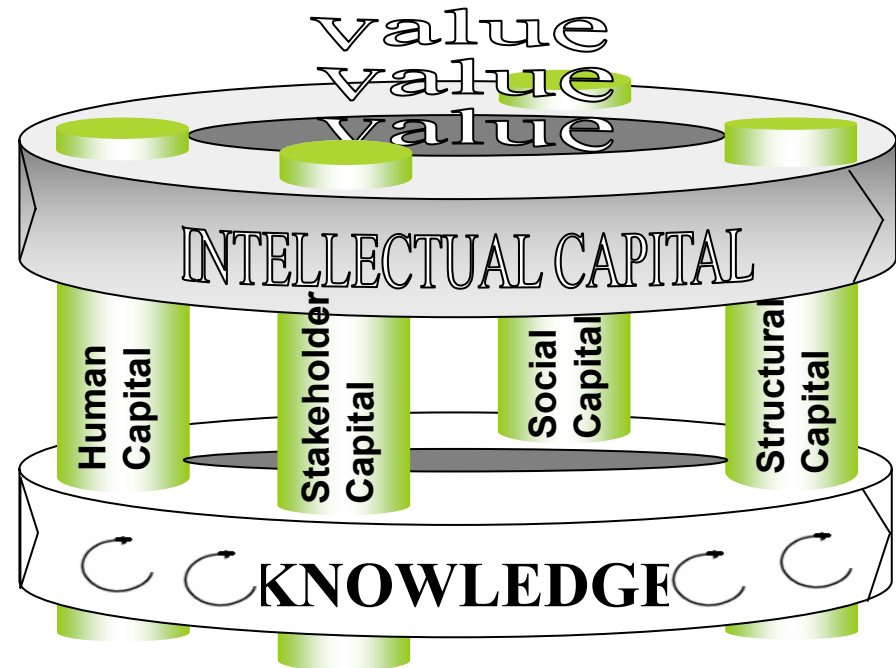
# Understanding knowledge resources: IC and KAs



## Key Concept Pillars of Intellectual Capital



## Intellectual Capital: an umbrella concept



# Understanding knowledge resources: IC and KAs

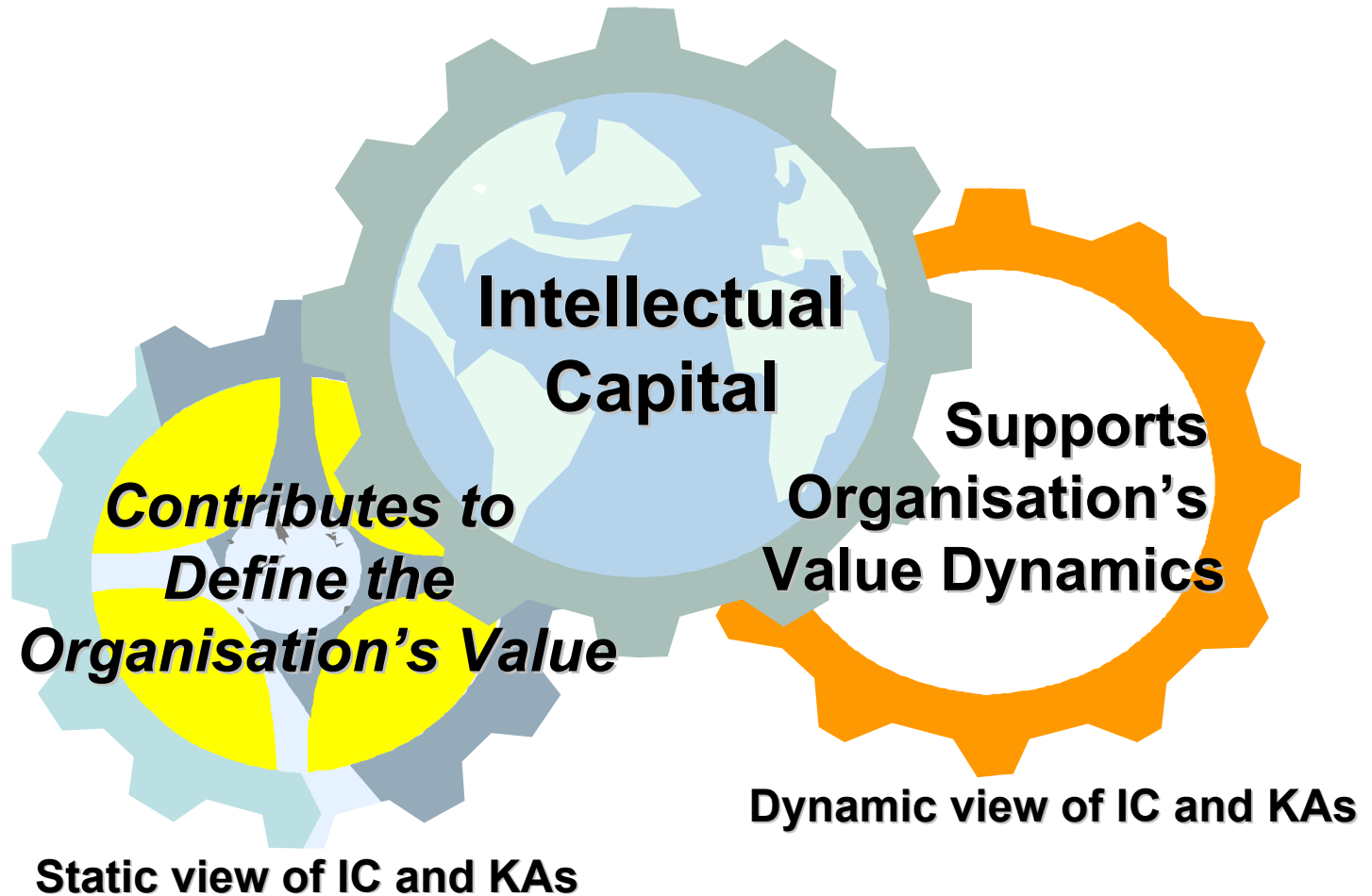


## Integrating the Resource based-view, Knowledge based-view, and Competence based-view

The overall KAs owned by an organization system build up the IC.

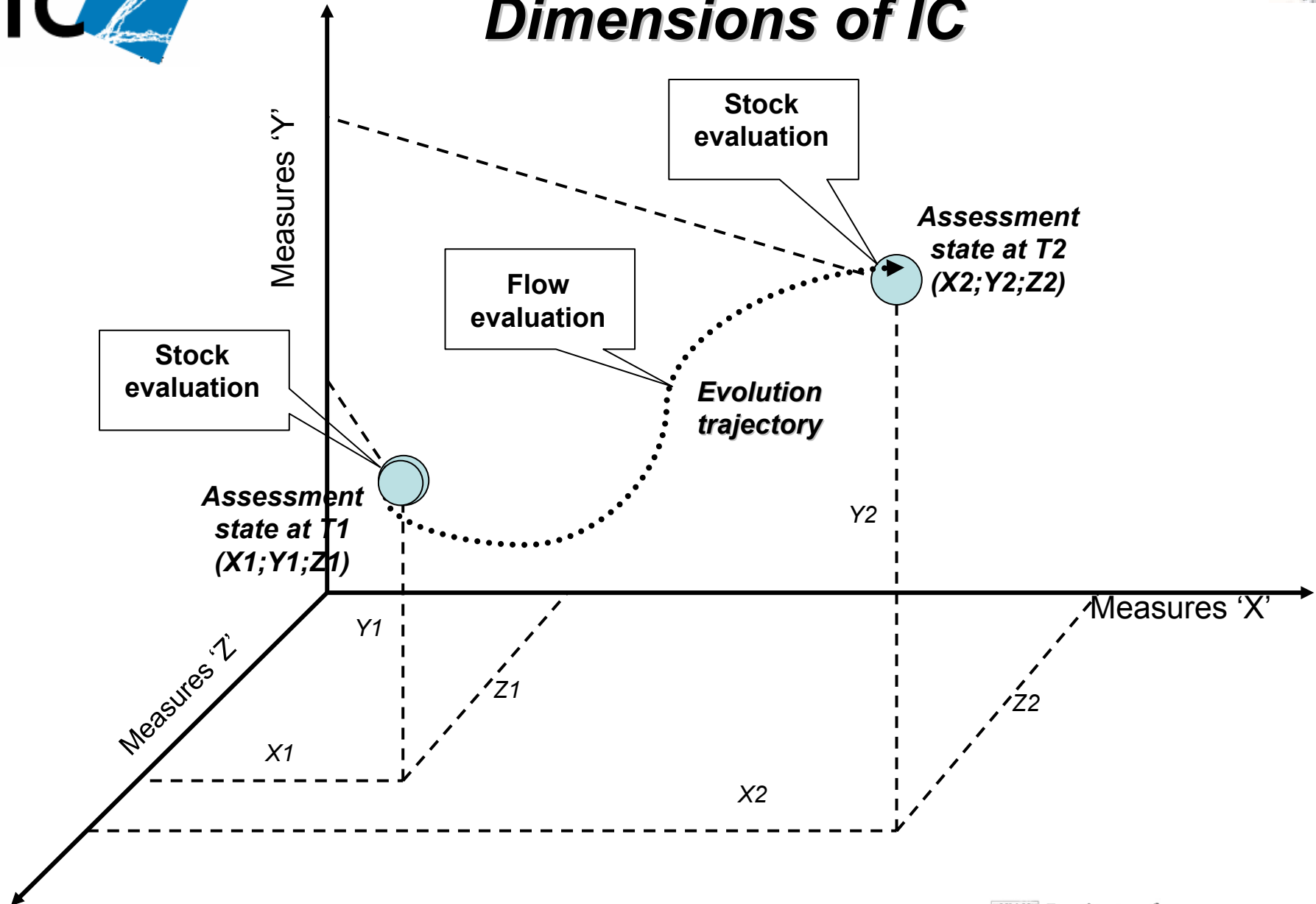
***“ Intellectual Capital is the group of knowledge assets that are attributed to an organization system and most significantly drive organization value creation mechanisms for targeted key stakeholders “***

# Intellectual Capital and Company's Value Creation





# Understanding the Static and Dynamic Dimensions of IC







# Exploring the links between IC and regional growth



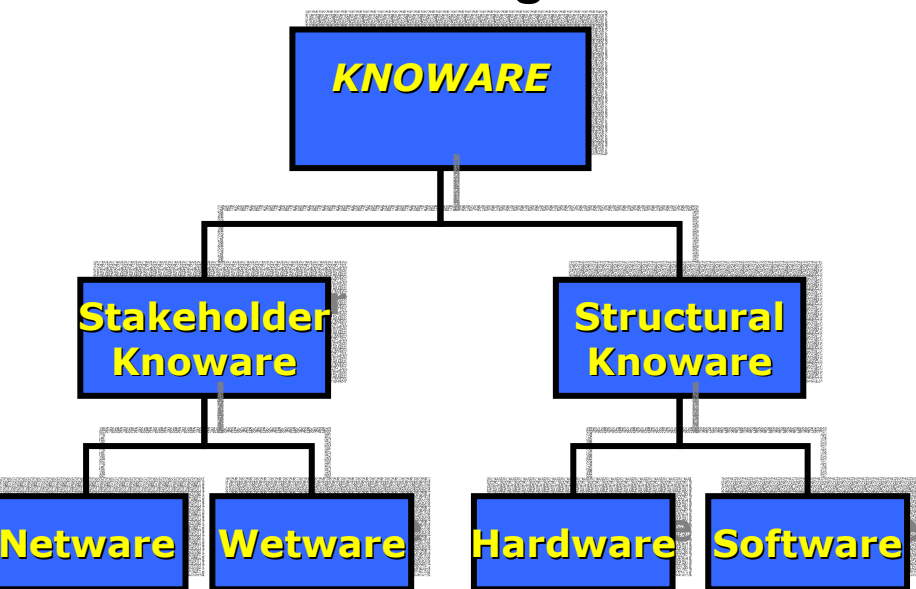
## RICI as a benchmarking index

- Assessing and benchmarking the relative ownership of **Intellectual Capital** of Regions by constructing a single index – the Regional Intellectual Capital Index (RICI) – on the base of the adoption of secondary sources
- A static understanding of the value related to the knowledge assets of an organization system

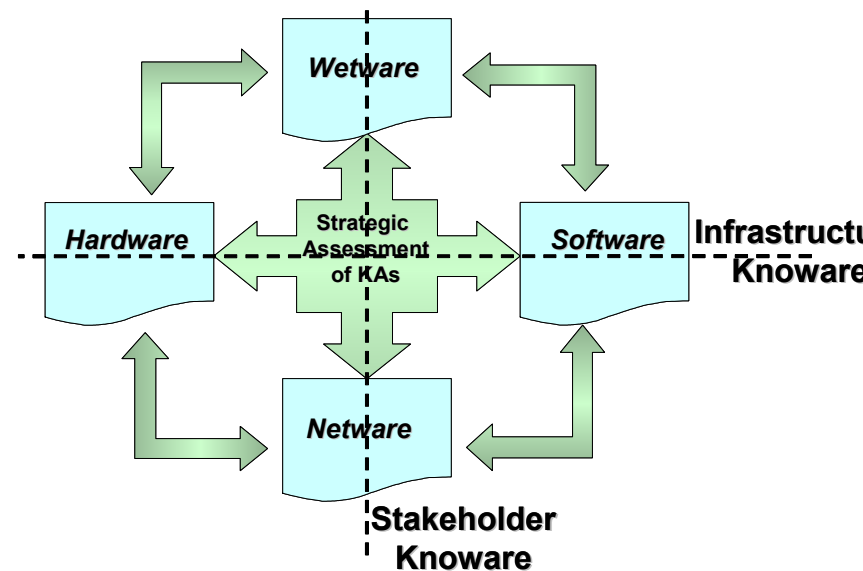
## Linking IC to regional value creation

Its definition is based on the implementation of the **Knoware Tree** as a framework for the identification, classification and assessment IC components.

## Knoware Tree: Identification, classification, analysis and understanding of KAs



## Defining indicators



## The Regional Intellectual Capital Index

$$RICI = (I\text{ wet} + I\text{ net} + I\text{ hard} + I\text{ soft}) / 4$$

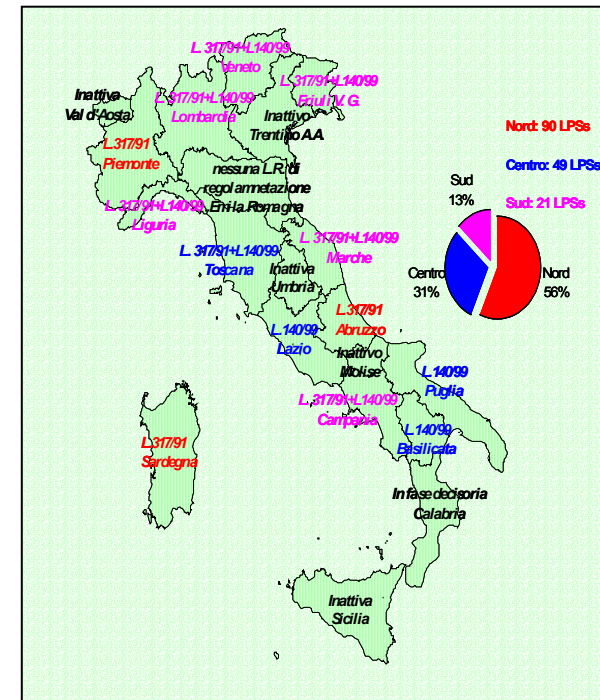
### The empirical research: data set

Sample: The 20 Italian Regions;

Source of data:

Adoption of the official data provided by ISTAT as source to define proxy indicators for the benchmarking and use of IC by the Italian Regions

Data range: Data referred to years 2001-2003.



## *The empirical research: reliability and significance of the indicators and statistical elaboration*

- ✓ **Process of normalization of the data**
- ✓ **Test *F* about the global significance of the data**
- ✓ **Test of *Durbin-Watson* about the local significance of the data**
- ✓ **Multicolinearity matrix and evaluation of the heterogeneity of the data**
- ✓ **Calculation and comparison of *F* statistic and *F* critical at 95% confidence**
- ✓ **Definition of the Null Hypothesis**
- ✓ **Calculation of the synthetic values of the 4 indices of the Knoware Tree**
- ✓ **Calculation of the global index RICl**

## RICI year 2001

REGIONS	I(WET)	I(NET)	I(HARD)	I(SOFT)	RICI
PIEMONTE	0,4779	0,5503	0,3715	0,4504	<b>0,463</b>
VALLE D'AOSTA	0,4145	0,3727	0,4820	0,4410	<b>0,428</b>
LOMBARDIA	0,5612	0,7023	0,5059	0,5443	<b>0,578</b>
TRENTINO A.A.	0,4848	0,4742	0,4609	0,5913	<b>0,503</b>
VENETO	0,4725	0,5477	0,4446	0,5236	<b>0,497</b>
FRIULI V.G.	0,4527	0,4566	0,4791	0,4272	<b>0,454</b>
LIGURIA	0,4362	0,3195	0,4758	0,5266	<b>0,440</b>
EMILIA ROMAGNA	0,5828	0,5090	0,4794	0,5495	<b>0,30</b>
TOSCANA	0,4499	0,5228	0,3651	0,4812	<b>0,455</b>
UMBRIA	0,4391	0,4306	0,3006	0,3296	<b>0,375</b>
MARCHE	0,3819	0,4063	0,3213	0,3831	<b>0,373</b>
LAZIO	0,4446	0,4537	0,4304	0,5088	<b>0,459</b>
ABRUZZO	0,3470	0,3166	0,2574	0,2725	<b>0,298</b>
MOLISE	0,2756	0,1845	0,2688	0,1664	<b>0,224</b>
CAMPANIA	0,2734	0,3403	0,2126	0,3589	<b>0,296</b>
PUGLIA	0,3016	0,2699	0,1913	0,2362	<b>0,250</b>
BASILICATA	0,2708	0,2912	0,1745	0,2011	<b>0,234</b>
CALABRIA	0,2086	0,2711	0,1492	0,1877	<b>0,204</b>
SICILIA	0,1970	0,2228	0,2736	0,2844	<b>0,246</b>
SARDEGNA	0,2031	0,3417	0,3738	0,2940	<b>0,303</b>

## RICI year 2002

REGIONS	I(WET)	I(NET)	I(HARD)	I(SOFT)	RICI
PIEMONTE	0,5130	0,4439	0,3411	0,4592	<b>0,439</b>
VALLE D'AOSTA	0,4571	0,4681	0,4680	0,4895	<b>0,471</b>
LOMBARDIA	0,5759	0,5049	0,5038	0,5497	<b>0,534</b>
TRENTINO A.A.	0,5186	0,5386	0,5395	0,5741	<b>0,543</b>
VENETO	0,5236	0,5219	0,4099	0,5725	<b>0,507</b>
FRIULI V.G.	0,5098	0,4154	0,4474	0,4432	<b>0,454</b>
LIGURIA	0,4254	0,3242	0,4454	0,5266	<b>0,429</b>
EMILIA ROMAGNA	0,6408	0,4509	0,4424	0,5114	<b>0,511</b>
TOSCANA	0,4757	0,4864	0,3516	0,5133	<b>0,457</b>
UMBRIA	0,4142	0,3464	0,2723	0,3197	<b>0,338</b>
MARCHE	0,4137	0,3749	0,2630	0,3831	<b>0,361</b>
LAZIO	0,5289	0,4204	0,4270	0,5323	<b>0,477</b>
ABRUZZO	0,3714	0,2289	0,2219	0,2852	<b>0,277</b>
MOLISE	0,2166	0,1866	0,2234	0,1550	<b>0,195</b>
CAMPANIA	0,2357	0,2693	0,1329	0,3494	<b>0,247</b>
PUGLIA	0,2220	0,1873	0,1889	0,2767	<b>0,219</b>
BASILICATA	0,2632	0,2632	0,1579	0,2226	<b>0,227</b>
CALABRIA	0,1815	0,2093	0,1597	0,2095	<b>0,190</b>
SICILIA	0,1754	0,1973	0,1921	0,2456	<b>0,203</b>
SARDEGNA	0,2869	0,2774	0,3544	0,2940	<b>0,303</b>

## RICI year 2003

REGIONS	I(WET)	I(NET)	I(HARD)	I(SOFT)	RICI
PIEMONTE	0,4504	0,4657	0,3215	0,4548	<b>0,444</b>
VALLE D'AOSTA	0,4410	0,4148	0,4586	0,4963	<b>0,452</b>
LOMBARDIA	0,5443	0,6209	0,4897	0,6091	<b>0,584</b>
TRENTINO A.A.	0,5913	0,3712	0,5259	0,5741	<b>0,498</b>
VENETO	0,5236	0,4379	0,3894	0,5725	<b>0,494</b>
FRIULI V.G.	0,4272	0,3234	0,4236	0,4313	<b>0,425</b>
LIGURIA	0,5266	0,3025	0,4486	0,4709	<b>0,429</b>
EMILIA ROMAGNA	0,5495	0,4200	0,4462	0,5398	<b>0,518</b>
TOSCANA	0,4812	0,4084	0,3533	0,5514	<b>0,461</b>
UMBRIA	0,3296	0,3315	0,2603	0,3142	<b>0,361</b>
MARCHE	0,3831	0,3871	0,2516	0,3986	<b>0,375</b>
LAZIO	0,5088	0,4133	0,4270	0,5469	<b>0,487</b>
ABRUZZO	0,2725	0,2539	0,2520	0,3043	<b>0,317</b>
MOLISE	0,1664	0,1822	0,2234	0,1439	<b>0,224</b>
CAMPANIA	0,3589	0,3379	0,1329	0,3887	<b>0,291</b>
PUGLIA	0,2362	0,1742	0,1826	0,2618	<b>0,213</b>
BASILICATA	0,2011	0,2910	0,1645	0,2386	<b>0,235</b>
CALABRIA	0,1877	0,2518	0,1597	0,1798	<b>0,206</b>
SICILIA	0,2844	0,1979	0,2066	0,2318	<b>0,215</b>
SARDEGNA	0,2940	0,2579	0,1087	0,2792	<b>0,237</b>

✓ **Relevant gap among Italian Regions**

**Lombardia, Trentino, Emilia-Romagna, Lazio and Veneto  
*top ranks***

**Molise, Calabria, Sicilia, Puglia and Basilicata *bottom ranks***

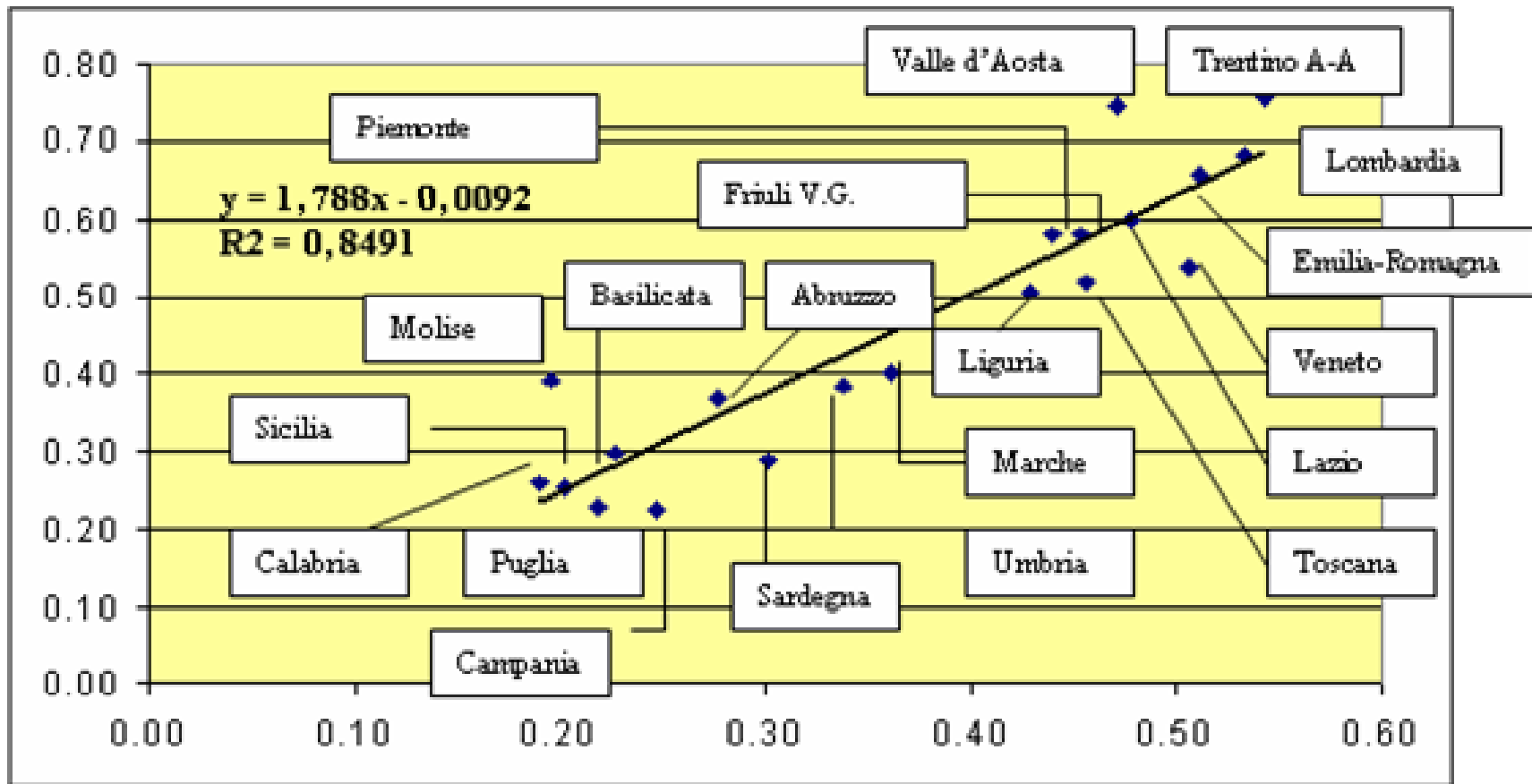
✓ **Trend towards the “urbanization” of the knowledge**

**It seems that some Regions are exploiting the fact that knowledge mainly takes place in cities and large urban areas more able to leverage the quality, the quantity and the diversity of the knowledge catalysts (universities, education institutes and R&D activities as well as community participation and civic identity )**



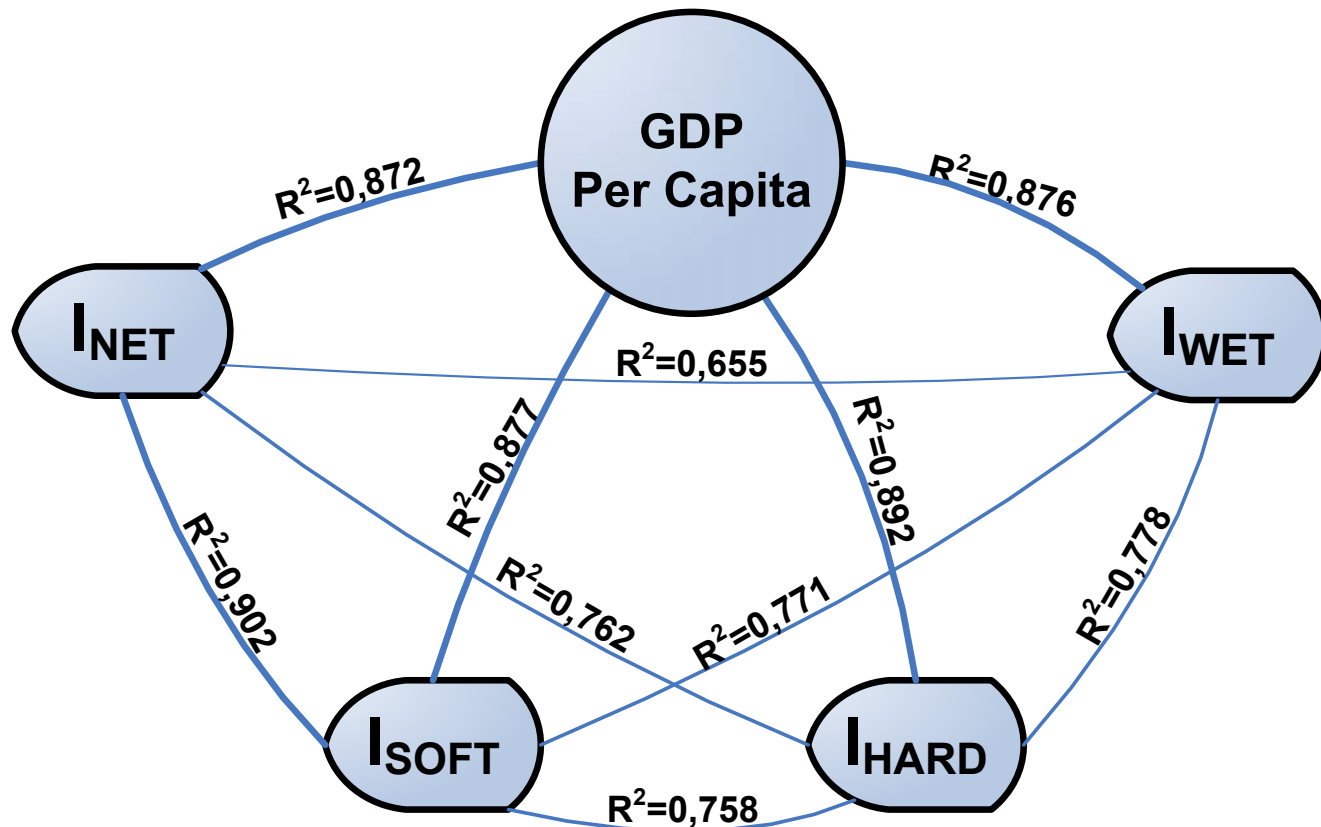


# Empirical evidences about relationships between IC ownership and use, economic development and value creation dynamics in multidimensional systems



*Relationship RIC-VCI years 2002*

# IC operates as a bundle of resources



- ✓ **Future research**
  - ✓ **Robust canonical analysis**
  - ✓ **Investigation of Local Production Systems – Italian Industrial districts**
  
- ✓ **Exploring the dynamics of KAs**
  
- ✓ **Investigation of the policies for supporting the assessment and development of IC which drives local growth and wealth creation**



# *Thank you*

*Contact details...*

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