

RESUMEN:

Se analiza la cooperación entre territorios españoles (fundamentalmente las islas Canarias y la Diputación de Barcelona) con Canelones, Uruguay, entre 2005 y 2010. Las fuentes de información refieren a entrevistas en profundidad, una encuesta a actores clave y documentación revisada. El objetivo es contribuir a la comprensión de las motivaciones y fundamentos de la cooperación entre estos territorios, para luego analizar las ventajas y oportunidades que presenta para promover procesos de desarrollo local y regional. El trabajo argumenta que el principal valor agregado de la cooperación territorial no se vincula con los apoyos en infraestructuras ni los montos monetarios recibidos, sino que radica en la generación de activos intangibles para el desarrollo. Por ejemplo, el aprendizaje conjunto, el intercambio de experiencias y la transferencia de conocimientos específicos sobre cómo actuar y responder ante desafíos similares.

Palabras clave: cooperación territorial internacional, desarrollo local, Canelones, Uruguay; territorios españoles.

ABSTRACT:

This paper analyzes the recent cooperation of Spanish territories (mainly the Canary Islands and Deputation of Barcelona) with Canelones, Uruguay from 2005 to 2010. The study uses information from in depth interviews, a survey to key actors, as well as bibliographical sources. The aim is to contribute to understand the motivations and foundations of cooperation between these territories, in order to analyze the advantages and opportunities of territorial cooperation to support processes of local and regional development. The paper argues that the most important contribution of territorial cooperation is not the support in physical infrastructure or the monetary amount of aid itself (funds), but refers to the generation of intangible assets for development. For instance, the joint learning resulting from the exchange of experience and the transfer of know-how and specific knowledge about dealing with similar challenges.

Keywords: international territorial cooperation, local development, Canelones, Uruguay; Spanish territories.

Cooperación territorial internacional y desarrollo local: el caso de Canelones (Uruguay) con los territorios españoles

International territorial cooperation and local development: the case of Canelones (Uruguay) with spanish territories

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A conceptual framework

It is first necessary to define what is meant by territorial cooperation. In general, the term most commonly used is decentralized cooperation. The European Commission defines decentralized cooperation as

part of its development cooperation policy signalled a commitment to broadening the range of people and organizations involved in cooperation, with a view to making full use of all the talents which might be harnessed for development, both in Europe and the partner countries. Decentralized cooperation can involve non-governmental organizations (NGOs), local government, associations (rural or urban, professional, etc.), cooperatives, companies and business interests¹ (for whom there are specific schemes), and trade unions ... in short, all the organizations that make up “civil society”, both in Europe and in the South, and are capable of contributing to the social and economic growth of developing countries (COM, 1996: 1).

The EU's definition of decentralized cooperation is wide. However, this term is used with different scope in different European countries. This can be seen, as is shown in Marteles Moreno (2010), when analyzing the three European countries that are pioneers in decentralized cooperation: Italy, France and Spain. In Italy there is generally a broad interpretation of decentralized cooperation, in line with the definition of the EU. Thus, besides the role of sub-national governments (local and regional), cooperation can also be promoted by other local actors, Italian or from the partner territories. Additionally, in this view, are also included initiatives promoted by national governments or international organizations on behalf of local governments such as the UNDP ART program or EU programs as URB-AL. But in Spain and France, according with Marteles Moreno (2010), there is a stricter interpretation on decentralized cooperation comprising only the type of cooperation led and promoted by sub-national governments; for

example, municipalities, cities, metropolitan areas, provinces, departments, regions. In this interpretation of decentralized cooperation, civil society also has an important role, but not as a leader or promoter of cooperation initiatives. So in these two countries this kind of cooperation is frequently called “official decentralized cooperation”.

This paper will use the term “international territorial cooperation” (ITC). So, ITC here refers to cooperative relations between sub-national governments in different countries. This could be accompanied by the participation of the civil society and private actors, but leadership in cooperative relationships, from this point of view, refers to local and regional governments.

Regarding the concept of local development, a term on which also there are different meanings, this paper assumes that the economic development of a territory (regions, towns, cities) refers to an endogenous process of growth involving a structural and qualitative change in the local economy that is not just explained from a functional view but rather from a territorial perspective, meaning the territory as a space for interaction between actors institutions, skills, knowledge and tradition (Rodríguez Miranda, 2006). Vázquez Barquero (1988) identifies three important dimensions in the local development process: i) economic, which refers to how local entrepreneurs use their ability to organize local production factors to be competitive in the markets; ii) sociocultural, involving values and institutions; iii) political and administrative, meaning how territorial policies create a favorable local economic environment and boost local development.

Thus, from the assumed approach, local development relates to the concept of endogenous development. As Garafoli (1995) said, endogenous development implies the capability to transform the socio-economic system, reacting to external challenges, promoting social learning and innovating at local level. Boisier (1993) argues that endogenous development is manifested in four planes that cross each other: political, economic, technological and cultural. In political level refers to the ability of the territory to take the relevant decisions concerning the development model. In economic level refers to have control over the production process and the reinvestment in the territory

of the surplus generated. In technological terms it is the internal capacity of an organized territory to generate its own impulse to change. Finally, in terms of culture the endogenous factor is understood by Boisier as a kind of socio-territorial matrix that generates identity and the necessary synergy with the others levels to generate structural change and development.

Within this framework on local development the ITC can be an appropriate instrument to promote territorial development. As Unceta *et al.* (2011) pointed out, for several decades the international system of cooperation was articulate around the role of national states and international institutions, which largely responds to a concept of cooperation based on the transfer of resources from rich countries to poor countries. Decentralized cooperation begins to question that logic, giving prominence to sub-national actors. The traditional system of international cooperation is characterized by a scheme where roles are determined by income level of each country, and donors and recipients can function in only one way according to that logic (Fitipaldi Freire, 2012). By contrast, the ITC assumes that each territory has its own resources and specific conditions to define the better way to be related with other territories to mutually reinforce development opportunities. As posed Enríquez and Ortega (2007), this implies a shift from the logic of donor and recipient to a vision of partners.

In ESPON-EUROREG (2012a) territorial cooperation is analyzed with especial focus in the EU; however, the approach is very useful to analyze ITC in general. Territorial cooperation could be seen linked to a process of “de-territorialisation” in which borders become permeable and weakened the nation state (Agnew, 1994). It could be said that the concept of the “container state” that enfolds most political, economic and social life has been questioned as a result of these developments (Taylor, 1994). On the other hand, the globalization and the perforation of national borders have led to a process of “re-territorialisation” (Ó Tuathail and Luke, 1994; Jessop, 2002). It means that territory remains an important determinant of political, economic and social issues and decision in people’s life; however, there is a shift from the state to other territorial scales such as the supranational, the sub-na-

tional and the transnational. In this context, ITC seems to be a relevant and appropriate tool to promote local and regional development.

As is also shown in ESPON-EUROREG (2012a), the EU has been one of the main bodies supporting territorial cooperation (TC). The main argument beside this approach is that regions benefit from the networking, cooperative links, learning opportunities and potential synergies that are an asset that is part of a region's territorial capital (Molle, 2007). However, the role of TC in regional development is not an easy issue to study. It is difficult even in EU, where statistics and information about intra-Europe territorial cooperation are much more available than in other international relationships. Thus, to study ITC between different territories in different countries located in different continents without information systems pre-established and standardized, is much more complicated. That is why to study cases in depth of ITC could be a good way to start with.

ITC (or decentralized cooperation) is still a minor part of international cooperation. In fact, The Paris Declaration on Development Aid Effectiveness (OECD/DAC, 2005) maintains a state-national vision of development cooperation. However, as Unceta *et al.* (2011) pointed out, at the summit held in Accra in 2008 (OECD/DAC, 2008) some issues were raised allowing opportunities for a deepening of decentralized cooperation (such as coordination of efforts, complementarily or the need for partnership opportunities for inclusive development). Anyway, ITC is still far from being consolidated.

From several studies, as ESPON-EUROREG (2012a), Unceta *et al.* (2011), Abraham Díaz (2008), Del Olmo *et al.* (2006), Godínez y Romero (2004), Hafteck (2003), Rhi-Sausi (2000), this paper identifies the following features to explain comparative advantages of ITC over other types of cooperation in order to promote local development.

- Less dependence on diplomatic issues as well as from geopolitical and commercial interests that usually prevail in relations between states.
- More probability to impact on local development processes. The sub-national administrations are assuming increasing

responsibilities and an active role in promoting development. This opens new possibilities for cooperation with local and regional impact. In turn, the ITC can develop forms of collaboration and partnership that are much more difficult to implement from the national level.

- Greater similarity between the problems, needs and initiatives in the territories that cooperate. Besides, similarity of scale and challenges allows better adapting the form of interventions and resources mobilized to the specific realities of each territory. This means more effective cooperation as a tool that promotes development projects, learning and capacity building.
- Ties through common history, culture and language. Usually, this is related to the historical processes of migration and population in the territories involved in the ITC. It is important in facilitating dialogue and initiatives.
- The ITC, by its own way of implementation, reinforces sub-national governments and local autonomy. Thus, it is a good tool to support decentralization processes and local development.
- Funding is also relevant but not the unique to consider. Of course, insufficient financial resources are an obstacle to cooperation. However, ITC can mobilize little monetary funds because cooperation's content can mainly be based on experience exchange, training and flows of information. That could mean a high value in human resources and intangible assets involved in cooperation but not necessarily in money.

Many of these mentioned advantages are related to the overcoming of a vision of cooperation focused on the transfer of monetary resources. Thus, the ITC is about building reciprocal and horizontal relations between local governments from different countries but that feel as peers with similar objectives, issues and challenges. Accordingly, most of the advantages of ITC refers to "qualitative impacts", *e.g.* through opportunities for exchange of experience and learning, which is a significant difference with other types of cooperation. However, sometimes it makes difficult to get measures on this qualitative impacts.

Another important aspect concerns on how these advantages can be realized. For this, local government administrations participating in cooperation should have a minimum framework in terms of development planning. As noted by Díaz Pérez (2010), a good example is the cooperation approach developed in Medellín (Antioquia, Colombia). In this case, the International Cooperation Network of Antioquia formulated a Strategic Agenda for International Cooperation in the framework of the Municipal Development Plan 2008-2011 “Solidarity and Competitive Medellín”. So, international cooperation is used as a tool to empower Medellín as a regionally and globally integrated city, contemplating regional development as a condition for local development, in articulating with an endogenous development strategy of the Department of Antioquia.

On the other hand, in ESPON-EUROREG (2012a) are mentioned as barriers to cooperation some legal and socio-economic background and geographical conditions (Church and Reid, 1999; Perkmann, 1999). The ITC may present problems if the sub-national administrations have legal limitations or if there are great discrepancies in development levels between the cooperating territories. Also, lack in communications and transport infrastructure could be problematic. Finally, although it was pointed out that territorial cooperation has an advantage in reducing dependence on national interests related to diplomatic, commercial or geopolitical aspects, it is not completely safe from reproducing the logic of bilateral cooperation of the states (Unceta *et al.*, 2011). Another risk in the ITC is the dispersion of efforts and an approach that favors excessive requests for some NGO’s or other private organizations, so as to weaken the role of local governments themselves in defining policy and the implementation of a development strategy for the territory. This risk decreases if sub-national governments become stronger and improve their planning. So the ITC should underpin these processes of strengthening local and regional governments.

Methodological approach and data sources

As noted in the abstract, this paper refers to a case study of ITC between Uruguay and Spanish territories, mainly with the Deputation of Barcelona and the Canary Islands. The article analyzes the recent cooperation from 2005 to 2010 mainly from information obtained by the author in depth interviews to a large number of relevant actors related to ITC on Canelones. Other important source is a survey from the recent research ESPON-EUROREG (2012b). Interviews and survey were made only to those directly related to the ITC. It means government agents and technicians, as well as experts, consultants and OSC related to local government in the implementation or management of the ITC.

The survey in ESPON-EUROREG (2012b) was administered electronically to a total of 27 respondents. It is important to note that this was the total number of potential persons identified as the universe of interviewees (it means the actors directly involve, as promoters or managers, in the ITC' projects identified between 2005-2010): 9 are area directors or coordinators in the Departmental Government (DG), 7 are DG's technicians, 6 are OSC and local actors linked to ITC process, and 5 are experts or consultants related to ITC projects. Although the questionnaire was administered via e-mail, there was a monitoring by telephone and personal assistance was even made available in many cases.

Taking account the information from the mentioned survey some interviews were selected to be made in depth with duration from an hour and a half to two hours. The final number of interviews was 18. There were no more potential candidates identified as critical to be included. In Annex, table A1 shows a list with more information about the interviewees.

Information was also obtained from the following materials and documents: Gobierno de Canarias (2011), Diputación de Barcelona (2011), AECID-AUCI (2010), ART-PNUD (2010), OPP (2010), UEC (2010), Comisión Honoraria del Patrimonio Departamental (2009), Intendencia de Canelones (2009), Barreto Messano (2008).

The case of study: Canelones and cooperation from Spanish territories

Canelones is one of 19 Departments in Uruguay located in the southern area of the country. It surrounds the Department of Montevideo and borders on the west with the Department of San José, on the north with Florida and on the east with Lavalleja and Maldonado.

Canelones has 16% of the population of Uruguay (is the second most populated Department, the first is Montevideo) in spite of the fact that Canelones represents only 2.6% of the total surface of the country. The southern and eastern coastal areas of Canelones are part of a metropolitan area in which the principle cities of the Department are heavily tied to Montevideo, the metropolis and country capital. The metropolitan feature of Canelones has been both the source of opportunities and of restrictions. It has made Canelones an attractive place to locate industries and services with important urban centers in the Uruguayan scale. On the other hand the proximity to Montevideo has promoted bedroom communities and a lack in identity. Thus, Canelones face the challenge of building its own unique identity in interaction with Montevideo but not in a total and negative dependence.

**Table 1: Basic data
on Canelones (census 2011)**

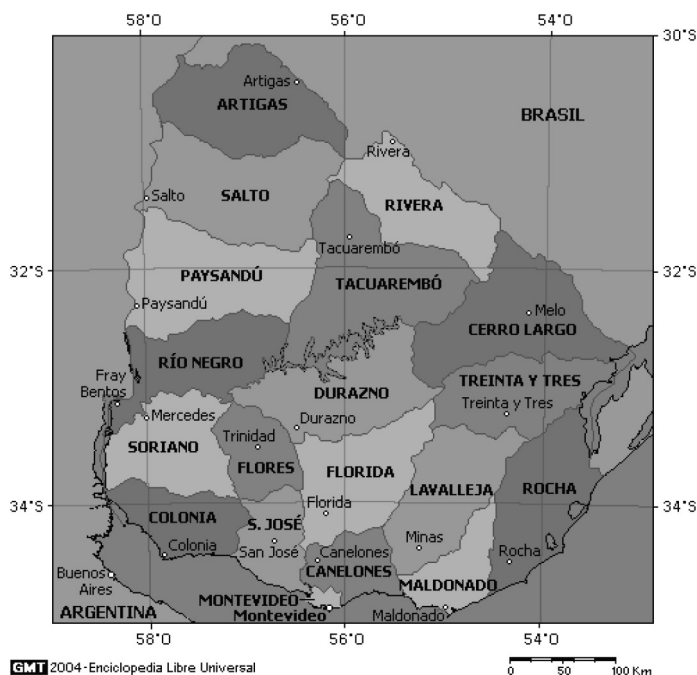
Territory	Population	% Rural population	% Women	Area in km2
Canelones	520,187	9.3	51.3	4,536
Montevideo	1,319,108	1.1	52.0	530
Rest of the country	1,447,019	7.8	50.1	169,950
Uruguay	3,286,314	5.3	53.4	175,016

Source: INE data.

We refer to the government as “Departmental Government” (DG), that is the second level of government in the country. However, the DG’s autonomy is much more limited than that of second-level gov-

ernments in other Latin American countries. There is no total fiscal autonomy. The most important taxes, fees and charges (*e.g.* IVA, income tax, charges for water, electricity and energy services) are administered and collected at the national level. Therefore, most of the DG's budget (an average of 30%, but in some of them it is more than 50%) is covered by revenues from the national government.

Map 1: Canelones in Uruguay



Source: <http://enciclopedia.us.es>

The main competences of the DG are in the areas of care of public spaces, maintenance of internal road systems, public lighting and other services to the population, and the regulation of cities and territorial zoning, in which is expended the major part of the budget. However, the DG's in Uruguay are increasingly assuming more responsibility, including economic development and employment. Often carrying out

policies defined and financed at the national level and sometimes on its own initiative (although with scarce resources).

In 2010, with the Law Number 18.567 of Political Decentralization and Citizen Participation, was created the third level of government: The Municipality. Municipalities. In this framework, 89 municipalities were defined in a sub-division of the country during the period of 2010-2015.¹ Although the municipalities appear to be a new level of government, the law establishes that they essentially depend on the DG. In fact, municipalities are not autonomous from DG, so the DG is the relevant actor in the ITC process. We study the cooperation until 2010, thus we don't consider the municipalities.

The next table shows in 2010 some indicators of Canelones in socio-economic subjects. In general, it is a quite well positioned Department in the national context. Data from Montevideo is also showed because it is an important reference from Canelones, as it was pointed.

Table 2: Socio-economic indicators, Canelones (INE, 2010)

Territory	% of population covered by health insurance	Population 25-65 years with no education (less than 1 st year of primary education)	Population 25-65 years with at least 6 years of primary education (complete or pursuing 6 th year)	Population 25-65 years with tertiary education	Average income per capita relative to the national average	% of poor
Canelones	64.5	0.8%	99.2%	13.3%	88.5%	14.5
Montevideo	70.1	0.4%	99.6%	28.1%	129.7%	21.6
Uruguay	64.7	0.7%	99.3%	17.4%	100.0%	18.6

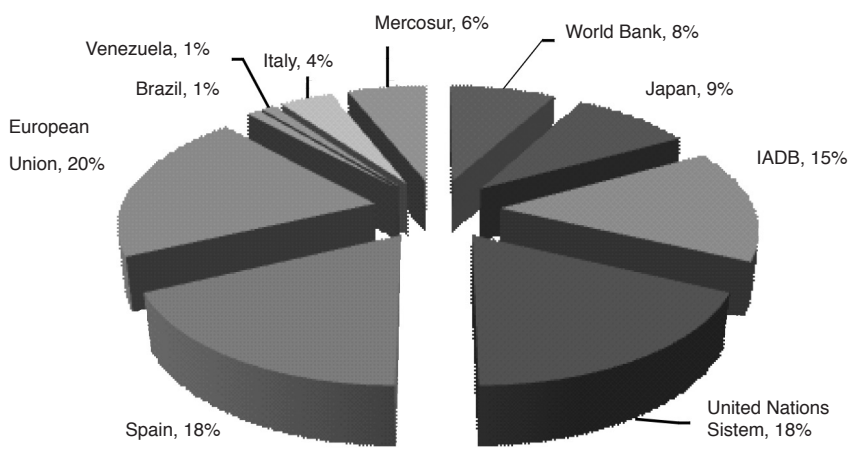
Source: Elaborated with ECH INE (2010).

- 1 The law establishes municipalities for towns and cities of more than 2,000 inhabitants, although at the beginning the measure was applied to populations of more than 5,000. The municipalities for populations of more than 2,000 and less than 5,000 will be created after 2015. There are 29 municipalities in Canelones.

The context of ITC in Canelones

First of all, we present a general framework of international cooperation in Uruguay. According to the Department of International Cooperation of the OPP (Uruguayan Office of Planning and Budget) (OPP, 2010) in 2010 were 395 active projects of international cooperation that had received funds in 2009/2010 for us \$215,830,083. The major sources of cooperation are from the EU (20% of funds) followed by Spain and the United Nations (both of them 18%), and finally the BID (Inter-American Development Bank) (15%).

Graph 1: Distribution according to source of international cooperation funds received by Uruguay. April, 2010



Source: OPP (2010).

The focus on international cooperation has recently changed in Uruguay by the creation of the Uruguayan Agency of International Cooperation (AUCI). The agency was implemented to deal with challenges faced in the area of international cooperation, specially related to a tendency to decrease cooperation due to uncertainty in developed countries in the actual crisis period. This tendency could seriously af-

fect the flows of cooperation to Uruguay, a middle-income economy and with a GDP growth period from 2003. This has been recently pointed out by some authors (Mieres, 2012; Fittipaldi Freire, 2012).

In Uruguay, with the exception of Montevideo, international cooperation had historically been received and managed by the national government in a context of cooperation agreements with foreign national governments or with international organisms. However, in Canelones was created in 2005 the International Cooperation Consultancy with the explicit aim to use the international relationships to promote the local and regional development. And by 2006-2007 several agreements and projects related to ITC started to be implemented (before that only a few twinning cities agreements could be identify).

The current DG (that assumed in 2005 and was reelected in 2010) promoted the entry of Canelones into the URB-AL Network (Regional Cooperation Program of the UE whose objective is to promote direct exchanges territory to territory and from both continents, UE and Latin America). Canelones has participated in the URB-AL Network 12 (Women and Cities) in projects with other local governments in the region (for example, with Rosario in Argentina) as well as in European projects (for example, through the Deputation of Barcelona). Since 2009, within the URB-AL framework, Canelones is working with the City Hall of Hospitalet de Llobregat (Barcelona) and other local governments on the issue of emigration and local development.

In 2005, Canelones also joined the Merco-cities network, the major city network of MERCOSUR. In 2008, Canelones occupied the presidency of the Executive Secretariat of this network, receiving support from the Deputation of Barcelona.

Other evidence of the role of territorial cooperation in this administration is the exchange with the local government of Rosario (Argentina, Santa Fe). In particular, some support from Rosario was received to design a strategic plan for the Department.

Using the ITC survey on Canelones (ESPON-EUROREG, 2012b), it could be said that major of the agreements and projects are with Spanish territories, and some with Italy territories and twinning cities (see table 3).

Table 3: ITC with each territory (2005-2010)

Percentage of answers that mention ITC with each territory	
Spain	93
Italy	30
Twinning cities	26
Other European	15

Source: ESPON-EUROREG (2012b).

In Annex, tables A2 and A3 show the list of ITC projects identified between Spanish territories and Canelones. We can see that ITC with Spain is mainly with the Canary Islands, Deputation of Barcelona and Andalusia. Summarizing, cooperation from the government of the Canary Islands for Canelones in the period is 798,929 €, which is almost 40% of total cooperation of the Canary Islands with Uruguay in this period. To this sum we could add almost 100 thousand Euros more of the contribution from the Chamber of Commerce Canaries-Uruguay. Cooperation of the Deputation of Barcelona with Canelones comes to 550,000 €, which represents 33% of its total cooperation with Uruguay. To this amount, we could add 40,000 € more from the Associació Catalana de Municipis i Comarques. On the other hand, cooperation with Andalusia in the same period was about 576,000 US\$.

However, as discussed below, the importance of the ITC is not related to monetary amounts. In fact, the ITC's monetary funds received by territories are quite smaller than those channeled by international cooperation at national level.

Factors facilitating or hindering ITC

The survey responses in ESPON-EUROREG (2012b) on the factors that facilitate or hinder ITC show interesting results. The 72% mentioned availability of funds as an important factor. However, in average the interviewees consider funds facilitating or hindering ITC only "somewhat". On the other hand, with mentions between 55% and 65% of

total responses, positive historical precedents, common culture and common language are pointed out as the factors that greatly facilitate ITC. Thus, funds are important (obviously), but are not the most important factor facilitating ITC neither a factor that greatly hinders ITC. In a similar way, results from in-depth interviews show that common culture and a history of migrations between the territories are the most important ITC facilitating factors. It could be said that this response is almost a consensus.

About own resources, the mainly mentioned problem hindering ITC is the deficit of adequate human resources in DG and local organizations to address cooperation processes. It is also associated to the difficulty of consolidating technical teams.

Some interviewees mentioned the national government level as a relevant actor pointing out that coordination between DG of Canelones and the AUCI would be desirable and could generate new opportunities. The civil society is mentioned as an important factor, although not as a decision-making actor. Related to this some interviews mentioned initiatives that were supported from immigrant associations, organizations of the civil society or influenced by some local reference.

From interviews also emerge that political affinity of administrations in cooperating territories is considered significant to initiate cooperation contacts. However, in general, once established cooperation is maintained in spite of changes in political orientations of the counterparts. An additional facilitating factor that stands out from interviews (made in Uruguay and with Spanish counterparts) is the change in attitude of the government of Canelones since 2005. In fact, the “Intendente” (governor of DG) himself worked proactively to generate cooperation ties with other local governments (especially from Spain).

Finally, almost all of those interviewed manifested the importance of having “common problems”, “similar territorial scales”, “being peers” or “governments at the same level” as crucial factors explaining flows of ITC.

Domains of ITC between Canelones and Spanish territories

Table 4 shows that the survey responses indicate culture as the main domain and with an important average impact. Environment is second, followed by education, spatial planning, social infrastructure and other physical infrastructures. All of them with an average impact from moderate to important.

Table 4: Domains in which Spanish ITC is relevant and its impact

Domains	Culture	Environment	Education	Spatial planning	Social infrastructure	Other physical infrastructures	Tourism	Economy	Economy	Health	Highways
% mentioning this activity	68	40	28	28	28	28	28	24	20	16	4
Average impact (from 1 to 5)	3.8	3.6	3.6	3.6	3.4	3.2	2.9	3.2	3.4	2.5	1.0

Note: Average of responses on impact based on the scale:

1 - Minimum; 2 - Low; 3 - Moderate; 4 - Important; 5 - Very important.

Source: ESPON-EUROREG (2012b).

The in-depth interviews showed similar opinions to the survey answers, pointing out the following areas: cultural and social matters, environment, spatial planning, decentralization and governance as well as improvement of public management. From interviews also emerge that these domains of ITC seems to be linked to the current situation in Uruguay of economic growth and low unemployment that leads to privilege aspects such as culture, environment and social infrastructure.

The ITC with Canary Islands

As was pointed out one of the main reasons for the ITC with Spain is the cultural factor. It has an explanation on common history, particularly relative to migration processes from Spain to Uruguay in the 19th and 20th centuries. A research financed by the Cabildo of Gran Canaria in Spain through the system of aid to research (2004-2006) and by the CSIC of the University of the Republic of Uruguay (2005-2007) has studied the Canary immigration waves to Uruguay (Barreto Messano, 2008). The study identified two periods of Canary immigration:

- A foundational period in the middle of the 18th century that was a “directed migration” by the Spanish Crown to populate empty spaces in America. In fact, the first Spanish city, Montevideo, was founded in 1726 with Canary families. In this period, the Department of Canelones was populated mainly by families from the Canary Islands. This gave to the settlers in this Department the name of “Canaries”.
- A second period of migration that began in 1830. The research establishes that this is the migratory wave relevant to explain the Canary influence in the Department of Canelones and the cultural ties between territories (the same happened to other parts of America, particularly Venezuela and Buenos Aires). It was people seeking a better future; many of them were even illegal immigrants.

In Barreto Messano (2008) is estimated that some 8,200 Canaries arrived to Uruguay between 1835 and 1842. This number is very significant considering that the whole country population in 1835 was only 128,371 inhabitants. First of all, Canary islanders settled down in Montevideo finding jobs in farms, brick ovens, mills and salting houses. They later began to reside in Canelones, located there to supply Montevideo’s demand. To illustrate those migratory flows is useful to read a request presented to the government by a Uruguayan entrepreneur in 1833 asking to bring into the country 700 to 1000

migrants mainly from Canary Islands. This document describes the migrants as "... persons of good conduct, farm-workers, farmers, artisans and other, of use in any job" (Barreto Messano, 2008: 22). This common history explains the priority of ITC from Canary Islands to world territories where Canary islanders were settled, and not according to development levels or other development aid criteria. The priority countries are, in order of importance, Venezuela, Uruguay, Brazil, Argentina and Cuba.

In Uruguay, historically, the identification of "Canaries" assigned to the settlers of Canelones was associated for a long time with the condition of a rural "brute" settler, with a clearly negative connotation. Since 2005, the DG of Canelones has worked intensely to transform the meaning of territory identity in the Department related to the migration culture and the Canary Islands' origin of its population. Thus, there is an important coincidence between the governments of Canelones and the Canaries in their aim to promote a re-evaluation of their respective historical and cultural patrimonies while committing to the building of a shared territorial identity. This has led to find fertile ground for cooperation between these territories.

In practice the DG of Canelones has established the generation and integration of Canarian identity as a goal to be considered in all the projects. As part of this, the DG changed its institutional logo to make itself known as the "comuna canaria" (see Annex, figure A1, the official logotype of the DG of Canelones). This strategy has strengthened relationships with the Canary Islands and facilitated exchanges and cooperation projects.

Some of the projects in this area, with the support of Canary cooperation and an important role of the Patrimony Commission of Canelones, refer to the publication of the *Catalogue of cultural heritage. Material and non-material patrimony in the Department of Canelones*, the elaboration of list of selected house facades in the city of Canelones to be refurbished, the creation of a Enological Museum in Las Piedras city, the digitalization of Canary documentation in Canelones and Uruguay with support from CEDOCAM (Center of Documenta-

tion of Canaries and America, Gran Canarias),² and the project of an Immigration Museum, as well as the organization of international seminars on culture matters and territory identity in Canelones. In fact, the Patrimony Commission of Canelones itself was created in 2006 supported by ITC from Canary Island. Its work with the local towns and villages, carrying out projects such as those mentioned, has represented a very important change in institutional policies of DG.

On the other hand, some of the interviewees commented on how cooperation with Canary Islands that had emerged mainly by cultural interest had led to the generation of funding for infrastructures that also were a driving force for important economic impact. For example, the Canarian Technological Park in Las Piedras, which allows the attraction of investments like a Japanese auto-parts firm (Yasaki), which now employs about a thousand workers.

The ITC with Deputation of Barcelona

The Deputation of Barcelona is an intermediate local government that groups 331 municipalities in Barcelona. Therefore, their capabilities and interests on ITC with Latin America are related to matters of decentralization and governability with experience in the coordination of actors and policies in the territory, multi-level governance, technical training and planning.

So, is interesting to note that the relative level of development or poverty is not the most important to explain this type of cooperation. The key is on finding common matters, problems or opportunities between local and other sub-national governments to transfer experiences and achieve joint learning by implementing direct cooperation. In South America, Deputation of Barcelona's cooperation is concentrated in Montevideo, Canelones, Rosario (Argentina), Peñalolén (Chile) and Santiago (Chile). On the other hand, since 2003 the Deputation of Barcelona has participated actively in URB-AL.

2 See: <http://patrimonioscanariosdelacomuna.org.uy/cedocam>

The focus of Deputation of Barcelona's cooperation has found its correlation with the emphasis of DG of Canelones in promoting cooperation as a way of strengthening development strategy planning.

According with the strategy of actively participating in various municipal and local government networks, Canelones was integrated to the Merco-cities (within MERCOSUR) and URB-AL (EU-Latin America) networks. The first contact with the URB-AL program was in 2005 through Network 12 in a project on gender equality headed by the governments of Montevideo and Barcelona. At the same time, the Deputation of Barcelona and Montevideo set up a Decentralized Cooperation Observatory between the EU and Latin America (see: <http://www.observ-ocd.org>). Given the excellent relation between Montevideo and Canelones governments, the latter found easier to get into networks related to ITC.³

The main ITC agreement with Deputation of Barcelona was the support received during the Executive Secretariat of the Merco-cities Network for the period 2008-2009 that was assumed by Canelones. In this framework of Merco-cities, sub-networks were created with projects that receive ITC funding. For instance, a thematic unit on environmental management was created with 12 cities with pilot awareness projects financed by Canelones with the support of the Catalan Fund for Cooperation. Besides, the participation in Merco-cities has fortified relations with other governments in the region. It was the case with the local government of Rosario (Argentina) that heads a sub-network on the thematic of strategic planning in which Canelones also participates. Important exchanges were made with Rosario, particularly in order to learn from Rosario's experience about strategic development planning. It was a relevant contribution to the elaboration of the own development plan for Canelones.

- 3 In relationship between Deputation of Barcelona and Canelones was quite important the initial support and experience contribute by the government of Montevideo (which has a large experience in cooperation).

The implementation of ITC

It was clearly established in the interviews that ITC's impact depends more on how the projects are instrumented and their modality than the project's area. It means the modality of implementation could be even more relevant than the area of cooperation itself.

Thus, the main advantage of ITC refers to the kind of relationships developed between the counterparts in the territories. There is a large consensus in the interviewees in pointing out the modality of ITC as the greatest value of received cooperation. It means the possibility of exchange of experiences, transferring different approaches or sharing the same instruments to face a common problem, the joint execution of actions or investments (in physical infrastructures or intangibles, *e.g.* the joint organization of cultural events) or the joint execution of territorial strategies (*e.g.* design and implementation of programs, plans or specific solutions to particular problems).

The survey in ESPON-EUROREG (2012b) confirms the results from interviews. It shows that exchange of experiences is mentioned by 64% of respondents about the ITC with Spain (see table 5). Joint planning and implementation of actions and joint execution of territorial strategies are both mentioned by 40%. The application of shared instruments and the transfer of problem-solving approaches are also mentioned (36% and 28%).

**Table 5: Modality of ITC's implementation
(ITC with Spanish territories)**

ITC's implementation	Total mentioned
Exchange of experiences	64%
Joint implementation of common actions or investments	40%
Joint execution of territorial strategies	40%
Transfer of various approaches to solving a common problem	36%
Sharing the same instruments to solve a common problem	28%

Source: ESPON-EUROREG (2012b).

The cooperation from the Deputation of Barcelona is a good example of explicitly committed to the creation and promotion of dialogue and exchange between local governments. For this approach, the funding of internships and the exchange of technicians and scholarships are considered essential. These actions are in keeping with processes of mutual learning and institutional strengthening.

Several responses indicate that the characteristic of ITC allows a better adjust of cooperation to the receiving territory. For example, Canelones has been working for the past years in the area of territorial planning. Since 2005 four decentralized offices of territorial planning were created (in these cities: Las Piedras, Canelones, Pando, Ciudad de la Costa and Costa de Oro). This process was supported by ITC from Andalusia, particularly in the “Costa Plan” (spatial planning and territorial zoning of the Ciudad de la Costa). So, this ITC’s project had significant impact on solving specific problems which the DG of Canelones was dealing with. On the other hand, the training received and the technician exchange had an important impact on generating synergies with other similar projects being carried out in Canelones about spatial planning.

Other example of how implementation is at least as important as the project’s area is the type of management in the project called “100 squares” with support of ITC from Canary Islands. The project consisted on interventions to create public squares aimed at spaces of social integration in critical zones. It was coordinated by a commission formed by various offices and areas of the DG, which avoided the project becoming a unilateral effort by a single dependence. The commission was integrated with the offices for Environmental Management, Territorial Planning and Youth and Sports. In this way, the actions already being implemented or planned by these offices were better coordinated and the cooperation contributed to generate synergies instead of conflicts.

One theme that emerged in the research was the adequacy (or not) of funding infrastructure with ITC. In the in-depth interviews, there is general agreement that the country probably will not receive cooper-

ation for infrastructure in the future since it is already a medium-income country. Besides, as already was established, it is considered that ITC funds are better aimed at the exchange of experiences, training or the diffusion of good practices. However, some interviewed said that sometimes ITC investment in infrastructure was an effective way to place some projects on the political agenda.

About adequacy of funding infrastructure with ITC, the survey in ESPON-EUROREG (2012b) shows that 33% think that it should be part of cooperation, 52% think that infrastructures should not be part of ITC and 15% do not answer. Thus, the most of responses consider that ITC should not finance infrastructure, although there is no clear consensus.

Finally, it is interesting to know whom is the main actor pointed out in the initiation and execution of ITC. In the in-depth interviews clearly the DG appears in first place of importance as the relevant actor in promoting and executing ITC. Also, the figure of the “Intendente” (chief of DG) and his attitude toward cooperation are mentioned as an important factor. The associations of immigrants are also considered very important and, to a lesser degree, the role of others actors from the civil society (*e.g.* NGO’s or local organizations in small localities such as the Association of Pensioners and the Retired in Tala). There is a lack of participation of entrepreneurs, although the general opinion is that they are slowly beginning to participate in these processes.

Table 6 shows the results from the survey. It also confirms that the DG is the main actor in ITC process followed by municipalities and national government.

Table 6: Indication of up to 3 key organizations in the initiation and execution of Spanish’s ITC

Actor or organization	% of responses assigned in each case
Departmental Government	72
Municipalities	56

Continúa...

Actor or organization	% of responses assigned in each case
National government	48
NGO's	28
Development agencies	16
Chambers of commerce	8

Source: ESPON-EUROREG (2012b).

The role of the DG in ITC process is reaffirmed from the perspective of the Spanish cooperation. The counterparts of Canary Islands and Deputation of Barcelona follows a general policy of direct cooperation with local governments, in this case the DG of Canelones. Anyway, in practice, cooperation has resorted to NGO's and organizations of the civil society. For example, in some ITC projects has participated the Foundation "Modelo" from the Canary Islands. Also, some relations were made between the Canary Islands' ITC and associations of Canary Islands immigrants in Uruguay and the "Chamber of Commerce of Uruguay and Canary Islands". On the other hand, the Deputation of Barcelona sometimes works with NGO's and local actors under the coordination of the local government.

Final remarks

The real relevance of TC to local development

The added value and importance of ITC is not in the physical contribution (infrastructure) or the money (the amount of aid funds), but refers to the generation of intangible assets for development. These assets are linked to joint learning resulting from the exchange of experience and the transfer of know-how and specific knowledge about certain processes and situations that represent similar challenges for the territories (both those who provide and those who receive cooperation). On the other hand, ITC appears to be a useful instrument to strategic positioning the territory in the national and regional context in order to contribute to develop an own project for local development.

Those characteristics of ITC and the nature of its value explain why cooperation flows are not necessarily related with levels of development or traditional criteria of development aid. That is why ITC usually respond to reasons of common culture, common history, common interests or shared strategic visions.

The general opinion supports the idea that infrastructures should not generally be financed with ITC except when accompanying other processes or when the investment works like a catalyst for related goals. In fact, ITC in general does not involve large sums of funding, so is quite difficult to generate significant impacts on infrastructure. However, after taking into account all points of view, it seems that it is too risky to establish a strict rule. It seems recommendable to perform a case-by-case analysis to determine if the funding of infrastructures is justified. Probably would be justified when infrastructure projects are integrated into broader goals associated with a strategic process of cooperation and, for some reason, it is difficult to use local funding in it. When the infrastructure is a goal in itself or the government may use local funds, this does not appear to be suitable for a project funded by the ITC.

ITC possibilities as a development tool are closely related to the importance of exchanging experience and learning from peers. In general, ITC has a great potential to contribute with strategic intangible values that cannot be bought in the market. To achieve a goal clearly is need material resources and cooperation can give some support in this. However, besides resources, other things are necessary like the knowledge of how to implement a policy or an action, the experience in similar task, how to face difficulties that can be encountered and what solutions can be applied. This kind of support is what ITC can offer as a differential compared with traditional aid.

An important matter is the need to advance in a more integrated view of the ITC closely related to the territory's development strategy, in order to focus on areas and objectives defined as priorities. Therefore is essential to define more clearly the Department's development priorities as the basis of a strategic plan for the territory. This makes it easier to get the kind of cooperation that is needed and align resources

from the ITC with local efforts to achieve DG priorities. At the same time, ITC could be use as a tool to improve planning capabilities and improve management skills. As a result, the local government would be in better condition to improve cooperation relationships and get more articulated projects with the strategic goals defined for the territory.

Other related aspect refers to institutional strengthening including local technician teams. Therefore cooperation management should help to strengthen local government's technical teams instead of generating parallel and temporal structures.

In general, as one of those interviewed said there is a great opportunity in "moving from management of demands (necessities) to an approach of what the territory can offer". It means to think the territory with its own development project and its valuable resources and experience, being capable of analyzing and determining what it can offer to other territories in terms of cooperation and what it can learn from others.

One way to innovate in cooperation possibilities refers to triangular and south-south cooperation. This was identified as an actual possibility for Canelones. Triangular cooperation means that Canelones in collaboration, for example, with a Spanish territory, could give support to a third territory facing a problem or situation already solved in Canelones. In this extent, Canelones could contribute with technicians and experience according to how it solved that particular problem in its own territory.

At present, some attempts at south-south cooperation are being carried out by the Merco-cities network,⁴ for example, through some cooperation agreements between Canelones and territories in Paraguay and Ecuador. In the Department of San Pedro and the municipality of Luque in Paraguay, Canelones supports the implementation of "digital government" by transferring their own expertise. In the province of Pichincha in Ecuador, Canelones is cooperating on the issue of gender and domestic violence. At the same time, in the ITC

4 To know about "Merco-ciudades" network in MERCOSUR, see Chasquetti (2006).

with Deputation of Barcelona is also promoted the participation of local governments in these “South-South” cooperation processes.

About civil society there is a general agreement it should be more involved in RTC processes. There are no visible legal problems to their participation; however, the cost and bureaucracy involved in acquiring legal status as well as the need to build up a culture of participation are important obstacles. So improving participation of local actors in RTC is other topic to work in order to make it more powerful as a development tool.

Finally, it is clear that RTC, in some extent, must be coordinated with the national government’s strategy (in Uruguay, within the framework of the AUCI). Although is critical avoiding that national’s intervention can strangle a processes that should naturally be guided by interests between peers with equal concerns and problems. That is the main advantage of territorial cooperation: the flexibility and adaptation to the needs and conditions of the territory, on the basis of similar concerns of governments and the communities involved, which also face similar challenges.

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de empleo*. Madrid: Editorial Pirámide.

Annex

Table A1: List of in-depth interviews

Interviewee	Profile and organization
Igor Santander	Master in International Cooperation. Director of the International Relations Consultancy of Canelones DG.
Isabel Barreto	Anthropologist. Researcher in the University of the Republic.
Yamandú Costa	Director of the Canary Technological Park (a project carried out with Canary cooperation). President of the Uruguayan-Canary Chamber.
Xosé Enríquez	Consultant for the Departmental Patrimony Commission.
Héber Figueredo	Secretary of the Local Junta of Tala from 2005 to 2010.
Silvana Maubrigades	Sociologist and historian. Director of Strategic Planning in the Intendencia of Canelones.
Andrés Ridaó	Architect. Director of Territorial Regulation in the Intendencia of Canelones.
Elena Pareja	Professor. Director of the Departmental Patrimony Commission.
Virginia Vidal	Architect. Member of the team in the Departmental Patrimony Commission of the DG of Canelones.
Leonardo Herou	B. S. Director of Environmental Management in the DG of Canelones.
Miguel Scagliola	Sociologist. Ex sub-director of Youth in the Intendencia of Canelones.
Martín Mercado	Msc. in IT. Ex technician of the Canary Promotion Unit from 2005 to 2010.
Jimena Fernández	B. A. Specialist in the Formulation and Monitoring of the Projects of the ART Program Uruguay and the UNPD.
Roberto Villarmarzo	Architect. Expert/consultant. Ex National Director of Territorial Regulation in Uruguay. Ex consultant for the Intendencia of Canelones.
Karen Van Rompaey	B. A. in International Relations (U. of the Republic). Master in International Political Economy (U. of Warwick). Uruguayan Agency of International Cooperation (AUCI).

Interviewee	Profile and organization
Mateo Porciúncula	B. S. in Political Science. Uruguayan Agency of International Cooperation (AUCI).
Martín Fittipaldi	Specialist in International Development Cooperation. Specialist in decentralized cooperation EU- Latin America.
M ^a Consolación Dapena Boixareu	Head of the Social Action and Cooperation Office in the General Direction of Emigration. She is in charge of Canary cooperation in Latin America. Santa Cruz de Tenerife (Spain).
Laia Franco Ortiz	In charge of “Cooperació Directa Amèrica Llatina”. Office of “Cooperació al Desenvolupament”. “Direcció de Relacions Internacionals” Presidential Offices. Deputation of Barcelona (Spain).

Source: elaborated by author.

The interviews in Uruguay were held face-to-face. The Spanish counterparts were interviewed by telephone with e-mail exchanges, both before and after the telephone interview.

Table A2: RTC of Canary Islands and Deputation of Barcelona with Canelones

Cooperant	Projects of RTC. Period 2005-2010	Quantity
Canary Islands	“100 Plazas”: Pilot Program. The purpose is to create physical convenience spaces in cities towns and villages of the Department that will foster social cohesion and self-esteem of the citizens residing there.	2007: 100,000 €
	“Canary Center”: Reconversion of the old hospital of Canelones into a center with various offices of the DG, the Canary Immigration Museum as well as social-cultural center.	2006/2008: 496,929 €
	“Revalue the Patrimony of Canelones. Catalog of Cultural Patrimony of the Department”: The objective was the elaboration of a catalog and register of the cultural assets of the Department which would lead to measures to conserve and exploit them by various public and private entities.	2007: 30,000 €
	“Canary Patrimony”: This is an agreement between Canelones and the Cabildo of Tenerife to consolidate collaboration ties between both territories starting from the revalorization of Canary culture, recuperation and digitalization of Canary manuscripts as well as bibliographical and photographic collections in Uruguay.	2010/2011: 30,000 €
	“Pilot Project of Modernization for Decentralization of Canelones and Colonia”: The goal of the project is to improve tax collection and self-financing capability of DG’s.	2009: 104,000 €.
	“Citizen Gateway/Web Page and Evaluation of the Fiscal-Economic System for the Consolidation of Decentralization”: The objective is to implant a system for the analysis of fiscal information and the creation of a web page or Gateway for citizens to be launched by the local electronic government.	2009: 88,000 €
	“Casona of the Canary Technological Park (PTC)”: Infrastructure for the Industrial Agro-food Park and Fairground and Exposition Center. Chamber of Commerce of Uruguay and Canary Islands.	2007: 60,000 US\$

Continued...

Cooperant	Projects of ITC. Period 2005-2010	Quantity
Deputation of Barcelona	“Institutional Fortification of Merco-cities”: The project consisted of supporting Canelones in 2008/2009 in the management of the Executive Secretariat of Merco-cities.	2008/2009: 100,000 €
	“Dialog for Decentralization. New Local Governments. The New Institutionalality and its Influence on Local Development”: This project aims to support decentralization and the strengthening of local government.	2008-2009: 50,000 €
	“EMIDEL-Local Development and Emigration in Latin America”: EU Program URB-AL III. The project is about developing mechanisms and instruments to boost local economic development and entrepreneurial initiatives. Partnership with Hospitalet de Llobregat (Barcelona), La Paz (Bolivia) and Santa Tecla (El Salvador).	2009-2012: 400,000 €

Main sources: i) Deputation de Barcelona (2011). “Projects of Direct Cooperation of the Deputation of Barcelona in Alliance with the Municipalities/Intendencias of Uruguay”; ii) Government of the Canaries (2011). “Report on Canarian Cooperation Projects in Uruguay (2001-2010)”; iii) Intendencia de Canelones (2009). “Compendium of Cooperation Projects of the Municipal Intendencia of Canelones. Period (2005-2008)”, Unit of Canarian Promotion; iv) Interviews.

Table A3: ITC of other Spanish territories with Canelones

Cooperant	Projects of ITC. Period 2005-2010	Quantity
Associació Catalana de Municipis i Comarques	“Canelones Grows with You”: Training and intervention to install a monitoring system of families in Canelones with nutritional deficit.	40,000 €
Junta de Andalusia	“Catalogue of heritage buildings in rural land and intervention criteria”: Cultural heritage preservation in rural heritage.	90,000 uss
	“Intervention for the rehabilitation of a public space on the waterfront”: Urban infrastructure (Civic Center) and spatial planning.	300,000 uss
	“Assistance to the development of the Land Use Plan of the City of Costa”: Training and support for the spatial planning of City of Costa (Coastal Plan).	90,000 uss
	“Assistance to the Reform of the Urban Digest Departmental”: Technical support.	60,000 uss
	“Technical Personnel Training”: Training courses and internships in rural and urban management in Andalusia.	36,000 uss

Continued...

Cooperant	Projects of rrc. Period 2005-2010	Quantity
Xunta de Galicia	“Restoration of the house of José Alonso and Trilles-Old Pancho-Tala Town”: Installation of a Galician-Uruguayan Cultural Center in Tala.	45,000 uss
Deputation of Bizkaia	“Technical Cooperation in Waste Management”: Technical support. Bizkaia (País Vasco).	15,000 uss
Municipality Portugalete	“Local Labor Training Center Professional for Employability and Entrepreneurship”: Support for the installation of an Employment Training Center in the city of Las Piedras. Portugalete (País Vasco).	120,000 uss

Main sources: i) Intendencia de Canelones (2009). “Compendium of Cooperation Projects of the Municipal Intendencia of Canelones. Period (2005-2008)”, Unit of Canarian Promotion; ii) Interviews.

Figure A.1: New logo of the dg of Canelones since 2005



Source: Official web page of the dg of Canelones.

RESUMEN

En este trabajo se estimó la pobreza multidimensional para cuatro provincias de Pakistán utilizando, para ello, una encuesta que mide los estándares de vida y sociales para los años 2005-2006, desde la metodología propuesta por Alkire y Foster. Se seleccionaron nueve dimensiones: vivienda, electricidad, agua, activos, saneamiento, educación, gasto, empoderamiento y tierras. Los resultados fueron que, en general, la provincia de Baluchistán presenta las peores condiciones de pobreza, seguida de la Provincia Fronteriza Noroccidental, Sind y Punjab. En las zonas urbanas y rurales de Baluchistán, se encontró un mayor número de pobres multidimensionales, seguido de la Provincia Fronteriza Noroccidental, Sind y Punjab. La pobreza, en todos los casos, resulta ser más severa en las zonas rurales que en las urbanas. Al analizar la contribución de cada dimensión a la pobreza multidimensional, se encontró que las que más contribuyen están relacionadas con la tierra, el empoderamiento, la vivienda, así como los bienes y servicios de saneamiento. Para finalizar, este artículo presenta evidencia empírica de la no coincidencia en la identificación de pobreza usando el enfoque monetario o bien, multidimensional.

Palabras clave: Pakistán, pobreza multidimensional, análisis provincial.

ABSTRACT

This paper has estimated multidimensional poverty for four provinces of Pakistan using Pakistan social and living standard measurement survey dataset for years 2005-06 by applying Alkire and Foster methodology. Nine dimensions were selected for this study: Housing, Electricity, Water, Asset, Sanitation, Education, Expenditure, Empowerment and Land. Results found that overall Balochistan shows the worst picture followed by NWFP, Sindh and Punjab. Urban and rural areas of Balochistan are more multidimensionally poor followed by NWFP, Sindh and Punjab. Results show that the most pervasive level of poverty exists in rural areas of different provinces. The analysis of contribution of each dimension in multidimensional poverty at different cut-offs showed that the major contributors are Land, Empowerment, Housing, Assets and Sanitation. This study also presents an empirical evidence of significant lack of overlap in the identification by the monetary and multidimensional approach in the case of Pakistan.

Keywords: Pakistan, multidimensional poverty, provincial analysis.

Medición multidimensional de la pobreza en Pakistán: análisis provincial

Multidimensional measurement of poverty in Pakistan: provincial analysis

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1. Introduction

Poverty is one of the most familiar phenomena and fact of human societies. It has involved many of the most prominent social thinkers, specifically academia, researchers and policy makers from all over the world in debates about its origin, causes and types. Arose of all this resist, till now a common man is incapable to answer a simple question: what is poverty, exactly? Even this most simple question is unlikely to produce a universally accepted answer, although most would agree it involves such concerns as hunger, unemployment, illiteracy, malnutrition, ill-being, incompetency, gaps between the different segments of society and combination of all these or something bigger than it. Precisely speaking the term “poverty” encompasses multiple aspects of human life. None is seems to disagree that deprivations exist in multiple domains and are often correlated. In order to understand the threat that the problem of poverty poses, it is necessary to know its dimension and the process through which it seems to be deepened. The measurement of correlated multiple domains with respect to poverty, fabricates the new concept, *i.e.* multidimensional poverty. Now theoretical and analytical evidence is ample, while remaining **insoluble** issues in poverty analysis are related directly or indirectly to the multidimensional nature and dynamics of poverty (Thorbecke, 2005: 3-30). Analysis on multidimensional poverty has occupied much attention of economists and policymakers, particularly since the writing (Sen, 1976: 219-231) and the rising of data availability for relevant research purpose. The justification behind this multidimensional measurement of poverty is based on the idea that income indicator is incomplete and its deficit leads to vague estimations of poverty (Díaz, 2003: 674-697). Having said that, alternative dimensions such as health, educational attainment, social exclusion, and insecurity are often weakly correlated with income or expenditure (Appleton and Song, 1999: 1-56). These poor correlations highlight the fact that measuring these additional dimensions enriches and provides additional information to the poverty picture (Calvo and Dercon, 2005: 1-29). However, the strength of measurement lies in the

construction of indexes that capture the relative importance of each indicator in the total poverty picture. The weighting of each indicator is meant to reflect the strength of the relationship with “wealth factor” for asset-based measurement as proposed by Sahn and Stifel (2000: 463-489). While the most important component in poverty measures is identification, there are two main approaches in identifying the poor in a multidimensional setting (Alkire and Foster, 2007: 77-89), *i.e.* “union” and “intersection” approach.

Alkire and Foster (2007: 77-89) proposed a counting approach for measuring the multidimensional poverty. This approach has a number of characteristics that deserve mention. First, the identification method mentioned in this approach is poverty focused, *i.e.* an increase in the achievement level of a non-poor person leaves its value unchanged. Second, it is deprivation focused, *i.e.* an increase in any non-deprived achievement leaves the value of the identification unchanged. Third, this approach can be meaningfully used with ordinal data. Fourth, this approach satisfies several desirable properties including decomposability. Fifth, we can also assign different weights to each dimension.

The main objective of the paper is to apply the above mentioned methodology to estimate multidimensional poverty in four provinces of Pakistan, which would complement the income poverty estimates performed by Planning Commission of Pakistan and other government agencies. This study also highlights the importance of each dimension because the beauty of this methodology is that: we find out the effect of each dimension in overall poverty

Rest study is balanced as, part two explains the data and methodology used in this paper; part three discusses the selected dimensions and cut-offs; part four presents the results, and part five concludes the study and also give some policy options to control the problem.

2. Data and methodology

The dataset used in this paper is the 2005-06 Pakistan social and living standard measurement survey (PSLM) conducted by Federal Bureau of Statistics (FBS) Pakistan. This is the second round of PSLM. The Household Integrated Economic Survey (HIES) [Part of PSLM] is

the main source of data for poverty estimates in Pakistan (Arif, 2003: 12-47). HIES Questionnaire was revised in 1990 in order to incorporate the requirements of the new system of national accounts. 1990-91, 1992-93, 1993-94 & 1996-97 surveys were conducted using revised questionnaire. In 1998-99 and 2001-02, the HIES data collection methods and questionnaire were changed to reflect the integration of the HIES with the Pakistan Integrated Household survey (PIHS). The HIES 2004-05 was conducted as part of first round of PSLM survey covering 14 708 household taken as sub-sample of the 77 000 households of PSLM survey. The current round of HIES has been carried out covering 15 453 households [FBS-2005-06].

In this paper we use a methodology for multidimensional poverty measurement proposed by Alkire and Foster's (2007: 77-89). First we define the notations which will be helpful to provide an outline of the measure.

Let $M_{n,d}$ denote the set of all $n \times d$ matrices, and $y \in M_{n,d}$ represents an achievement matrix of n people in d different dimensions. For every $i = 1, 2, \dots, n$ and $j = 1, 2, \dots, d$, the typical entry y_{ij} of y is individual i 's achievement in dimension j . The row vector $y_i = (y_{i1}, y_{i2}, \dots, y_{id})$ lists individual i 's achievements and the column vector $y_j = (y_{1j}, y_{2j}, \dots, y_{nj})$ gives the distribution of achievements in dimension j across individuals. Let $z_j > 0$ represent the cut-off below which a person is considered to be deprived in dimension j , and z represent the row vector of dimension specific cut-offs. Following Alkire and Foster's (2007: 77-89) notations, any vector or matrix v , $|v|$ denotes the sum of all its elements, whereas $\mu(v)$ is the mean of v .

Alkire and Foster (2007) suggest that it is useful to express the data in terms of deprivations rather than achievements. For any matrix y , it is possible to define a matrix of deprivations $g^0 = [g_{ij}^0]$, whose typical element g_{ij}^0 is defined by $g_{ij}^0 = 1$ when $y_{ij} < z_j$, and $g_{ij}^0 = 0$ when $y_{ij} \geq z_j$; g^0 is an $n \times d$ matrix whose i^{th} entry is equal to 1 when person i is deprived in j^{th} dimension, and 0 when person is not; g_i^0 is the i^{th} row vector of g^0 which represent person i 's deprivation vector. From g^0 matrix, define a column vector of deprivation counts, whose i^{th} entry $c_i = |g_i^0|$ represents the number of deprivations suffered by person i . If the variables in y are

only ordinally significant, g^0 and c are still well defined. If the variables in y are cardinal, then we have to define a matrix of normalized gaps g^1 . For any y , let $g^1 = [g_{ij}^1]$ be the matrix of normalized gaps, where the typical element is defined by $g_{ij}^1 = (z_j - y_{ij}) / z_j$ when $y_{ij} < z_j$, and $g_{ij}^1 = 0$ otherwise. The entries of this matrix are non-negative numbers less than or equal to 1, with g_{ij}^1 being a measure of the extent to which person i is deprived in dimension j . This matrix can be generalized to $g^\alpha = [g_{ij}^\alpha]$, with $\alpha > 0$, whose typical element g_{ij}^α is normalized poverty gap raised to the α -power.

After defining the notation, now we provide an outline of the class of multidimensional poverty measure suggested by Alkire and Foster (2007: 77-89). A reasonable starting point is to identify who is poor and who is not. Most of the identification method suggested in the literature normally follows the union or intersection approach. According to the union approach a person i is said to be multidimensionally poor if there is at least one dimension in which the person is deprived, whereas according to intersection approach a person i is said to be multidimensionally poor if that person is deprived in all dimensions. If dimensions are equally weighted, then the methodology to identify the multidimensionally poor proposed by Alkire and Foster (2007) compares the number of deprivations with a cut-off level k , where $k = 1, 2, \dots, d$. Let us define the identification method ρ_k such that $\rho_k(y_i, z) = 1$ when $c_i \geq k$, and $\rho_k(y_i, z) = 0$ when $c_i < k$. This means that a person is identified as multidimensionally poor if that person is deprived in at least k dimensions. This is called dual cut-off method of identification because ρ_k is dependent on both the within dimension cut-offs $z; j$ and across dimensions cut-off k . This identification criterion defines the set of the multidimensionally poor people as $Z_k = \{i : \rho_k(y_i; z) = 1\}$. A censored matrix $g^0(k)$ is obtained from g^0 by replacing the i^{th} row with a vector of zeros whenever $\rho_k(y_i, z) = 0$. An analogous matrix $g^\alpha(k)$ is obtained for $\alpha > 0$, with the ij^{th} element $g_{ij}^\alpha(k) = g_{ij}^\alpha$ if $c_i \geq k$ & $g_{ij}^\alpha(k) = 0$ if $c_i < k$.

On the basis of this identification method, Alkire and Foster (2007) define the following poverty measures. The first natural measure is the percentage of individuals that are multidimensionally poor:

the multidimensional Headcount Ratio $H = H(y; z)$ is defined by $H = q/n$, where $q = q(y, z)$ is the number of people in set Z_k . This is entirely analogous to the income headcount ratio. This measure has the advantage of being easily comprehensible and estimable, and this can be applied using ordinal data. However, it suffers from the disadvantages first noticed by Sen (1976) in the unidimensional context, namely being insensitive to the depth and distribution of poverty, violating monotonicity and the transfer axiom. Where as in the multidimensional context, it also violates dimensional monotonicity (Alkire and Foster, 2007: 77-89). Alkire and Foster (2007) explain this as if a poor person already identified as poor become deprived in an additional dimension (in which this person was not previously deprived), H does not change.

To overcome this problem of multidimensional headcount, Alkire and Foster (2007) propose the dimension adjusted *FGT* measures, given by $M_\alpha(y; z) = \mu(g^\alpha(k))$ for $\alpha \geq 0$. When $\alpha = 0$, the measure is called Adjusted Headcount Ratio, defined by $M_0 = \mu(g^0(k)) = HA$. The adjusted headcount ratio is the total number of deprivations experienced by the poor ($|c(k)| = |g^0(k)|$), divided by the maximum number of deprivations that could possibly be experienced by all people (nd). It can also be expressed as the product between the percentage of multidimensionally poor individuals (H) and the average deprivation share across the poor, which is given by $A = |c(k)|/(qd)$. In words, A provides the fraction of possible dimensions d in which the average multidimensionally poor individual is deprived. In this way, M^0 summarizes information on both the incidence of poverty and the average extent of a multidimensionally poor person's deprivation. This measure is easy to compute as H , and can be calculated with ordinal data and it is superior to H because it satisfies the dimensional monotonicity property.

The class of dimension adjusted *FGT* measure also yields the Adjusted Poverty Gap, give by $M_1 = \mu(g^1(k)) = HAG$, which is the sum of the normalized gaps of the poor ($|g^1(k)|$) divided by the highest possible sum of the normalized gaps (nd). It can also be expressed as the product between the percentage of multidimensionally poor

persons (H), the average deprivation share across the poor (A) and the average poverty gap (G), which is given by $G = |g^1(k)|/|g^0(k)$. The poverty measure M_1 ranges in value from 0 to 1. If the dimension of poor person deepens in any dimension, then the respective $g^1(k)$ will rise and hence so will M_1 . Consequently M_1 satisfies monotonicity.

Finally, when $\alpha = 2$, the measure is the Adjusted Poverty Gap, and it is represented by M_2 and $M_2 = \mu(g^2(k)) = HAS$ which is the sum of the squared normalized gaps of the poor ($|g^2(k)|$) divided by the highest possible sum of the normalized gaps (nd). It can also be expressed as the product between the percentage of multidimensionally poor persons (H), the average deprivation share across the poor (A) and the average severity of deprivations (S), which is given by $S = |g^2(k)|/|g^0(k)$. M_2 Summarizes information on the incidence of poverty, the average range and severity of deprivations, and the average depth of deprivations of the poor. If a poor person becomes deprived in a certain dimension, M_2 will increase more the larger the initial level of deprivation was for this individual in this dimension. This measure satisfies both types of monotonicity and also transfer, being sensitive to the inequality of deprivations among the poor as it emphasizes the deprivations of the poorest.

All members of the $M_\alpha(y; z)$ family are decomposable by population subgroups. Given two distributions x and y , corresponding to two population subgroups of size $n(x)$ and $n(y)$ correspondingly, the weighted average of sum of the subgroup poverty levels (weights being the population shares) equals the overall poverty level obtained when the two subgroups are merged:

$$M(x,y;z) = \frac{n(x)}{n(x,y)} M(x;y) + \frac{n(y)}{n(x,y)} M(y;z)$$

All members of the $M_\alpha(y; z)$ family can also be broken down into dimension subgroups. To see this, note that the measures can be expressed in the following way: $M_\alpha(y, z) = \sum_{i=1}^d \mu(g_{*j}^\alpha(k)) / d$, where g_{*j}^α is the j^{th} column of the censored matrix $g^\alpha(k)$. Strictly speaking, this is not decomposability in terms of dimensions, since the information on all

dimensions is needed to identify the multidimensionally poor. However, once the identification step has been completed, and the non-poor rows of g^a have been censored to obtain $g^a(k)$ the above aggregation formula shows that overall poverty is the average of the d many dimensional values $\mu(g^{*j}(k))$. Consequently, $(\mu(g^{*j}(k)))/d / M_\alpha(y, z)$ can be interpreted as the contribution of dimension j to overall multidimensional poverty.

The $M_\alpha(y, z)$ family adopts the neutral assumption of considering dimensions as independent. In this way, it satisfies a property, based on Atkinson and Bourguignon (1982: 183–201), called weak rearrangement. The concept is based on a different sort of “averaging” across two poor persons, whereby one person begins with weakly more of each achievement than a second person, but then switches one or more achievement levels with the second person so that this ranking no longer holds. In other words, we can say that a simple rearrangement among the poor reallocates the achievements of two poor persons, but leaves the achievements of everyone else unchanged. This is called an association decreasing rearrangement. Under such rearrangement one would expect multidimensional poverty not to increase. This is postulated by the weak rearrangement axiom and it is precisely satisfied by the $M_\alpha(y, z)$, which will not change under such transformation. Because of its completely additive form, it evaluates each individual’s achievements in each dimension independently of the achievements in the other dimensions of other’s achievements.

We use same weights for all dimensions but this $M_\alpha(y, z)$ family can be extended into a more general form, admitting different weighting structures (Awan, Waqas & Aslam, 2011: 133–144).

3. Selected dimensions and deprivation cut-offs

This section presents the dimensions, indicators and cut-offs for each dimension used in this paper. In the following table, we summarize the question asked in PSLM 2005–06, dimensions and the cut-offs that we want to apply for each indicator in this paper.

Table 1: Different dimensions along with questions (Over all Pakistan)¹

Dimension	Questions in PSLM	Poverty line cut-off (The household is deprived if)
Housing	How many rooms does your household occupy?	Three or more than three persons are living in one room
Water	What is the source of drinking water for the household?	There is no access of clean drinking water, <i>i.e.</i> piped water, hand pump, motorized pumping/tube well, closed well
Sanitation	What type of toilet is used by your household?	Uses dry raised latrine, dry pit latrine, no toilet in the household
Electricity	Does your household have electricity connection?	If no access to electricity
Asset	Were/Are any of the following items owned by the household (List is in appendix)?	If does not own any of the following assets: refrigerator, freezer, air conditioner, geyser, washing machine, camera movie, car/vehicle, motorcycle, TV, VCR, vacuum cleaner, PC
Education	What was the highest class completed/What class are... currently attending?	Maximum year of education completed by any member is less than five years
Land	Did any of the household members own or had owned during the last one year any of the following property (List is in appendix)?	If value of property is less than rs: 300,000
Expenditure ¹	Expenditure of household on non-durables and food items	Household per adult equivalent expenditure < rs: 944.47 per month Pakistan's national poverty line
Empowerment	Who in your household usually make decision about the purchase of the following consumption items? Food, clothing, medical treatment, recreation and travel	If women is not consulted in basic decision about purchase of some basic consumption item

1 A household is considered as expenditure deprived if per adult equivalent household expenditure of this household is less than the poverty line of rs: 944.47 per month given by the government of Pakistan, according to the Economic Survey of Pakistan 2008.

4. Results and discussion

Table 2 presents the estimated multidimensionally poor headcount (H), adjusted headcount (M^0) and average deprivation (A) for different levels of cut-off, *i.e.* $k = 3, 4, 5$ & 6 . Suppose $k = 3$, result shows that more than 89% of households in Balochistan are deprived in at least three dimensions and the Adjusted Headcount Ratio (M^0) is 0.6117. Where as in case of Balochistan rural, situation is even worst as Multidimensional Headcount Ratio is almost 96% and on average these households are deprived in 6.5 dimensions, so the Adjusted Headcount Ratio in this case is 0.6974. In case of Balochistan urban, almost 65% households are deprived in at least three dimensions and the value of the Adjusted Headcount Ratio is 0.2917. Almost 67% of household in NWFP overall 71% in rural NWFP and 43.5% in NWFP urban are deprived in at least three dimensions and the Multidimensionally Adjusted Headcount Ratios for these regions are 0.6673, 0.7129 and 0.4355, respectively. More than 38% of households of urban Sindh are deprived in at least three dimensions and the Adjusted Headcount Ratio in this case is 0.1613. More than 91% of rural households of Sindh are deprived in three or more than three deprivations and M^0 in case of rural Sindh is 0.5649. Almost 63% are deprived in at least three dimensions in case of Sindh overall and the corresponding Adjusted Headcount Ratio in this case is 0.3504. More than 57% households of overall Punjab are deprived in at least three dimensions and the Adjusted Headcount Ratio in this case is 0.2952. More than 70% households in case of rural Punjab and 29% in case of urban Punjab's households are deprived in three or more out of nine dimensions and their corresponding Adjusted Headcount Ratios are 0.3760 and 0.1221. Overall Balochistan shows the worst picture, followed by NWFP, Sindh and Punjab. In urban areas of different provinces, Balochistan is more multidimensionally poor followed by NWFP, Sindh and Punjab. As far as the rural area is concerned, Balochistan is multidimensionally poor followed by Sindh, NWFP and Punjab.

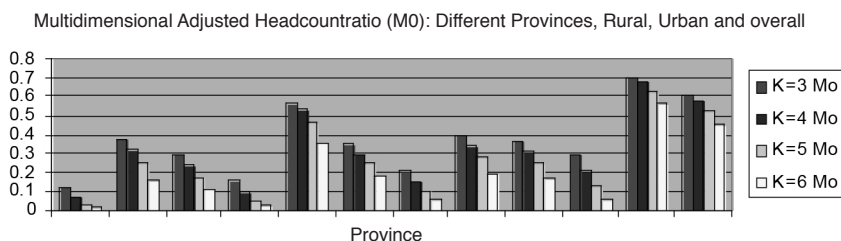
Figure 1 expresses the Multidimensional Poverty Index (M_0) at different levels of K along with the regional bifurcation. Figure shows

that rural Balochistan is the most deprived region of Pakistan, among all eight regions, for all levels of K while urban Sindh is the least deprived one.

Table 2: Multidimensional Headcount Ratio (H), Adjusted Headcount Ratio (M^0), and average deprivation (A) in rural and urban areas of Pakistan at different K values

Province	K = 3			K = 4			K = 5			K = 6		
	H	M^0	A	H	M^0	A	H	M^0	A	H	M^0	A
Punjab [U]	0.2912	0.1221	0.4192	0.1399	0.0716	0.5121	0.0584	0.0354	0.6064	0.0169	0.0124	0.7313
Punjab [R]	0.7094	0.3760	0.5301	0.5352	0.3179	0.5941	0.3654	0.2425	0.6636	0.2164	0.1597	0.7380
Punjab [O]	0.5763	0.2952	0.5122	0.4093	0.2395	0.5852	0.2677	0.1766	0.6597	0.1529	0.1128	0.7378
Sindh [U]	0.3808	0.1613	0.4236	0.1788	0.0940	0.5255	0.0791	0.0496	0.6278	0.0340	0.0246	0.7234
Sindh [R]	0.9196	0.5649	0.6142	0.8059	0.5270	0.6539	0.6583	0.4614	0.7008	0.4727	0.3582	0.7579
Sindh [O]	0.6332	0.3504	0.5533	0.4726	0.2968	0.6281	0.3505	0.2425	0.6921	0.2395	0.1809	0.7553
NWFP [U]	0.4355	0.2050	0.4707	0.2660	0.1485	0.5583	0.1568	0.1000	0.6376	0.0788	0.0566	0.7187
NWFP [R]	0.7129	0.3932	0.5516	0.5579	0.3416	0.6122	0.4071	0.2746	0.6744	0.2550	0.1900	0.7453
NWFP [O]	0.6673	0.3623	0.5429	0.5099	0.3098	0.6076	0.3659	0.2458	0.6718	0.2260	0.1681	0.7438
Baloch [U]	0.6469	0.2917	0.4509	0.3786	0.2022	0.5343	0.2036	0.1245	0.6115	0.0739	0.0525	0.7096
Baloch [R]	0.9616	0.6974	0.7253	0.9019	0.6776	0.7512	0.7878	0.6268	0.7957	0.6688	0.5607	0.8384
Baloch [O]	0.8950	0.6117	0.6834	0.7913	0.5771	0.7293	0.6643	0.5206	0.7838	0.5430	0.4533	0.8347

Figure 1: Multidimensional Poverty Index (M_0) in rural and urban areas of Pakistan at different levels of K



Dimensions of land, empowerment and housing are the major contributors to MPI in urban Punjab, while along with the three dimensions the sanitation adds up to 14% to MPI in rural Punjab. Similar is the case of province Sindh; the dimensions of empowerment, land, and housing constitute 72% of overall MPI in urban Sindh, while the same three dimensions contribute 50% to overall MPI in rural Sindh, which shows that intensity of multidimensional poverty is high in urban areas as compared to rural ones. Similar is the case with provinces of Balochistan and KPK. But in the province of KPK, dimension of sanitation is equally contributing to overall MPI.

Table 3: Percentage of poor in different dimensions in different provinces

Dimension	Punjab		Sindh		nwfp		Balochistan	
	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent
0	517	7.7	73	1.9	101	3.4	10	.5
1	1241	18.6	491	13.0	472	16.0	107	5.2
2	1367	20.5	574	15.2	529	17.9	234	11.4
3	1117	16.7	590	15.6	463	15.7	301	14.7
4	873	13.1	520	13.8	426	14.4	311	15.2
5	690	10.3	483	12.8	396	13.4	283	13.8

Continúa...

	Punjab		Sindh		nwfp		Balochistan	
6	450	6.7	477	12.6	278	9.4	245	12.0
7	297	4.4	354	9.4	204	6.9	249	12.2
8	123	1.8	177	4.7	62	2.1	212	10.4
9	7	.1	33	.9	19	.6	96	4.7
Total	6682	100.0	3772	100.0	2950	100.0	2048	100.0

5. Conclusion

This paper has estimated multidimensional poverty for four provinces of Pakistan using PSLM dataset for years 2005-06 by applying Alkire and Foster (2007) methodology. Nine dimensions were selected for this study: Housing, Electricity, Water, Asset, Sanitation, Education, Expenditure, Empowerment and Land. Results found that overall Balochistan shows the worst picture followed by NWFP, Sindh and Punjab. In urban areas of different provinces, Balochistan is more multidimensionally poor followed by NWFP, Sindh and Punjab. As far as the rural area is concerned, Balochistan is multidimensionally poor followed by Sindh, NWFP and Punjab. Results show that the most pervasive level of poverty exists in rural areas of different provinces. The analysis of contribution of each dimension in multidimensional poverty at different cut-offs showed that the major contributors are Land, Empowerment, Housing, Assets and Sanitation. This study also presents an empirical evidence of significant lack of overlap in the identification by the monetary and multidimensional approach in the case of Pakistan.

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Annexure

Table 1: Dimension wise deprivation of Punjab province

Urban Punjab					Rural Punjab			
Dimension	k =3	k =4	k =5	k =6	k =3	k =4	k =5	k =6
Electricity	0.017	0.025	0.033	0.066	0.046	0.053	0.064	0.080
Water	0.010	0.008	0.009	0.013	0.015	0.014	0.011	0.011
Sanitation	0.038	0.054	0.076	0.113	0.144	0.151	0.151	0.143
Asset	0.097	0.131	0.149	0.140	0.143	0.150	0.149	0.144
Housing	0.228	0.193	0.165	0.149	0.145	0.140	0.136	0.134
Education	0.081	0.105	0.123	0.131	0.092	0.100	0.108	0.117
Expenditure	0.068	0.0950	0.1031	0.104	0.060	0.068	0.077	0.089
Empowerment	0.220	0.179	0.159	0.129	0.160	0.146	0.139	0.130
Land	0.23	0.206	0.181	0.147	0.190	0.174	0.159	0.147

Table 2: Dimension wise deprivation of Sindh province

Urban Sindh					Rural Sindh			
Dimension	k = 3	k = 4	k = 5	k = 6	k = 3	k = 4	k = 5	k = 6
Electricity	0.015	0.023	0.037	0.059	0.062	0.066	0.074	0.085
Water	0.031	0.034	0.033	0.028	0.032	0.034	0.037	0.044
Sanitation	0.038	0.061	0.090	0.121	0.154	0.155	0.151	0.144
Asset	0.085	0.124	0.141	0.139	0.133	0.140	0.145	0.142
Housing	0.231	0.192	0.165	0.139	0.143	0.137	0.131	0.127
Education	0.069	0.097	0.113	0.125	0.072	0.076	0.082	0.092
Expenditure	0.042	0.065	0.075	0.087	0.061	0.065	0.070	0.078
Empowerment	0.249	0.201	0.171	0.149	0.169	0.160	0.151	0.140
Land	0.235	0.200	0.172	0.151	0.169	0.164	0.155	0.144

Table 3: Dimension wise deprivation of NWFP province

Urban NWFP					Rural NWFP			
Dimension	k =3	k =4	k =5	k =6	k =3	k =4	k =5	k =6
Electricity	0.005	0.007	0.010	0.016	0.020	0.022	0.028	0.035
Water	0.041	0.047	0.046	0.061	0.079	0.084	0.089	0.098
Sanitation	0.075	0.084	0.095	0.119	0.140	0.145	0.144	0.140
Asset	0.108	0.132	0.138	0.128	0.139	0.143	0.142	0.137

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	Urban NWFP				Rural NWFP			
Housing	0.195	0.169	0.155	0.136	0.147	0.140	0.134	0.129
Education	0.083	0.097	0.110	0.121	0.072	0.077	0.083	0.092
Expenditure	0.083	0.099	0.112	0.114	0.062	0.066	0.073	0.081
Empowerment	0.218	0.189	0.170	0.152	0.182	0.166	0.155	0.143
Land	0.188	0.172	0.159	0.149	0.156	0.153	0.148	0.141

Table 4: Dimension wise deprivation of Balochistan province

	Urban Balochistan				Rural Balochistan			
Dimension	k=3	k=4	k=5	k=6	k=3	k=4	k=5	k=6
Electricity	0.013	0.014	0.015	0.024	0.100	0.103	0.107	0.112
Water	0.038	0.047	0.057	0.041	0.095	0.096	0.098	0.101
Sanitation	0.134	0.142	0.141	0.133	0.145	0.142	0.136	0.130
Asset	0.087	0.115	0.135	0.145	0.112	0.114	0.119	0.123
Housing	0.166	0.148	0.136	0.137	0.110	0.110	0.109	0.106
Education	0.057	0.063	0.082	0.105	0.090	0.093	0.097	0.102
Expenditure	0.072	0.090	0.096	0.115	0.061	0.062	0.065	0.068
Empowerment	0.224	0.186	0.161	0.146	0.141	0.136	0.129	0.123
Land	0.205	0.191	0.173	0.150	0.142	0.139	0.135	0.130

Table 5: List of assets

S. No.	Assets
01	Refrigerator
02	Freezer
03	Air conditioner
04	Air cooler
05	Geyser
06	Washing machine
07	Camera movie
08	Cooking range
09	Car/vehicle
10	Motorcycle
11	tv
12	vcr
13	Vacuum cleaner
14	pc

Table 6: List of property items

S. No.	Property
01	Agriculture land
02	Non-agriculture land
03	Residential building
04	Commercial building