

## IMPACT OF DIFFERENT MODELLING APPROACHES TO EVALUATE PUBLIC POLICIES: The case of entrepreneurship in Central Mexico

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### Abstract

Different approaches can be used to model public policies. These models may be useful to evaluate such programs. Several of them are explored and illustrated through different entrepreneurship initiatives implemented in Central Mexico.

**Keywords:** *Entrepreneurship, modelling, public policies evaluation, communities' viability.*

### 1. Introduction

There is an extended conviction that policy failures are rooted in poor quality sources of information; which, if improved, would result in superior decision making processes (Ackoff, 1967). Following this principle different governments and regulatory bodies have proposed to conduct better informed evaluations about their interventions by setting measurable targets – see at the websites of the European Commission, Presidencia de la Republica (Mexico) and FAO among others. This may be useful for analysing unique interventions. However, during the last years, one of the challenges in public analysis has been to evaluate the impact of ‘re-entry’, situations where previous outcomes are reintroduced as inputs in future interactions. This demands the development of an acceptable theory of weighting (Hardin, 1968), one able to support decisions that allow identifying how many resources should be allocated and in which way should be organised to accomplish certain expectations. It also involves looking at public policies from a dynamic perspective. None of them are trivial questions, and their combination is a complex task to deal with. Reasons for this are several. First, previous solutions are not perennial resources for the future. External sources of variation react to public interventions, and they may even become immune –e.g. criminal behaviour. Second, the balance between needs and resources is not stable through time; in fact

when needs are fulfilled others appear (Vahl, 1994). Finally, different perspectives, understandings and descriptions may collide and transform decision-making processes into swampy exercises.

To link public policies development with messy, confusing problems that defy technical solution has been a recurrent image (Hardin, 1968; Rittel & Webber, 1973; Rosenhead, 1992). ‘Non-technical problems’ are the result of situations where no unique problem definitions, nor solution routes, can be defined and designed (Hardin, 1968). One possibility to deal with these types of problems is to reckon differences between current states and desirable futures, and define actions that close the gaps (Ackoff, 1999). Unfortunately this approach has multiple points for friction. First, it is not easy to achieve consensus about current and desirable states. There are many instances that illustrate the difficulties for Governments to communicate the reasons and ways for implementing certain policies to their constituents; this because their different origins, life experiences, expectations, and capabilities. Second, stakeholders’ ownership for problems is usually part of the solution, as they are the internal sources for variation that might deal with external disturbances (Beer, 1985; Vahl, 1994). Third, even if problems and solutions are consensed, their implementation can be blocked by partisan zeal –e.g. everyday newspapers are full of examples. Finally, there are ‘hidden agendas’ of those who are looking profit from others’ failures.

This document discusses different ways to overcome these difficulties by looking at different approaches to model public policies and interventions that intend to provide supportive knowledge for private entrepreneurships at the local level. We illustrate the discussion by means of different public entrepreneurship programs implemented in Central Mexico. Finally, some recommendations for future action are distilled from this discussion.

## **2. Different purposes for modelling**

Pidd (2010) proposes to look at a model as “...an external and explicit representation of part of reality as seen by the people who wish to use that model to understand, to change, to manage, and to control that part of reality”. In terms of public decision

making there are different situations that may trigger in us the interest to develop a model. First, we may build models for automated decision making (Pidd, 2010). This demands events that behave as if they were ‘closed systems’ – i.e. those that do not introduce additional variety – ‘noise’. Closed systems can be subjects for an exhaustive research (Churchman, 1971). In order to do so, every source of variety has to be recognised and its impact established; if this is possible, then its behaviour can be fully manipulated through well-bounded procedures. This has been recognised by traditional control theory (Ashby, 1956). One of the main advantages for using automated decision making is that it helps to bypass human error. The obvious limitation is to find closed systems in the social domain, as human interactions modify variety by increasing or reducing it (Beer, 1985). Beer proposes the use of ‘attenuators’ for its reduction, and by doing so to encapsulate real-world situations into the boundaries of closed-output systems – i.e. systems that have the same output whatever the input is. Interestingly enough bureaucratic procedures and regulations result in closed-output systems. In the context of entrepreneurship policy making in Central Mexico, there are many programs that follow this kind of modelling –i.e. to identify common needs and offer prefabricated solutions that match them. Instances of these automated decision making models to support entrepreneurs are the Productive Investment Projects (*Proyectos de Inversion Productiva*), in both of their versions – i.e. First and Second Generation, PIP and PIP/2G respectively. PIPs pretend to generate long-term jobs through the creation and consolidation of rentable productive projects by means of technical-administrative advice, and financial resources for tools and equipment. PIP/2Gs provide additional working capital to consolidate business and jobs generated by PIPs. Both programs introduce criteria for applicants’ eligibility and the amounts they may aspire. If individuals and projects fulfil the criteria then resources are approved and channelled.

Pidd (2010) links the second role of models to routine decision support. This is done by transforming public interventions into ‘routines’. When we have a successful experience, it might be repeated if we were cautious and recorded the implemented action. This implies to codify, transfer, and reuse knowledge, which can be used as a guideline for expected or desirable behaviours. In relation to entrepreneurship in Central Mexico we may see cases that follow this same principle. For instance, the State of

Guanajuato supports different models to develop and support new entrepreneurs. Universities and training centres develop their own models, which consider 'best practices' up to date, and add others' previous experiences. The intention is to provide new potential entrepreneurs with the necessary skills to incubate and run successful business. *Tecnológico de Monterrey* is a Mexican private university that runs one of the most recognised governmental approved incubation models. It consists of three stages: Preincubation, Incubation and Postincubation. During preincubation a business plan is developed and the business is legally constituted. The incubation provides facilitation and guidance for the new business implementation, operation and development. Finally, postincubation provides support and follow-up for the business to achieve consolidated growth in the market. Different services are provided through these stages. For instance they give advice in areas such as management, marketing and sales, accountancy and finance, international commerce, legal issues and technology. Other services they offer are training, business networking, identification of investment opportunities, and links to research centres and laboratories associated to *Tecnológico de Monterrey*.

A third possibility is to introduce models to investigate and design improvements (Pidd, 2010). There are many instances of this kind in the academic literature (Taylor et al., 2009), and not being entrepreneurship research an exception (Cornett, 2009), both Authors decided to use it for evaluating a public entrepreneurship program in Jaral del Progreso in the state of Guanajuato. This city with 25 thousand inhabitants is located in one of the richest agricultural areas of Central Mexico. However, poor wealth distribution pushes their inhabitants to migrate to US. A similar situation phenomenon was studied by Kandel & Massey (2002). They analysed different factors to describe the intentions of Mexican rural adolescents of Zacatecas to migrate to the US. Their results linked five different aspects that showed statistical evidence in relation to the propensity of youths to migrate. Due to similarities between the objects under study the Authors considered the possibility to extend this model. Our survey was consistent with Kandel & Massey results and, interestingly enough, a by product finding was that the desire of living in the USA by students from Jaral del Progreso decreased 3.7% for every year they make. In this sense, if something was to be done in order to reduce migration, it seemed more effective and efficient if it would be targeted to the youngest. This implied

massive changes in current entrepreneurship governmental policies. To support rural communities' viability, teenagers should be targeted. An instance of changes on this paradigm is the program for rural young entrepreneurs developed by the municipality in cooperation with the Institute of Sustainable Social Development (Instituto de Desarrollo Social Sustentable, IDeSS) from the Tecnológico de Monterrey.

Following Pidd (2010), a fourth possibility to use models is to gain insights. The conversational act of modelling may introduce variety. Different viewpoints are presented, discussed and consensed, and by doing this strengthen links between the participants and trust achieved. Different tools and methods have been used to support the developments of strategies for this intention (O'Brien, 2011). This kind of modelling has been proposed also for studying entrepreneurship as a complex dynamic phenomenon (Levie & Lichtenstein, 2010). However, the Authors have found no evidence of the use of this kind of modelling in the development of entrepreneurship supportive policy making by Central Mexico authorities.

### **3. Recommendations**

We followed Pidd's taxonomy to show different models of public policies that support entrepreneurship activities in Central Mexico. We identified the most common routes, which are automated and routinised processes for decision making. We also recognised other modelling instances related to investigation and improvement, in their early stages though. We made evident that participatory modelling exercises to gain insight are not considered. It seems to be no direct link between governmental authorities and potential beneficiaries. If public entrepreneurship programs want to be inclusive, then 'outliers'— i.e. the unattended and the weak - must be recognised and listened. This demands to develop additional ways of communication and interaction that go beyond attenuation. The notion of re-entry has to be incorporated in future discussions and developments.

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