

Scientific research methods and methodologies of research applied in the professional training of the public administrator

Abstract

The recurrent call for content, elements, and parameters of the methods of investigation against either applied research methodologies oblige to analyze the context faced in the professional formation of sciences and disciplines, notably in public administration. The Multicriteria analysis and Designing Process, outline the work of the one and the other in a complementary manner. Scientific research methods are unique to science and are not easily transportable to other scenarios. Applied methodologies, by arranging as known elements and practical ways, recompose the restrictions that the methods present. Rigorous combination of both orients the role that must comply with the methodology and methods analysis and, not reference chapter. Both are different and their combination requires a greater effort.

Keywords: science and methods, knowledge and uncertainty, research laboratories, research methods and methodologies of research, field work

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Introduction

The diffusion of research, as scientific methods or applied methodologies, depends on the extended field to carry them out effectively. The support of the scientific method must establish formal arguments and criteria, validated by laws and by theories in terms of methodologies. The first resource requires contexts, spaces and laboratories in which to deepen this resource. The second requires configuration, establishment and implementation in order to be considered valid. If the requirements in both cases are not met, it is not clear that the goals of scientific research, let alone applied research itself, can be effectively achieved.

The scientific method responds to formal structures that from mechanisms such as trial and error and/or observation, raises the criteria that make possible the advancement of basic, exact and natural sciences, pretexts on which analysis, dedication and depth is an imperative. Therefore, when considering the convenience of adopting the method, it must be considered the fulfillment of the minimum criteria and elements that this bet demands. Hence, it is necessary to question the place of the scientific method in areas or disciplines where rules and principles are confused with purposes and functions that do not allow formulating, modeling, proposing, proposing or validating.

The research methodology is the sharing of a development that, in addition to achieving validity, ends up compiled and generalized in different presentations. The approach to this type of initiatives combines with the possibility of illustration and mechanization that, just by identifying them, allows to know the task and the results that can be obtained with them. Although they may have their origin in the analyses provided by research methods, their availability as a tool for other areas, disciplines and careers, they appear as forms that can establish work roadmaps, but of course, not with the level of demand and experimentation of the former.

The keen interest in distancing methods and methodologies has allowed interpretations underlying both to emerge without much task or purpose. The derivation into qualitative and/or quantitative areas in a differential manner is not clear. In turn, from the experimental ones,

a priori or ex-ante, it demands a full recognition of the methodologies that would apply in this respect, since the mere allusion in one or the other case is arbitrary, when research mechanisms are assumed as methods and in passing the category is elevated to formal or informal if it contains data or assertions respectively. Both resources are necessary to support the principles of research.

The interest in promoting the approach to research in undergraduate and graduate teachers is full of misunderstandings when it comes to consecrate the effectiveness of this context. Research methods respond to consolidated criteria of the basic, exact and natural sciences, different from methodologies that respond to designs, schemes, forms and processes with which it is intended to clearly and/or directly evidence an explanation or fact. If the failure emerges from the way this resource is offered, the evaluation to fulfill those mentioned with the basics of both topics, besides an erroneous application of both, ends up being useless.

It is relevant for the continuous improvement of research processes that the components referred to here are addressed. Therefore, the article contains the following structure: 1. An analysis on the basis of research methods and methodologies for academic development; 2. The structure of combination of both criteria to support a scientific and/or professional research project and, 3. The definition of tools and instruments in the field, which encourage complementary and/or individual exercises, for the case of public administration.

Fundamentals of research methods and applied research methodologies for academic development

The differential structure between research methods and methodologies implies a careful review of what is involved in each case to address some issue. The scientific method characteristic of the basic, exact and/or natural sciences is too demanding with the component of methodological design, hypotheses, field and/or laboratory tests and results. Unlike the methodology that commonly exposes explicitly and they should be, the task and the purpose evidenced exclusively in an expected result. However, they are assumed in an indifferent way at the time of their implementation Figure 1.

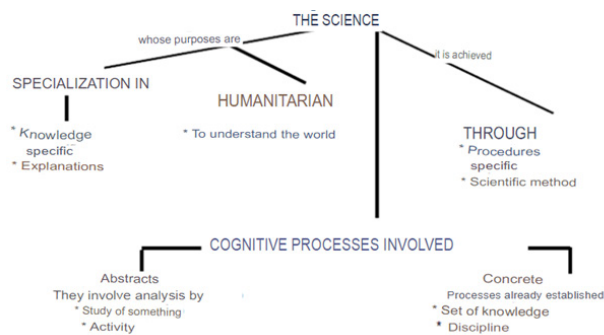


Figure 1 Purpose of Science.

Note: Domínguez.¹

The scientific method in context obeys the nature of scientific research, in which the constant evaluation and assessment of hypotheses and methodologies is a premise. The use of figures, data, statistics, samples and parameters constitutes a fundamental link to establish the arguments and criteria with which to consolidate an idea if it is a theory that admits discussion and even demands depth or to validate a law, if the intention is to test already proven principles and foundations to raise hypotheses or, failing that, to propose different scenarios or proposals that link this exercise Table 1.

Table 1 Components and elements of the specific competence “to apply the scientific method to solve problems in laboratories in the field of science and technology

Components	Elements
Measure/Acquire	To acquire data, experimental or of any other indole. * Systematically and reliably record and document data, results and conditions of the experiment. * Correctly express results and data * Use tools or instruments necessary for the realization of previously calibrated experiments
Experiment	* To propose and test hypotheses * Apply the instrumental techniques or basic laboratory operations * Plan, design and execute experiments, prototypes, protocols, and/or scientific and technological research * Manage the data obtained, representing and analyzing them correctly Analyze data statistically and assess the reliability of the results obtained
Modeling	* Propose and choose mathematical models (analytical and/or numeric) describe the experimental results * Calculate or estimate the limits of the chosen model and adjust it with the data. Establish the limits of the model, analyzing and discussing the validity of the models (Extrapolation and interpolation ability influence of external factors or variables etc.) * Validate or verify, through observation/experimentation, the models proposed
Project/Predict	* Use the obtained model to make predictions, simulations and calculations in cases of interest. * Establish the confidence or stability of the prediction * Optimize the means for the execution of the experiment or research. * To argue the results and draw conclusions.
Decide	* Assume no risks based on confidence in the model and predictions. * Make decisions based on the conclusions and feasibility (technical, economic, etc.) of the proposals. * Communicate, expose and defend the conclusions and decisions made

Note: Cadenato et al.⁸

The rigorous review of each step taken by the research methods is opposed to any ex-ante or empirical assertion that may deviate from the purpose of the proposed research (study or research). The formality that characterizes the processes elaborated on account of the scientific method does not pretend to reproduce academic findings without a concrete review of their specificity and usefulness. The profile of these works consists precisely in delivering advances, discoveries, improvements and impacts that can leverage or serve to already consolidated processes in other areas of science or in specific topics. Without discarding that they do not necessarily end up being successful.²

In this system there is a demand for an enormous quantity of so-called scientific products; they are appreciated in the most diverse ways, and a part of the goods that actually come from productive work is spent on them, but this implies nothing with respect to their own productivity also the idleness of certain sectors of university activity, as well as empty ingenuity, the metaphysical and non-metaphysical formation of ideology have together with other requirements arising from the antagonisms of society, their social importance without in the present period being really adequate to the interests of some notable majority of society. An activity that contributes to the existence of society in its given form does not in any way need to be productive, i.e. to create values for a company (p. 24).

By raising the research capacity and culture of the scientific method in HEIs, it is counterproductive in relation to the way in which the work is carried out, particularly in those that have not been able to solve the binomial relationship between teaching - research or development - innovation, in which, in a cursory manner, scarcely more administrative efforts are attended to under the umbrella of formative research or seed groups, epicenters for which the balance is not very fruitful in terms of promotion and reproduction of the elements required by research. The low participation of graduate students from these seed groups in the research groups is only a point of reference (Figure 2).

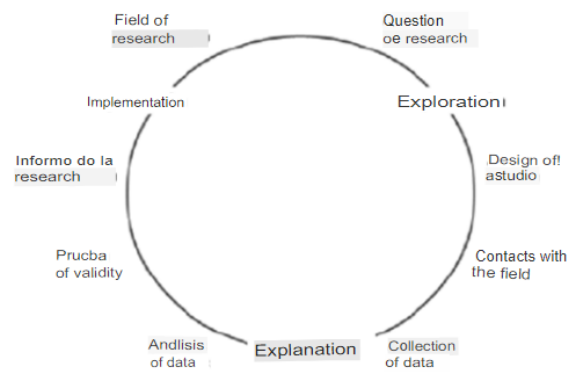


Figure 2 Public administration application.

Note: Gürtler.³

The profile of scientific researcher or modeler of efforts in science in any of its versions, applied or investigative, has no effect as long as the approach to the subject goes through the review of a subject that only has the scientific component as the only epilogue to it. And if we add to this, that most academic efforts do not have a clear content on methods or methodologies on which, in addition to seeking to achieve the objective of the study or the proposed work, evidences the transcendental nature of knowing the method or methodology to achieve it, what prevails is a state of investigative levity, without essence.⁴

Aware of this background, the problem of designing, implementing and validating training strategies for research at the University is approached conceptually and methodologically, seeking generalities and specificities. The conceptual work starts with the establishment of consensus on the terms and meanings that are shared by the academic community. Thus, the term “*research training*” is adopted to refer to the set of actions aimed at favoring the appropriation and development of the knowledge, skills and attitudes necessary for students and professors to successfully perform productive activities associated with scientific research, technological development and innovation, whether in the academic or productive sector (p.190).

In the meantime, the lack of knowledge about research methods and methodologies, both scientific and applied, leads to the intermingling of efforts between them without logical bridges to explain the reason for the accompaniment, derivation or separation. In this sense, the call for qualitative or quantitative methods, under discredit between them, goes against the broad and holistic sense of scientific research, protected by the possibility of not isolating or disengaging from any possibility. Unlike other areas, fields or disciplines in which one of them is accepted without a clear explanation, let alone the reason for the abandonment of the other method or, failing that, the non-applicability of the method itself.⁵

The dilemma between qualitative and quantitative information merited only a few reflections, since the research discussed was exclusively qualitative; I did not use surveys nor did I base my conclusions on statistical data. As a general rule, I believe that using one or the other type of information depends on the nature of the topic, the questions asked in the research and the availability of data and/or access to sources. An essentially qualitative research can be very relevant even if it totally lacks quantitative data, as long as it manages to construct a plausible argumentation, which allows interpreting or explaining the studied phenomenon in a plausible and convincing way (p. 23).

When locating the research in one method against another or when compiling it under a single perspective, the sustainability of the same must be broad and concise. Resorting to a particular method does not exempt the responsibility to investigate or inquire about identified or similar researches on which other methods or methodologies have been extended. The researcher’s task consists precisely in keeping in mind other efforts, rather than for the contravention; to be clear about the parallel scenarios in which the study, research or problem is inscribed, and which require equal observance, even if it is not part of the central object of work, but which clearly makes inferences about the open and complex purpose of the subject to be known.⁶

One of the main meanings of the university is its contribution not only in professional training but also in research in various fields and forms. However, the university panorama shows critical aspects regarding the development of the research dimension. This segment of professionals studying master’s and doctoral degrees is precisely one of the most strategic in the formation of research capabilities of professionals. On the other hand, we have not been able to read studies on the quality of the theses of the percentage that do graduate (p. 2).

The reification of research is not inherent to the usefulness of the market that is intended to be given to it, but to the way in which the idea related to the goodness of one method over the other is exposed without a verification, even if not in the origin of the project itself, under the possibility that in terms of its development it allows exposing the accesses and exits that other methodical or methodological proposals could open or close. However, the weakness of this task, particularly in the methodological field, is that, in many investigations, these

are not configured as their own content, but as a mere assertion of a resource, which are not necessarily evident or potentiabile in the development of the same.⁷

A new scheme of knowledge production, within the framework of research centers, whether university, governmental or mixed, implies a revision of management structures that impede interdisciplinary collaboration, the crossing of frontiers and the search for an integrality of knowledge. The flexibilization of university structures to promote the meeting of disciplines and the establishment of certain practices are essential to open a space for interdisciplinary research. This includes the recruitment and promotion of teachers, budgetary organization processes, and even meeting spaces provided by the physical plant (p. 168).

The work path to strengthen research methods and methodologies goes beyond the substrate of contents on which the academic subjects are served. As long as they do not effectively configure the method or methodology that will guarantee the approach to them, the transmission of information will continue to grow. Incidentally, the effectiveness of the courses is very unlikely when they do not involve in their parameters the basic aspects related to the performance of the subject matter in the areas and methods of research and, accordingly, of the capacity they have to be available as sources and working tools (Table 2).

Table 2 Theoretical Framework, Fundamental Element in the Scientific Research Process

Research framework of reference	
The research to be carried out should take into account the previously constructed knowledge, because this it is an already existing theoretical structure.	
Theoric Framework	Marco Teorico Referencial
Description of the theoretical elements proposed by one and/or by different authors and which allow to the researcher to substantiate his or her research.	
Conceptual Framework	
The researcher defines and delimits according to his criteria and according to its theoretical framework concepts involved in the research variables.	

In: Rivera.⁹

The crossing of conceptual, referential and theoretical elements becomes an essential topic not only for the illustration of the methodological and methodological scenarios from which an attempt is made to approach some task. The knowledge and recognition of these as points of reference for the formulation of research or projects represent the solid base on which to recreate in an exponential way the elements required at each stage of the research. Although there are several ways to present them, it is the thickness and firmness of the research content that supports the work achieved in classrooms, research laboratories or in the field work itself, scenarios that without theory end up being of little use.

Structure of a scientific and research project from research methods and application methodologies

The scientist’s own research method covers specific areas of knowledge and knowledge of specific order. Although they have general intentions, their support is only recognized by peers involved in each relevant reality. As for methodologies, the approach to them is much more general and attracts different stakeholders to appropriate it according to their own consent or version. The method deploys

fields whose nature lies in the solution of general problems located in the environment and, which normally attract enormous efforts and resources, equivalent to the stated purposes. Gonzales (2011) considers:

At present, knowledge is an information problem in which the important thing is not so much how to access it, but how to use it. In other words, we either produce knowledge or we consume it. Hence the need to strengthen research processes in the university, since, at the risk of not being at the forefront of knowledge production, we would have no choice but to be gregarious of the material produced in other latitudes and contexts or, in the best of cases, the vain resignation of adapting such productions to our specific needs (p. 73).

The scientific method addresses both qualitative and quantitative components, since the dimensions they handle stage different behaviors of the object or purpose of study. It is much broader when contemplating research activities with methodology versus processes and results. The questioning and rethinking is a constant of the scientific activity, prologue, which induces to review in detail all the details of the project undertaken from beginning to end. It is forceful at the time of evidencing advances, findings or results that do not necessarily compromise the research, but the expectations drawn in

front of the subject, since it is more exposed to the evaluation and assessment of deductive and inductive processes.¹⁰

The fundamental problems faced by humanity force us to study them as a whole, demanding the participation of all the potentialities of human knowledge, and requiring to approach them as complex, inseparable and feedback; in such a way that the need arises to address an integral and interdisciplinary vision to solve them, which raises changes in education and research with new inter- and transdisciplinary approaches (p. 165).

The methodological choice obeys more to a determined criterion and to specific purposes at the time of evidencing the results. In most of the things, it marches on safe ground and its representations obey illustrations based on previously undertaken works. The skill on the matter lies in approaching, raising and materializing documentary, narrative and propositive information about fields that could well have another type of treatment, although in essence it does not imply solving anything new, but it does imply rethinking practical improvements, new designs or prototypes of methodologies that may serve for consideration or replication in the interest of having some commonly mediated application (Table 3).

Table 3 Research questions

Topics	Issues
Performance studies	Is student learning improved? Are professional skills being improved?
Studies on strategies and methodological teachers	How to design learning environments cooperative? How to select the types of methodologies more suitable? Are there more effective methods for classes of large number of students
Studies on the use of ICTs	What are the effects of using media technological in teaching-learning? What are the effects of semi-presence Which technological tools are more they suitable for cooperative learning?
Studies on the profile of students	What type of learning are used by current students? How do move students learn income? How to determine the learning styles adults?
Studies on evaluation systems of the leanings	What alternative forms of assessment can I use? How to use evaluation to promote a good learning

Note: Gros.¹¹

The use of methodologies is usually the responsibility of the research personnel, who, at the head of a project, are accountable for objectives that achieve the purpose of results if they become evident. However, the subtle discrepancy created by the fact of not knowing how far an activity should be taken, whose only attraction is to increase the academic literature on the topic promoting research. The production in this case should not only involve the elaboration of academic works, but also their articulation with the environment, in order to finally allow access to different entities to take charge of the results or to sponsor the continuity of the project on the basis of showing that the activity had an effective impact.¹²

Reading, writing and oral expression are concrete manifestations of language that cross all the discursive practices of academic culture: research, conferences, colloquiums, dialogues among peers, exams, theses, essays and scientific articles. All three designate concrete actions or practices that occur in learning contexts and for specific purposes: taking an exam, making a presentation in class, sustaining a thesis, publishing the results of a research project or participating in a debate. What is important is not reading or writing per se, but what teachers and students do with them, how they appropriate and

use reading texts or their written productions to think and learn better. Rather than nouns, which designate abstract linguistic concepts or objects of study, it would be more accurate to translate them into their verbal forms: reading, writing, speaking (p. 2).

The development of scientific research according to methods depends on the character on which it is inscribed. Some obey global agendas circumscribed to issues related to the welfare of humanity and others to the improvement of planetary conditions. Namely, the methods are constituted by parameters commonly related to fields in which, in addition to titles, knowledgeable experts in the matter are required and that at the time of their achievements, the fruits of the research are perceived even in the absence of brilliant results at the time of exposing them or disposing them to the environment, who for the sake of the phenomenon of study catalogs them as progress or discovery.¹³

Therefore, research on governmental and administrative affairs must simultaneously consider basic and applied research. One and the other are neither unrelated nor distant. They are a distinct unit with their own objects, problems, methods and methodologies.

Currently, research in public administration must be directed towards the discovery of new horizons that will strengthen its identity and theoretical status within the framework of the social sciences. It is a question of a reinforcement where research in public administration allows obtaining results that identify it by its observable, empirical, pragmatic and technological elements (p. 293).

The scientist is interested in developing inventions or inventions with which to improve the quality of life in many fields, a path in which the achievement of the patent or the approval for the commercialization of the results in the starting point of the obtained scope. The researcher approaches hypotheses, research and methods, accepting them as a constant of his work to validate or reject phenomena already evaluated, but on which he considers there is a possibility of improving what has been obtained or reproduced. For the former, the method is crucial and central; for the latter, it is a means to evaluate conjectures or hypotheses. Therefore, the structural stage of the project must be consolidated and not only measure the achievement of the objectives without the evaluation of the hypotheses and methodologies, among others.¹⁴

As we have already pointed out above, the qualitative researcher seeks to know the phenomenon he/she is studying in its natural

environment, being the researcher him/herself the main instrument for the generation and collection of data, with which he/she interacts. Therefore, throughout the research process, the qualitative researcher must reflect on his/her own beliefs and knowledge, and how these can influence the way of conceiving the reality of the subject/object of study, and consequently, influence the research itself. This aspect will be dealt with in more depth in subsequent chapters, when the topic of the researcher's reflexivity is discussed (p.1).

Recognition of the scientific method is valid to the extent that it is reproducible in its entirety. Otherwise, it has more weight to bet on the inculcation of methodologies at any level due to its degree of exposure. However, the path in either direction must be clarified, precisely to avoid the biases that accompany them in a tangential way, and which, in an attempt to achieve some kind of recognition, take refuge among them, but without achieving any forceful purpose in the matter and of little use when it comes to calling for a review of the effective results in them. The structure of the projects in the version of the methods obeys to problems of a global nature confined to fields that society considers relevant. Engineering, the environment, medicine and health, whose foundation is not only emptied according to their rigorosity, but also to their exposure and resource requirements (Table 4).

Table 4 Compilation of Scientific Analysis of Public Administration

Compilation of approaches

It is frequently stated that Public Administration is suffering a crisis, that it needs a proof of its efficiency, a general theory and a scientific paradigm that shows the perspective and methodology that the discipline brings to the study of its particular phenomenon. The fundamental problem has been the lack of a core of knowledge adjusted to the administrative, organizational and program development aspects of government, without getting lost in the labyrinth of temporary scholarly fads and interdisciplinary activity, a problem that has been present in the discipline since Woodrow Wilson began the study of Public Administration more than a century ago. of a century (212-213).

Whether the best way to study public administration is in an interdisciplinary way has been at the center of the discussion of administrative science.

Lewis Mainzer argues that the interdisciplinary approach has undermined the search for a central theory of public administration. "Two aspects prevail in the literature of public administration: a) the contemporary study of public administration containing ingredients of theory; and b) public administration is an interdisciplinary study, not simply a discipline or subdiscipline with a core theory (paradigm). The central argument is: public administration can be normatively grounded in political science! (213).

In the 1960s R. S. Parker had declared the end of public administration for lacking a defined scope and a distinctive technique: "no science can be identified by that title", for not being a coherent intellectual discipline that establishes itself as systematic thought? Absent any scientific foundation - Parker asserts - public administration must become fully the "administrative career" of government that draws from various disciplines as varied as sociology, political science, economics, law and organizational theory. Parker's statements drew a spirited response from Gerald Caiden. First, Caiden shows that public administration cannot be disregarded as a science if at the time of the critique it does not qualify as such, but as an intellectual discipline. Secondly, there is [oo.] Confusion between the study of the object and its content. The study of political science does not necessarily produce practical politicians: why should the study of public administration produce professional administrators? [...] public administration can be studied systematically without making the student a practical administrator (215-216).

In the 1950s there was confidence in the development of public administration. A year after Waldo's work, *The Study of Public Administration*, the author expressed doubts about the soundness of the discipline. "In the same vein, also in 1956, Frederick Mosher pessimistically expressed his opinion about public administration: "Is there a field of public administration, is there such a discipline? If it exists, what is its scope, its standard, its method? I am not sure that either of these two questions can be answered. Public administration has a genetic, yet logical, and even - in certain academic circles - organic relationship with political science. It is always loosely and sometimes intimately related to business administration (217).

At the end of the 20th century, Public Administration faces new challenges to establish itself as a discipline and to sustain its scientificity, much questioned throughout its history, but which has the necessary origins to avoid getting lost in the immediatist and efficiency doctrines that desire quick results without deep theoretical questioning. The claim that Public Administration is only a technical and professional discipline significantly reduces the pretensions of its necessity as a discipline. This reductionism becomes dangerous and ruthless in the face of a subject that has a history, has a theory yet to be systematized, and requires a new defense of its existence. (227)

Note: Own elaboration. Compiled from Sánchez.¹⁵

The Public Administration must open the space to analyze, conjecture and evaluate the qualities and conditions to place itself at the level of scientific research properly referred or to the articulation of methodologies as mechanisms to intervene in more elaborated activities within the framework of consultancies, studies or trends. The definition of the object of study itself, the research subject(s) and the results expected outside a framework of authors, intellectual and productive own, is necessary, precisely to glimpse one or the other

path, which, although interposed or superimposed must respond to the basic postulations of what it implies to be among the methods or methodologies.¹⁶

In public administration, as in any field of knowledge, research occupies a relevant place. This is due to the fact that existing knowledge is a relevant part of the framework of science, but not necessarily its essential portion, which lies rather in the progressive

contribution that each current scientific development leads to future developments. Its essence lies in the investigative activity, i.e., the excitement to investigate.¹⁷ Since science is a speculative enterprise that develops continuous advances into the unknown, if the search for knowledge ceases, its essence dissipates. For science does not consist only in compiling what is known, nor in arranging it in schemes of thought, but in advancing towards something unknown in order to try to reveal it: science is the discovery of things (p. 84).

The scenario provided in the classrooms, studies, field work and delivery of progress of initiatives must account for the quality and own conditions to gradually establish certain foundations that allow the spontaneous procreation of research. The introduction on the subject depends on the meridian clarity of each one of the strata on what it implies to raise the research culture from the formalization of the processes arranged in the teaching. Consequently, the works must emulate the criteria, foundations and lines defined by the school of administration and must also go through the observance of the related research groups.¹⁸

In the field of knowledge management, the call for sectorial basic research projects of the National Council for Science and Technology contemplates as one of the impact factors the search for consolidation of the academic bodies or scientific research groups involved, demonstrating the existence of teamwork and consolidation of results expected from this interaction and, if applicable, their integration in cooperation and academic exchange networks (p.11).

What must be delivered in a scientific or applied research work through the scientific method or methodology is the broad development of the objectives, verified by the hypothesis and effectively contemplated by the review of the applied methodology. In synthesis, if a project has three objectives, this development is the state of the art of the work, which then must pass to the consideration of the hypothesis, which merits another productive effort, and if it continues in this respect with validity, the methodological path promised to achieve more than the achievement of the objectives, the effective verification and in evidence that what is analyzed can be observable or replicable (Figure 3) must be considered (Figure 3).¹¹

account of the elements that characterize this type of approach. Unlike those linked to methodologies, after which the mere allusion to them in a common context, besides being identifiable, is analyzable and identifiable by anyone, even in environments that do not know their foundations or principles.¹⁷

The objective knowledge of the facts or processes that we are interested in studying through research makes it necessary to use both theoretical and methodological tools. The former alludes to the use of a theory or theoretical approach that guides us in the way we approach our object of study and explain it; the latter implies the use of general criteria and procedures (method) that guide the work, as well as rules and operations (techniques) for the management of instruments for the collection of empirical information that allow us to test the hypothesis (p.227).

The research work in any of its stages, seedbed, training and research itself contains precise objects that escape the rigor and tension created by the projects embarked on methods and methodologies. While the former serve as consultancy, studies, field work, the latter are exposed to evaluation as hypotheses, methodologies and results, which according to the distance posed correspond more to investigations that do not contain laboratory and/or field work, do not control variables or samples and that despite the task, a methodical instrument must be built for their consideration.¹⁹

As a result of the lack of planning in research, we see an infinity of projects and lines of research and a significant lack of scientific productivity. The school of individualism prevails and contrasts with the good intentions of the new policies that try to guide inter and multidisciplinary work, without previously establishing institutional research policies. In summary, we can mention that an institution without strategic planning in the development of scientific research and a group of researchers with an infinite number of lines of research, product of an individualistic school, can hardly have groups and lines of research that give identity and prestige to an institution (p.40).

The groups are the ones who should offer the dissertations and approaches to be developed in terms of research methods or methodologies. They are the ones who finally leverage any effort that intends to incubate research exercises in the classroom setting, where it is more than absent. The direct and indirect research assignments and tasks outside the research actions themselves could be effectively incorporated into the framework of academic and teaching areas, provided that it is understood that the groups also require the mobility of research management capacity in the institutions beyond the research commitments.²⁰

It is pertinent to train researchers, academic and administrative leaders in aspects related to organizational intelligence so that, knowing its rationality and the protocols of its practices, they can rely on its tools and on the experts that exist in the university and those that should be trained, in the understanding that the greatest possible accumulation of knowledge and useful information will leverage the production of knowledge, optimize investment and enhance the linkage and linkages of the university, facilitating the fulfillment of its mission objectives (p.249).

The seedbed is stipulated to attract with the purpose of convincing on research, the formation is directed to found and the proper one to initiate in research. That is to say, the seedbed cannot be constituted under the quality of research, the formation nourishes on what it implies to do research, but not to develop a project and, with respect to the research in property, it is only to empower basic elements of what it implies to really begin to know about the research. In real

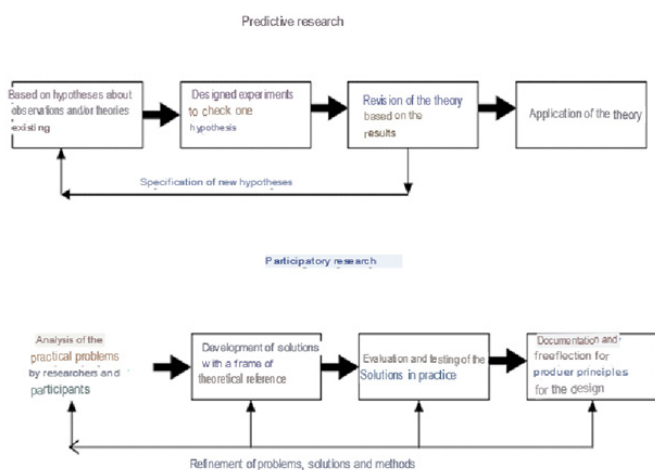


Figure 3 Predictive and design-based investigations.

Note: Gros.¹¹

The clarification of what is carried out in each research scheme is crucial when it comes to identifying whether methods or methodologies are indeed staged. In essence, methods will always have a scenario of their own reconversion delegated precisely on

terms, the former is not research and the latter is only the beginning of it. In the measure of things, the groups should be growing according to the number of seedlings.

Tools and Instruments of Research Methods and Methodologies in Public Administration

The elucidation of the professional emphasis of the public administrator goes through the added value generated by the incursion in methods and methodologies. If the undergraduate and graduate student sufficiently builds his academic activity, it is more than understood that he knows how to meet the requirements of his work in terms of consultancy, public calls or participation in competitive bidding. Consequently, the contribution made by means of the research itself as the use of methodical and methodological tools, is that they can finally build documents with sufficient technical expertise.²¹

Research Faculty Objectives. Contribute to the construction of a democratic State oriented by the general interest and guarantor of the same, from the generation of scientific conditions for the realization of national projects through the recognition and articulation of local and regional realities and interests, which makes it necessary to recover the criteria of justice and equity as the basis of its action.

- I. Lines of Research
- II. State organization and management
- III. Citizenship and construction of the public sphere
- IV. Public management and territorial development
- V. Public policies and governance
- VI. Public economics
- VII. Human rights in a public perspective (p.13).

The assembly of advisories and consultancies emerges from the capacity of students, professionals and postgraduate graduates to read the environment and the required needs. The consultant has the goodness to provide elements for direct decision making as his provision of knowledge, knowledge and field work. This field extends its capacity for action with the provision of documents elaborated on its own or to make recommendations according to deep and corroborated analyses in accordance with the pretensions set forth in the object of the professional consultancy referred to, a scenario for which the public administrator must be amply prepared.²²

Institutes and schools of public administration should set up appropriate *fund-raising* schemes to detect alternative sources of financing, negotiate their procurement and maximize their use. At the same time, they should consider ways of generating their own resources through the remunerated provision of training, research, technical advisory and publication services and, at the same time, carefully observe their cost structure. The hopelessness and anguish that today affect Latin American societies and that originate in the growing and overwhelming complexity of social problems and in the ills that afflict the public apparatus, will only have an answer through a state informed by ethical values and led by people with a clear conscience of its mission and functions. The role of institutions that know how to carry out this task is clear. If the schools and institutes of administration do not do so, they will quickly lose what is left of their legitimacy and will be replaced by organizations that adequately meet the needs set forth throughout this document (p.14).

The elaboration of studies and protocols of private-public calls for proposals arise precisely when the professional understands that

the public component wields the state structure. On the contrary, it is well understood that the public component warns the state, individual, institutional, private or private conditions, while the public contemplates the access of all institutional subjects without distinction. Therefore, the professional must be prepared to hold positions in different organizational forms in cooperative, state and productive entities in which the learning, knowledge and know-how obtained by a professional who is located in the analytical and investigative foundation of his or her work can be effectively applied Table 5.

Table 5 Historical nodes of the Public Administration

Historical knots of the public administration	
Knots of the object study	Knots of the object of study
Epistemological knot	Legal knot
* Scientific knot	Political knot
Interdisciplinary knots	Administrative knot

Source: own elaboration

Note: Sanchez (2001, p. 55).

The exercise of elaborating studies and protocols represents part of the product that the academic process itself should produce. Being a specialized discipline, it is more than consistent that each activity programmed in the summary of the academic agreements ends with the provocation of approaches linked to training. By only requesting the delivery of tasks to fulfill the purposes of the curricular content, no good is done to the discipline, much less to the intellectual capacity of the student or professional, who clearly observes how his work is diluted due to the support in work sources, but not in activities that could represent academic or intellectual alternatives.

The permanent presentation of proposals for private or public calls for proposals in accordance with the approaches expressed, indicates the management capacity, processes and results that the public administration professional interested in increasing the profiles to which he/she must unfailingly devote him/herself. However, the prevailing factor for this to become true is the consolidation of a research group in public administration in essence and, incidentally, of the definitive interference in the classroom, so that research can effectively and truly permeate, in addition to teaching, the activities of social impact and extension to which it must be prepared. Sánchez²³ provides an example for the Mexican case:

Public administration in Mexico is a practically forgotten and unexplored line of research. The reasons for this seem unjustified, since it is a relevant topic for scholars of the discipline, such as professionals in the public service. With the exception of three authors who have carried out works such as Sierra,²⁴ Chanes²⁵ and Guerrero²⁶ we are not mistaken if we affirm that this is a virgin field that needs to be examined (p.65).

The advisor is responsible for the accumulation of positions, experiences and knowledge transfer that is commonly executed by those who, apart from contributing with their knowledge to understand tasks and procedures, as know-how, privilege the institutions they advise with the possibility of advancing in topics that can open spaces not opened by them in different fields. Thus, the advisor enjoys recognition to the extent that in addition to being emphatic in the organizational needs, he/she proposes to them formulas to advance and improve in different fields. Therefore, the consultant, in addition to being experienced in these matters, understands the magnitude of his assertions insofar as they are addressed or incorporated into activities of full organizational interest.²⁷

The time is ripe to try to elucidate what kind of public administration we need today. Almost 30 years after the beginning of the practices of transferring experiences from the private world to the public sector, it seems that the search for new models has begun. The public sector has its own specificities that are more highly valued today, including its purposes, its regulatory framework, the origin of its resources, control mechanisms, and the personnel regime. To these must be added others that have become clearer in recent years: the political process and not the market is the mechanism for allocating resources, the Public Administration has the character of public power, the different nature of the processes of value creation and the difficulty of measuring the value created. Any model or paradigm must consider these issues as a condition for success (p.26).

The inclination to activities that involve a greater effort than the academic-teaching disposition does not represent in public administration the strongest element to be shown. Attention is focused on consolidating knowledge and topics inherent to the State and, incidentally, on elaborating tasks of an operative and functional order through executions, which only vindicate the questioned call to overcome the position of being assumed as civil servants or State operators. In this direction, it is necessary that each academic bet tends to give faculties of a scriptural, interpretative, oratory and recursive order in the use of authors, sources of information and references with which to solve professional competences.

The public administrator who fails to procreate academic and intellectual skills does not have the necessary foundations to place himself in any of the above-mentioned fields. Even though his professional interest lies in operational and functional activities, a commitment to information and permanent reading is more than a duty. However, if he does not manage to obtain either of these two results, it is likely that he will have difficulties in understanding how an area that is considered operational from the outside can consider, by itself, the possibility of orienting its development through the formalization of research processes, and that promotes methods and methodologies as corporeal to achieve it.²⁸

It is natural to recognize that the *Science of Public Administration* has relations with several branches of Law, fundamentally with Constitutional Law and Administrative Law, since the administration has its origin in the Constitution, which in this aspect creates and structures the being of the State, of which the administrative organ and consequently, the public administration is an important part, indicating the forms in which it must be carried out, as well as its nature; while the administrative law indicates the channels and conditions in which the public administration is carried out; The latter also has a relationship with almost all the social sciences, from which it must take advantage of its principles, which it has elaborated autonomously, respecting such rules and principles without their validity being a matter of discussion in the science of public administration, since it can only take advantage of the principles and rules of other sciences to apply them, in the same way that the other social sciences can use the principles of the Science of Public Administration, which is also related to the techniques that assist it (p.12).

The research developed on the basis of the methods and methodologies would have a place in the professional training of public administrators if, as a result of the efforts made in the field of research, the step was also extended so that they could effectively carry out advisories, consultancies, studies and projects of various kinds. If the participation in such circumstances is null, it is necessary to think deeply about the results and the added value obtained on account of

the efforts developed in the field of research, since they are moments or products of the latter, namely. Gonzales (2009) points out.

The nature of the consultancy is that the research question is proposed by the contracting entity. And the consultancy is part of the research process to the extent that the search for an answer to that question offers elements that help to clarify the research purposes of the group. Thus, the challenge for the research group is to ensure that the question (of the contracting entity) feeds the research group's QUESTION. Recognizing beforehand that the research groups are not exhausted in the faculty, it is important that as a privileged institutional entity it designs the mechanisms that favor the exercise of research. And in this process, information plays a crucial role in the administration of the process. The academic response of the University is its commitment, in the long term, with the construction of society and the consolidation of the project of the Nation (p.4).

It is more than a categorical imperative for public administration professionals to apply in the training on topics inherent to research and the full management of methods and methodologies to achieve the parameters contemplated, namely, to define, according to the achievements obtained by the School of Public Administration, the scope, goals and results to be made possible with this task. The step consists of defining, in accordance with the achievements obtained by the School of Public Administration, the scope, goals and results to be made possible with this task. The idea is to be able to inculcate research from the basic foundation of the career, so that even relevant topics such as internships or field work have a recognition from that point of view, elements that are currently alien even to labor recognition.

The rethinking of the academic work according to the research process should be an idea to be incorporated in the term of the distance in the professional training of the public administrator. The definition of work according to the elaboration of advisories, consultancies, studies or postulations to calls for proposals should be an ingredient that irrigates the activities denominated under the slogan of tasks or workshops that although they are propitious for the foundation in the exercises of analysis and interpretation of the functions and operative occupations, they are widely surpassed when the former are put in the first place of the options to raise in this respect, at the time of evidencing the impact of the same in the activities that add content to the profession. Zuñiga et. al (2011) emphasizes.

The regulation of university teaching or, more specifically, of academic work, is carried out with a preponderance of extrinsic reward factors, with little attention to intrinsic processes. What is the reason for this imbalance? The predominance of extrinsic factors goes hand in hand with a trend in the institutionalization of academic work, in which teaching is considered as a narrative activity (of text commentary), while research, as well as the production of codified knowledge, are imposed as the backbone to which activities subsidiary to academic work are aligned (p.107).

The incorporation of the structural components of the methods and methodologies together with a broad development in the acquisition of competencies linked to the development of advisory services, consultancies, application for calls for proposals or bids convened by different bodies, should be a simulator parameter with a real profile that should adhere to the teaching activity of professionals in public administration. Otherwise, it implies a disruption in the investigative capacity that, for the reasons justified in different sections, should be consolidated in their work. The learned professional responds to this call to the extent of the answers he has in the classroom environment to sponsor this process.²⁹⁻⁴²

Conclusion

In the profession of public administration, it should be clearly noticed the bet of what it implies to be located in the orientation of the methods and/or methodologies of research, parameters from which it could be understood what it implies to implement proposals that claim the scientific character of the form, for which, topics such as innovation appears as a spearhead to achieve, or to outline the methodological character of training, element for which the apprehension of designs, tools and complementary instruments and proper of its work place it in the possibility of also providing such resources. The consideration of the scientific method in the professional development of the public administrator implies for the effect to adhere components so fundamental for the effect, as the attainment of laboratories, the strengthening of the academic rotation in diverse field works on the part of the teachers and students, and to raise the academic and monographic practices or the elective ones to which there is place under a wide tutelage of behavioral, documentary and instrumental character foreseen by the own observance of methodical or methodological exercises, to be able to give north to what is done from the empirical evidence, but that does not achieve to investigative parameters. The design of the strategy aimed at correlating the research projection in the training of professionals in public administration basically involves preparation in writing and publications together with the commitment of teachers to involve in transversal activities of the research task such as consultancies, consultancies and applications to private and public calls for proposals through their own class work exercises, which must overcome the question of knowledge from know-how to establish it from doing in different contexts, as is common in the public environment and the fields established in the purposes and functions of the State, among others.

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Conflicts of interest

The author declares there is no conflict of interest.

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