

Investment for research at the Universidad Autónoma de Nayarit**Inversión para la investigación en la Universidad Autónoma de Nayarit**

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Abstract

Research is one of the substantive functions of Higher Education Institutions. For the promotion, development and strengthening of research, it is necessary the participation of academics, the promotion strategies on the part of the institutions and the investment of the state and federal governments. At the Autonomous University of Nayarit there is a great advance in indicators according to international rankings. From this arises, the need to inquire about the actions that are carried out to achieve it. In this work, the objective is to make known which are the strategies implemented by the institution and analyze the total investment in the last five years. For which a comparison is made of the two main sources of financing: Extraordinary Funds and Patronage Resources. It concludes in a reflection on the institutional strategies applied by the Autonomous University of Nayarit, the behavior of the resources provided by both sources of financing mentioned, and the institutional and federal policies.

Research, Investment, Policies

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Resumen

La investigación es una de las funciones sustantivas de las Instituciones de Educación Superior. Para el fomento, desarrollo y fortalecimiento de la investigación es necesaria la participación de los académicos, las estrategias de impulso por parte de las instituciones y la inversión de los gobiernos estatales y federales. En la Universidad Autónoma de Nayarit se tiene un gran avance en indicadores de acuerdo a rankings internacionales. De ello surge, la necesidad de indagar sobre las acciones que se realizan para lograrlo. El presente trabajo, tiene el objetivo de dar a conocer cuáles son las estrategias implementadas por la institución y analizar la inversión total, en los últimos cinco años. Para lo cual se realiza una comparación de las dos principales fuentes de financiamiento: Fondos Extraordinarios y Recursos de Patronato. Se concluye en una reflexión en torno a las estrategias institucionales aplicadas por la Universidad Autónoma de Nayarit, al comportamiento de los recursos aportados por ambas fuentes de financiamiento mencionadas, y a las políticas institucionales y federales.

Investigación, Inversión, Políticas

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Introduction

The higher education system in Mexico permeates the inherited model of the university from the 19th century, where the development of teaching predominates (Arechavala, R. 2011). Over time, teaching was joined by the extension of culture and research; These three make up the substantive functions, which are inherent to higher education.

From their social function, universities manage to directly favor students and their families, but also the community where they live, through the knowledge and capacities of academic groups applied in solving various social problems. Which agrees with Castañuela, B. (2016), who mentions that the space par excellence to create and disseminate knowledge is the university, since, through the research carried out here, it is possible to improve the quality of life of people.

Research, in addition to contributing to social development through knowledge, has an economic impact. Becker (1983) and Schultz (1983) in Marroquín, J. and Rios, H. (2012), point out that for the growth of national income it is important to involve education, training and research; this set of factors raises and maintains productivity, innovation and the same economic growth.

Research as a substantive and social function

In general, higher education institutions, whether they are federal public universities, state public universities, state public universities with solidarity support, technological universities, polytechnic universities, intercultural universities, research centers or normal schools, have the elements to develop professional training, training and research.

In different possibilities and depending on the mission of each IES, they all have trained, qualified and competent academic plants in various areas of knowledge, there is specific infrastructure for the development of disciplines, they have the capacity to intervene in the social environment and they have the possibility of seeking to obtain resources from various sources. Hence, investing in it is of utmost importance to strengthen the institutions themselves; but, above all, to face social problems and to promote the economic development of the regions.

At the Universidad Autónoma de Nayarit (UAN), from the Institutional Development Plan (PDI) 2016-2022 axis 2: research with social impact (UAN, 2016), they derive policies that establish the promotion and strengthening of the research work carried out by teachers and researchers, investment in infrastructure, equipment, patent registration, monitoring of projects financed by external resources and publications, and support for projects for technological innovation and the development of services.

In addition, these axes are anchored in three articulating axes: university social responsibility, diversification of financing sources, and transparency and evaluation of results. This makes it possible to guarantee the support of the institution for the development, in this case, of the research and related actions.

This is reflected in the results obtained in the national ranking, published by América Economía, which shows the categories and criteria in which the UAN is compared with other public and private universities in Mexico. The purpose is to identify compliance with the quality standards managed by CONACYT.

Year	Rankin	Teaching quality	Investigation	Prestige	Postgraduate offer	Internationalization	Accreditation	Inclusion and diversity	Quality index
2020	41	58.4	42.5	6.9	39.7	50.5	65.8	66.2	45.17
2019	41	61.0	24.1	4.3	39.0	47.7	75.7	65.5	41.88
2018	42	59.5	10.3	5.8	38.1	52.3	19.8	66.6	36.73

Table 1 UAN results in the AMERICA ECONOMIA ranking from 2018 to 2020

Source: Ranking, AMERICA ECONOMY, <https://mba.americaeconomia.com/>

The table shows that the quality index of the UAN has increased 8.44 points in the 3 years evaluated, and in general it is a notable advance. However, of the categories analyzed by the ranking, the one with the greatest progress is research, which increased 32.2 points in the 3 years evaluated; that is, it went from 10.3 in 2018 to 42.5 in 2020. Although an interpretation of the variables that make up the analysis is required, the evidence of growth is reflected exponentially. In this sense, the strategies used and the financed investment are identified to achieve the results in the advancement in research at the UAN, which allows us to conclude in a diagnosis that generates issues to be addressed and are of interest to deepen beyond the figures.

Promotion strategy for research (Methodological strategy)

Universities have gone from being only entities of teaching, learning and culture, to also being generators of knowledge through research. Achieving this requires considering several factors: the organization, dedication and commitment of the academics; the institutions' promotion strategies; and investment and financing of institutions and governments.

It is in the strategies to promote the institutions, and the investment and financing of the institutions and governments that this study focuses on; To do this, the progress of the Universidad Autónoma de Nayarit (UAN) in the last five years is analyzed, derived from the institutional impulse to research and the sources of funding for research.

From the perspective of institutional management, for Perdomo (2002) financing is obtaining resources from external or internal sources, ranging from the short to the long term, necessary for the operation of a public, private or mixed company. For this work, financing will be understood as any type of resource (public or private) in any form of assignment (ministry to the institution or contribution in kind) destined for research activities.

They are considered as research activities, from the generation and conservation of knowledge, production and transfer of technology, generation of scientific vocations, strengthening capacities for research, up to, care or improvement of the physical infrastructure to carry out research (UAN, 2016).

These activities are carried out at the UAN as a strategy to promote and consolidate the investigative work, and to carry them out, the two sources of financing with the greatest participation in the annual budget are the Extraordinary Funds and the Patronage Resources. However, the Extraordinary Funds have been depleted during the last decade, so that the Patronage Resources are necessary and indispensable to balance the depletion of the other source.

The Extraordinary Funds are those that are integrated into the Federation's Expenditure Budget annually and that are distributed through budget programs coordinated by federal agencies and operated by states and municipalities, or by higher education institutions, when the operating rules apply. thus. For higher education, the one in charge of promoting these funds is the Secretary of Public Education (SEP, 2013), as it is a mechanism through which immediate research and teaching needs are answered, as well as emerging needs, beyond the plans. studies and academic programs.

The Patronage Resources come from the 12% special tax destined for the UAN, which is generated from the contributions of the population of the municipalities and the state. This resource is collected by the Board of Trustees, which is responsible for ensuring that the institution complies with investing it in the promotion and increase of the UAN's assets through the financing of its academic, extension, linkage and research activities (Legislative Branch of the State of Nayarit-Secretary General, 2015).

Therefore, for the analysis, these sources of financing are taken as classifiers, on which data of the amounts invested in the last five years are exposed, during which time the UAN promoted and monitored the research activities in a systematic way. as an institutional strategy.

Progress in funding for research (Results)

In the last three years, the UAN shows progress in the research indicator. From this, the institutional strategies that were used and the resource invested through the sources of financing of Extraordinary Funds and of the Patronage Resources are analyzed.

Among the strategies to promote the institution are the steps taken by the Secretary for Research and Postgraduate Studies and by researchers, either individually or by the Academic Bodies to obtain extraordinary resources.

Year	Extraordinary sources of financing			Total annual investment
	Agreement managed by SIP	N projects	Amount funded for research groups	
2016	\$ 14,239,408.00	14	\$ 38,022,510.48	\$ 52,261,918.48
2017	\$ 5,868,460.72	2	\$ 23,658,776.26	\$ 29,527,236.98
2018	\$ 7,034,300.00	11	\$ 7,095,402.00	\$ 14,129,702.00
2019	\$ 5,131,706.77	8	\$ 3,794,521.00	\$ 8,926,227.77
2020	0	0	\$ 3,079,839.28	\$ 3,079,839.28
Total	\$ 32,273,875.49	35	\$ 75,651,049.02	\$ 107,924,924.51

Table 2 Total investment in research with extraordinary funding sources
 Source: Prepared by the authors from data programmed and executed by the UAN (2016-2020)

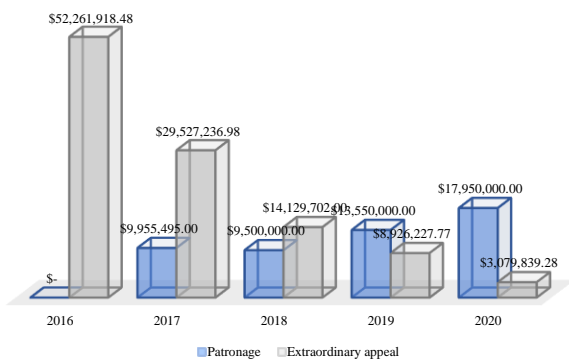
The total investment with sources of extraordinary resources from 2016 to 2020 is \$ 107,924,924.51. When analyzing the investment per year, it is shown that it decreases. This is in line with federal policies on the adequacy of government investment in higher education and research.

On the part of the Patronage Resources, from 2017 to 2020 they show an evident increase in investment, achieving a total figure of \$ 53,955,495.00; increased from \$ 9,944,495 in 2017, to \$ 19,450,000.00 in 2020.

Year	Patronage
2017	\$ 9,955,495.00
2018	\$ 11,000,000.00
2019	\$ 13,550,000.00
2020	\$ 19,450,000.00
Total	\$ 53,955,495.00

Table 3 Total investment in research with a source of funding from the patronage
 Source: Own elaboration based on data from the Secretary of Planning and Programming, UAN

When comparing the financing between the sources of extraordinary resources and that of Patronage Resources, there is a great difference between the financing of the federation, going from \$ 52,261,918.48 in 2016 to \$ 3,079,839.28 in 2020; in comparison, from 2016 to 2020 there is a decrease of \$ 49,182,079.20.



Graphic 1 Comparison by financing sources
 Source: Own elaboration based on data from the Secretary of Planning and Programming, UAN

Faced with this downward trend in resources from extraordinary funds, it was sought to guarantee progress in research, balancing the financing and operation of projects through the resources of the Board. Now the question is, what is the Board of Trustees invested in?

Projects	2017	2018	2019	2020	Total per projects
Promotion of educational research	\$ 2,500,000.00	\$ 1,200,000.00	\$ 1,200,000.00	\$ 1,200,000.00	\$ 6,100,000.00
Research program on social problems of Nayarit	\$ -	\$ -	\$ -	\$ 1,000,000.00	\$ 1,000,000.00
Strengthening research by promoting the conclusion of research projects with external financing	\$ 3,500,000.00	\$ 3,000,000.00	\$ 4,000,000.00	\$ 2,000,000.00	\$ 12,500,000.00
University Productivity through Research	\$ 1,455,495.00	\$ 1,500,000.00	\$ 3,000,000.00	\$ 2,500,000.00	\$ 8,455,495.00
Program for the generation of scientific vocations	\$ -	\$ -	\$ -	\$ 5,000,000.00	\$ 5,000,000.00
Strengthening the graduate	\$ -	\$ 500,000.00	\$ 1,000,000.00	\$ 1,500,000.00	\$ 3,000,000.00
Congresses on Science Technology and research promotion	\$ -	\$ 300,000.00	\$ 500,000.00	\$ 300,000.00	\$ 1,100,000.00
Dolphin Program	\$ 2,500,000.00	\$ 2,500,000.00	\$ 3,000,000.00	\$ 3,600,000.00	\$ 11,600,000.00
Improvement of the conditions of the Research and Technology Transfer Center	\$ -	\$ 1,500,000.00	\$ -	\$ 1,500,000.00	\$ 3,000,000.00
Explorer Program	\$ -	\$ 500,000.00	\$ 850,000.00	\$ 850,000.00	\$ 2,200,000.00
Total annual	\$ 9,955,495.00	\$ 11,000,000.00	\$ 13,550,000.00	\$ 19,450,000.00	\$ 53,955,495.00

Table 4 Distribution of the annual resource of the Board of Trustees in research projects
 Source: Own elaboration based on data from the Secretary of Planning and Programming, UAN

For this, since 2017 a matrix of indicators was built tied with an annual operating program, organized into projects, among which those that allow the strengthening and development of the research work, and whose main actors are the academic staff, students and infrastructure development.

In 2017, only 4 research projects were operated: Promotion of educational research, Strengthening of research through the promotion of the conclusion of research and financing projects, University productivity through research and the Dolphin Program.

In 2020 a total of 10 research projects will be numbered: Promotion of educational research, Research program on social problems of Nayarit, Strengthening of research through the promotion of the conclusion of research projects with external financing, University Productivity to Through Research, Program for the generation of scientific vocations, Strengthening postgraduate studies, Congress of Science, Technology and Innovation, Dolphin Program, Improvement of the conditions of the Center for Research and Technology Transfer and the Explora Program.

Conclusions

The analysis allows us to know the figures for investment in research through two main sources: Extraordinary Funds and Patronage Resources. Of these, the one with the highest total investment has been Extraordinary Funds, however, year after year there has been a considerable decrease.

On the other hand, the Resources of the Board of Trustees contribute a considerable sum that has increased year after year.

Even when the federal resource is maintained from different instances and is institutionally managed to try to balance the sources of investment in research, the truth is that the federal resource in the years analyzed shows a clear downward trend.

In 2016, the Extraordinary Funds stood out as the main source of financing for UAN, in that year, a single project with external financing achieved an amount of 18 million pesos. By number of projects, there is also a greater number in 2016 than in 2020; the decrease in investment affects the number of projects financed, and thus limits research activities for a greater number of teachers and students.

Regarding the Patronage Resources, in 2016 the data are limited, it is only known that the operation of the resources was in compliance with those established in the Patronage Law for the Administration of the Special Tax of 12% destined to the UAN, but not an Annual Operative Program was followed, and therefore, no projects were integrated.

In this sense, in 2017 -the first year in which projects are integrated- it is observed that there are fewer projects with greater financing; in 2020, there is a greater number of projects with less financing. This contributes to strengthening, on the one hand, research capacities as well as vocation development.

The downward trend in external financing is probably due to the absence of an investment policy in science and technology on the part of federal policies. On the other hand, the amount of resources managed by academic bodies is greater than the administration's management capacity in federal or local stays, which shows a competitiveness of the researchers, but also a disarticulation between both.

From the institution, an investment agenda has been maintained with the Patronage Resources, but an analysis of the type of projects financed is not presented, this may show the absence of an institutional research agenda. Likewise, when comparing the sources of financing - Extraordinary Funds and Patronage Resources - by year, several situations are observed, which the UAN faced.

First, to prevent critical scenarios of the substantive function of research in the face of scarce public resources, based on the promotion of an investment agenda of the Resources Board for research.

Second, the need to strengthen institutional investment in research in order to maintain installed capacities and academic productivity.

And third, the incipient autonomy generated by the institution in terms of funding for research, shows the capacity it has to be able to propose an inclusive, responsible research agenda linked to the development of the state.

It is necessary to reflect on the fact that public universities depend to a large extent on resources from external financing sources, such as Extraordinary Funds, and that, in the case of UAN, the Resources of the Board of Trustees have been crucial to meet objectives, contribute socially and maintain academic and quality indicators.

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