

## STRATEGIC INDICATORS AND FINANCIAL VIABILITY IN DIGITAL INNOVATION PROJECTS: APPLICATION IN THE EDUCATION AND TOURISM SECTOR

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### Abstract:

The analysis of the financial viability of an investment project is an essential phase for decision-making which (Gholamzadeh, Goni, & Noman, 2020, vol 238) takes as reference the assessment of the initial investment, budgets, cost of capital, and sensitivity. However, a frequent problem in this type of analysis is usually the low alignment with the strategic indicators that the project's interest groups have defined. The above generates scenarios of uncertainty and a higher level of risk due to lack of knowledge, managerial and financial skills (Wrigley, Nusem, & Straker, 2020), and specifically in the typology of technological projects for innovation. digital, within the framework of services as versatile as education and tourism, due to the characteristics and impacts of this type of interventions. As described, a possible solution for these scenarios is the Balanced Scorecard (BSC) as a tool for project-based strategic initiatives, to help the organization (Karadova, Durkacova, & Kalafusova, 2014). Therefore, as the first objective of this research, the question arises: What indicators or metrics from the client/user perspective, internal business processes, growth and learning, do entrepreneurs in education and tourism services consider for digital innovation and their perhaps contribute to the financial viability of a technological project?

The research presents a non-experimental and transversal design with a mixed approach, through integrative review, and application of a survey to service entrepreneurs in education and tourism, as well as directors of technological projects in digital innovation. The first findings focus on the fact that the use of the BSC method is convenient to improve project results.

**Keywords:** project management, financial viability, indicators, tourism, higher education, digital innovation.

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**Resumen:**

El análisis de la viabilidad financiera de un proyecto de inversión es una fase esencial para la toma de decisiones (Gholamzadeh, Goni, & Noman, 2020, vol 238) que toma como referencia a la valoración de la inversión inicial, presupuestos, costo de capital, y sensibilidad. Sin embargo, un problema frecuente en ese tipo de análisis suele ser la baja alineación con los indicadores estratégicos que han definido los grupos de interés de los proyectos. Esta situación descrita, genera escenarios de incertidumbre y mayor nivel de riesgo debido a falta de conocimiento, habilidades gerenciales y financieras (Wrigley, C., Nusem, E.& Straker, K.2020), y específicamente en la tipología de proyectos tecnológicos para innovación digital, en el marco de servicios tan versátiles como educación y turismo, por las características e impactos de este tipo de intervenciones. Según lo descrito, una posible solución para esos escenarios es el Balanced Scorecard (BSC) como herramienta de iniciativas estratégicas basadas en proyectos, para ayudar a la organización (Kadarova, 2014).

En el marco del contexto descrito, este trabajo de investigación tiene como objetivo resolver la siguiente pregunta: ¿Qué indicadores o métricas desde las perspectivas cliente/usuario, de procesos internos del negocio, crecimiento y aprendizaje, consideran los empresarios en servicios de educación y turismo para la innovación digital y a su vez aporten a la viabilidad financiera de un proyecto tecnológico? La investigación presenta un diseño no experimental y transversal con enfoque mixto, mediante revisión integrativa y la aplicación de una encuesta a empresarios de servicios en educación y turismo, así como directores de proyectos tecnológicos en innovación digital. Los primeros hallazgos se centran en que la utilización del método BSC es conveniente para mejorar los resultados de los proyectos.

**Palabras clave:** gestión de proyectos, viabilidad financiera, indicadores, turismo, educación superior, innovación digital.



## Introduction

Organizations, in terms of project management and direction, have a latent interest in applying good practices that allow them to adopt integrated models that define the generation of value, the management of their resources and measured by performance indicators. Thus, this section first describes some relevant studies in this regard and in a second part the relevance of the projects with digital innovation and their application to higher education and tourism is bibliometrically described.

### **1. Alignment of the organization with project management**

With the above, regarding the alignment of the organization with the achievement of project programs that feed the strategies, a study developed in Germany (Smurfit, Jerbrant, & Feldmann, 2020, 38) The document explores how three different value processes, to Namely, value definition, value creation, and value capture, were related to specific dimensions of program organization design, including the general form of the organization, program boundaries, modes of control of the organization, the protagonist of the program and the sources of financing. The paper explains the dynamics of alignment between organization design and value processes and shows how the external context shaped the alignment process. Therefore, the study contributes to the literature by reporting a rich, longitudinal empirical case, identifying organizational preconditions for different value processes in programs and highlighting the dynamics of these processes.

Another relevant study in terms of strategic decision making that includes the use of indicators as criteria is a comparative evaluation system developed for contractors that seeks to evaluate performance in project bidding (Bilal & Oyedele, 2020 147) affirm that the reference aspects The existing benchmarks are ineffective in evaluating tenders because firstly, these benchmarks are mainly based on profit margins as the only key performance indicator (KPI), while there are other KPIs suitable to drive the evaluation process. Furthermore, these benchmarks do not take into account the project context, which restricts their predictive accuracy. Methodologically, eight key project attributes are chosen to ensure context-sensitive benchmarking through Focused Group Interviews (FGI).

Therefore, supporting multi-criteria evaluation and recognizing that good organizational performance depends on the development of new projects, the selection of these is becoming more complicated to implement; New performance measures must be examined and integrated into projects to ensure their successful completion (Ma, Harstvedt, Jaradat, & Smith, 2020 140) Therefore, in the aforementioned study, new performance measures are examined and integrated into projects to ensure their completion. successful, for example taking into account different dimensions such as sustainability, environmental, social and of course taking into account an uncertain decision-making environment. A fuzzy logic method (TOPSIS) is used to choose the most sustainable alternative.

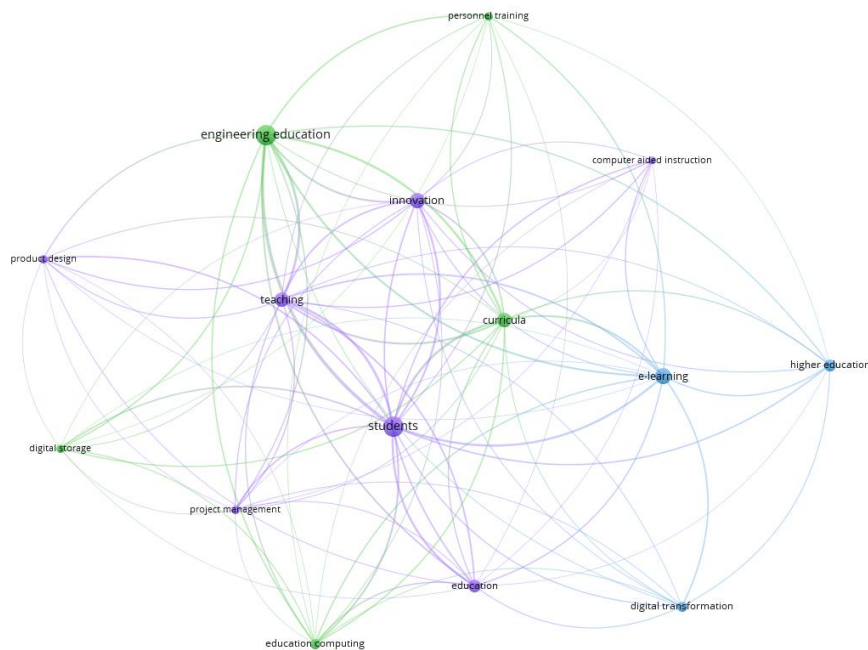
Through this review of recent studies, there is a need to highlight the importance of integrated models that not only demonstrate financial viability, but also integrate other aspects, as a recent study explains about the imperative and research directions of sustainable project management. (Gholamzadeh, Goni, & Noman, 2020, vol 238) whose objective is to determine possible research extensions in this regard, turn to the literature review in the areas of sustainability, project management and sustainable project management, as findings suggest that this research can contribute in the understanding and importance of incorporating the environmental, social and economic aspects of sustainability in the project management process.

2. **Projects, digital innovation, higher education and tourism**

2.1 Digital innovation and higher education projects

From a bibliometric review prepared with Scopus articles, between 2013 and 2024, important findings are found that explain, through keywords, the research interest in the relationship of projects, with digital innovation and the higher education and tourism sectors, as presented in the following graphs.

Figure 1. Bibliometric Analysis projects innovation digital higher education



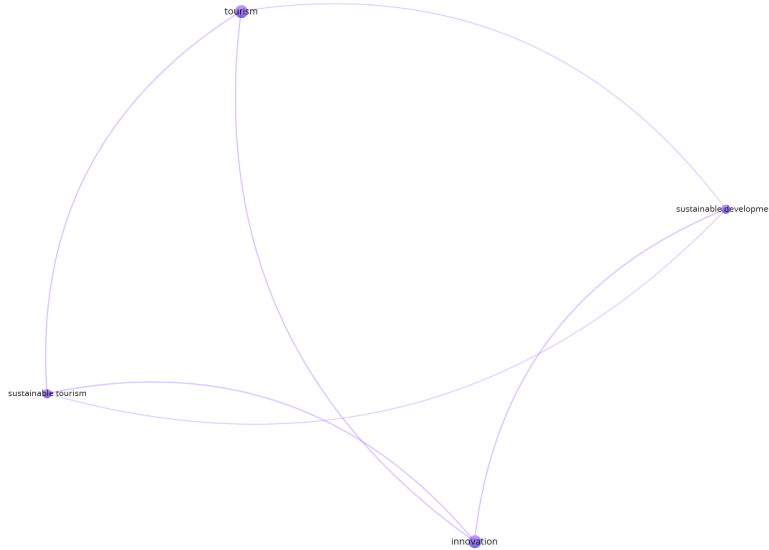
Source: Own elaboration. Scopus data

In the case of the relationship projects+ innovation+ digital+ university education by keyword, 144 direct sources are estimated, where the cluster presented especially predominates the relationship between student, teaching and innovation, having as alternative networks digital transformation, e-learning, education in engineering and curriculum. The least dense word network is relating keywords such as project management, digital data storage and product design. This indicates the importance of directing research efforts in higher education towards teaching through product design innovation projects or unique results that are mediated by digital transformation, regardless of the professional discipline they have.

2.2 Projects, digital innovation, tourism

In the same line of bibliometric review Scopus 2013 to 2024, in the case of tourism and using words associated with the relationship Projects+ innovation+ digital+ tourism by keyword, 72 sources were generated.

Figure 2. Bibliometric Analysis projects innovation digital tourism



Source: Own elaboration. Scopus data

A more closed cluster is highlighted, highlighting especially tourism, innovation as the strongest relationship, followed by the relationship tourism, sustainable development and innovation and as a third relationship the words tourism, sustainable tourism and innovation. Which indicates that, regarding these topics, project management and digital innovation are necessary to further enhance the research that is carried out and is linked to especially sustainable tourism.

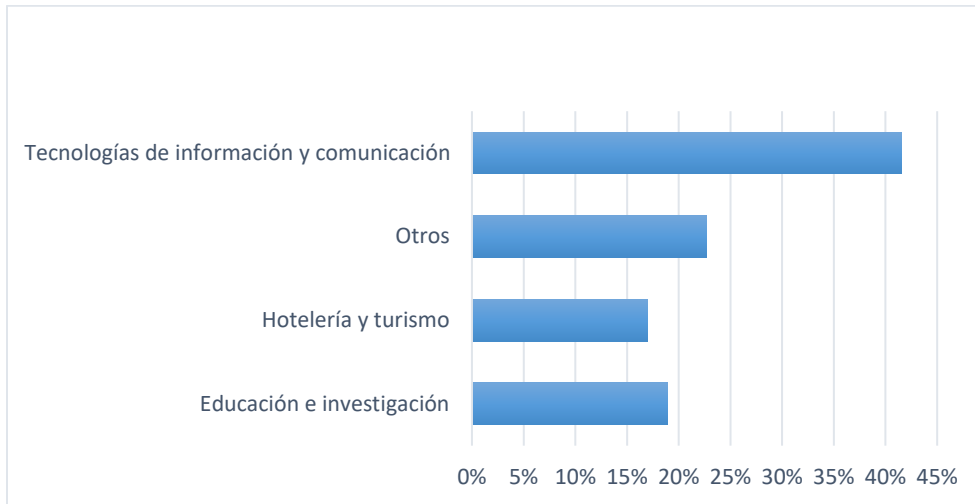
## Methodology

For the development of the research, a non-experimental and transversal design with a mixed approach is presented, through integrative review and application of a survey to service entrepreneurs in education and tourism, as well as directors of technological projects in digital innovation. The first findings focus on the fact that the use of the BSC method is convenient to improve project results. Likewise, relevant indicators are customer satisfaction, performance evaluation. However, indicators such as level of innovation, number of failures have a low level of importance, which suggests in conclusion, a higher level of appropriation and training in managerial and financial skills, among entrepreneurs and directors of technological projects for digital innovation and Tourism’s entrepreneurs and Higher Education’s entrepreneurs. The data processing tools used were VosViewer for bibliometric analysis and R commander for the analysis of the survey results.

## Results

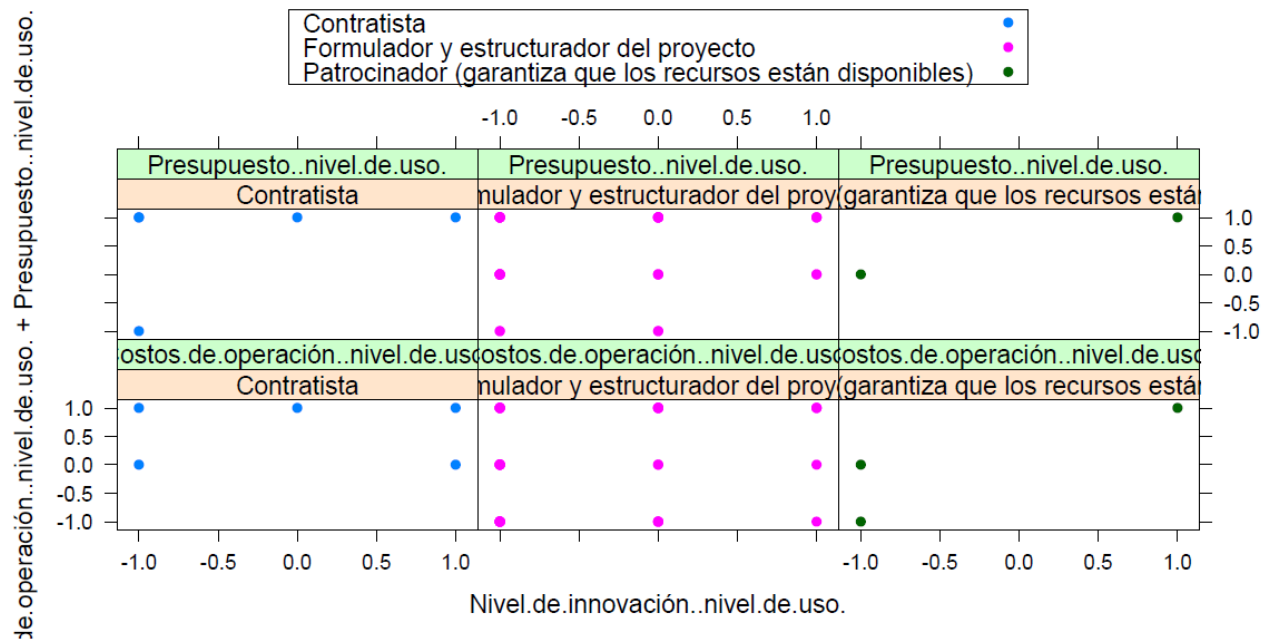
Based on the measurement of a survey applied to 53 people with project experience, 36% have participated in higher education and research projects, they have also participated in projects with a scope close to 42% of information and communication technologies. Which indicates a high versatility of the respondents in terms of levels of use in terms of formulation and management indicators organized according to the four client perspectives, learning that refers to human talent, processes and innovation and closing with the financial.

Figure 3. Project profile



Source: own survey design and applied

Figure 4. Relationship between financial indicators and innovation

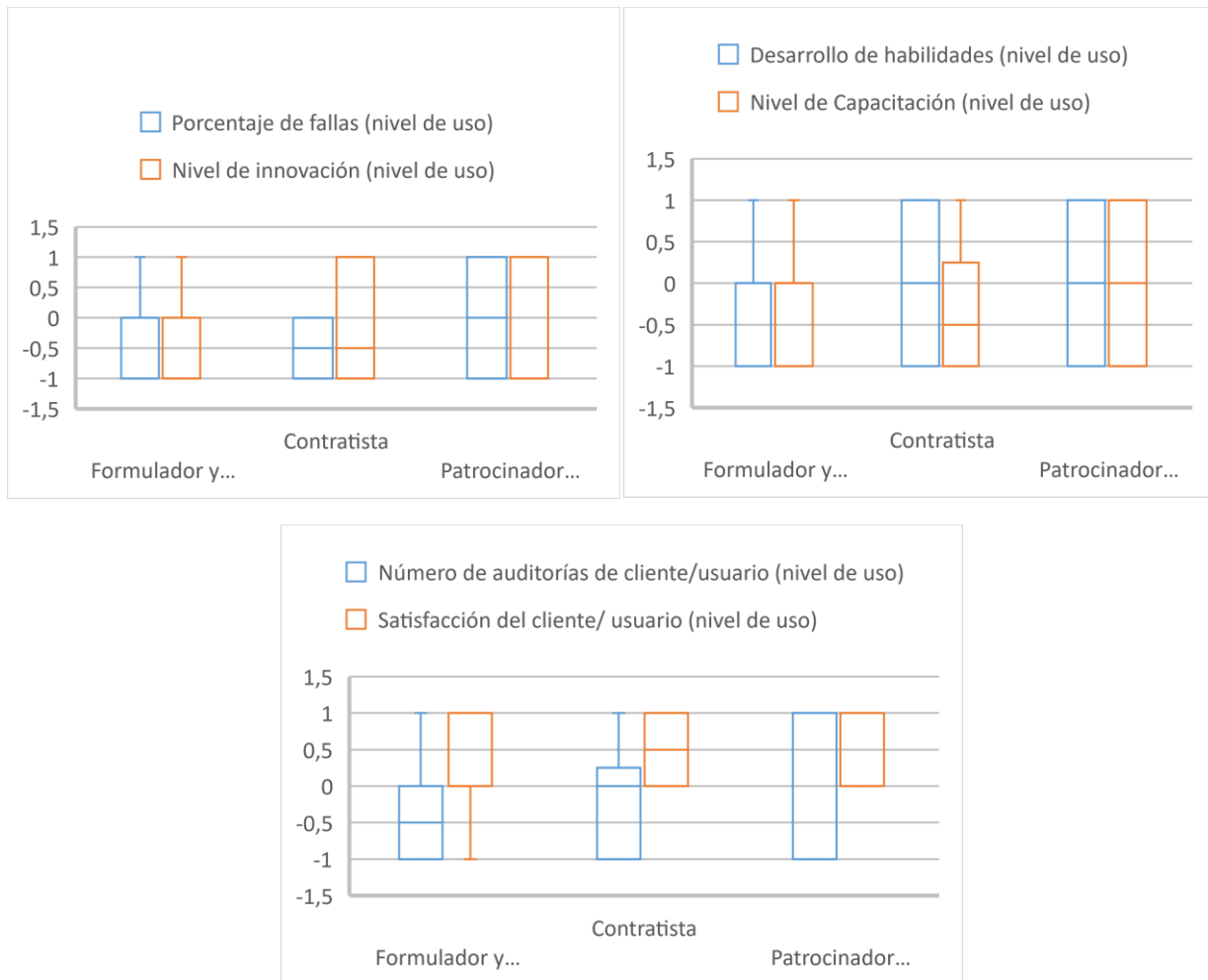


Source: own survey design and applied

In line with the applied instrument, taking into account the roles of project formulator and evaluator, as well as contractor and sponsor under a relationship between the level of innovation and two financial indicators such as operating costs and budget, it is observed that from the perspective of the contractor there is a higher level of use of the budget indicator with grade (1) that always indicates, as well as in operating costs in terms of the financial viability of a project. For its part, from the role of formulator and evaluator of the Project, the financial indicators taken are at a high level of use with grade (0) is sometimes and (1) is always.

In the case of the last role, which is the sponsor, the level of use of the selected financial indicators is infrequently used, since it is concentrated downwards, understanding that for a project where the innovation component is applied, the operating costs and budget reaches a grade (-1) that is rarely used and sometimes with a grade (0). Which indicates that the figure of the promoter or sponsor and/or contractor of a project with an innovation component, it is necessary to actively involve him in the planning of the project together with the formulating team and more in terms of services such as education superior and tourism.

Figure 5. Behavior of indicators in human talent, processes, and user/client



Source: own survey design and applied

In contrast, from the point of view of the other indicators related to processes and innovation, learning and human talent, as well as client, as shown in the figures, it is analyzed that the role of the contractor and sponsor are focused on measuring the percentage of failures, skill development and training of the project team, as well as auditing and customer satisfaction. Therefore, it is relevant to analyze which are the most relevant indicators that allow integrating feasibility, financial viability and aligning the interests of interest groups regarding a project with digital innovation aimed at higher education and tourism.

## Conclusions

Regarding research in the field of digital innovation projects in services, a greater number of publications from the higher education service stands out between 2023 and 2024, while in tourism there is a substantial reduction in this type of research. The above can conclude that a greater number of studies are required that, through cases, can generate solutions to value initiatives from digital innovation applied to this inclusive service such as tourism.

According to the review of cases, there is a prevailing need for initiatives to investigate the effect of digital innovation in a sector as dynamic as tourism, since higher education reflects a high level of results given the conditions of implementing solutions. of learning and didactics. Another element is that sustainable tourism is the type of tourism that is susceptible to receiving the benefits of developing projects regarding digital innovation. Regarding the results of the survey applied, it is reflected that most experts have developed projects related to information technologies. However, participation in education and research projects, as well as tourism in short, reaches half of the participation of experts.

With the above, it is concluded given the results of the survey applied that the relationship of operation costs and budget towards the innovation component represents a higher level of use for the project formulators than for the interested parties such as contractors or sponsors, symptom that the interested party must be involved through an agile method in the viability of an initiative that adds value from digital innovation to their service.

Another important conclusion is that in the projects, both the projector formulator and the sponsor and contractor can be better aligned, if they constantly communicate regarding the results that are obtained from it and the monitoring of the indicators. As for indicators, the level of skill development, audit with the client and budget are those of greatest use and interest to the formulator, the contractor and the project sponsor.

As possible, research extensions are proposed to review what the indicators are and their level of importance for the promoters of a digital innovation project that adds value to their service for decision-making regarding its convenience.

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