E-ISSN 2281-4612
ISSN 2281-3993

Academic Journal of Interdisciplinary Studies
www.richtmann.org

Vol 13 No 4
July 2024

Research Article

Received: 11 March 2024 / Accepted: 28 June 2024 / Published: 5 July 2024

Entrepreneurship and Project Management: An Empirical Study of the Success of Entrepreneurial Projects in the Colombian Context

Santander De La Ossa-Guerra[1,2]

Nelson Antonio Moreno-Monsalve[2]

Jhon Jairo Feria-Diaz[3]*

[1]Faculty of Engineering,
Project Management Program,
Universidad EAN,
Bogotá 111321, Colombia;
Faculty of Economic and Administrative Sciences,
Universidad de Sucre,
Sincelejo 700001, Colombia
[2]Faculty of Engineering,
Universidad EAN,
Bogotá 111321, Colombia
[3]Faculty of Engineering,
Universidad de Sucre,
Sincelejo 700001, Colombia
**Corresponding Author*

DOI: https://doi.org/10.36941/ajis-2024-0134

Abstract

The assessment of project success has become a well-established perspective in the realm of project management. The entrepreneurial project concept enables a deeper exploration of the connection between entrepreneurship and project management. This study aimed to identify criteria and success factors within the entrepreneurial project domain. Employing a quantitative approach, 118 projects conducted in the Colombian context were analyzed. The findings indicate that the assessment of entrepreneurial project success during the implementation stage encompasses criteria related to project efficiency and organizational effectiveness. Notably, the study revealed that success factors include the industrial sector and innovation in the business model.

Keywords: *Project success, entrepreneurial project, entrepreneurship*

1. Introduction

Within the broad field of organizational and management studies, the relationship between entrepreneurship and project management has attracted interest in recent years (Lundin et al., 2015). Some authors point to a gap between practice and scientific research in this relationship (Lundin et al., 2015). On the one hand, they highlight a productive and long-standing relationship in many practice settings, but it is very recent and poorly documented in scientific research (Kuura and Lundin, 2019).

In this sense, Fonrouge et al. (2019) argue that although the two fields should be kept separate because they do not share the same discourse and code, the possibility of their convergence on shared topics would allow for further scientific development of both domains, considering that both have developed as interdisciplinary fields.

In that direction, Laursen and Killen (2019) took up the contrast between causality and effectuation approaches, raised by Sarasvathy (2001), as a framework that would allow relating entrepreneurship and project management research. Lundin et al. (2015) noted that planning, cost control, and deliverable performance are good management practices for entrepreneurship and projects.

Auschra et al. (2019), coined the expression "Project-type Enterprises" to point out that the creation of new enterprises, a process specific to the entrepreneurship domain, follows a project logic, especially in what has to do with sequenced activities, such as the formulation of objectives, the establishment of milestones, hierarchical planning techniques, and cost control.

Martens et al. (2018) highlighted the importance of strengthening the relationship between entrepreneurship and project management by conceptualizing, for example, that innovation, among other concepts, constitutes a meeting point between both fields. Similarly, some studies have related concepts specific to entrepreneurship, including entrepreneurial orientation and individual entrepreneurial orientation, with project management issues, including project success (Martens et al., 2018; Sabahi and Parast, 2020; Sajid et al., 2021; Kaufmann et al., 2022; Shekarian and Parast, 2021; Al-Kwifi et al., 2023).

Finally, Kuura et al. (2014), based on the works of Soila-wadman (2009), Macheridis (2009), Belousova et al. (2010), Asquin et al. (2011) and Shepherd and Patzelt (2013) highlighted, among others, that the "entrepreneurial project" is one of the domains that allows for deepening, with empirical support, the theoretical debate between the two fields. Asquin et al. (2011) conceive the entrepreneurial project as a means to deepen the perspectives of entrepreneurship and project management. According to these authors, an entrepreneurial project is a form of organization that allows structuring value creation processes based on innovative actions for the exploitation of business opportunities and the creation of companies.

Entrepreneurial or business projects play a pivotal role in managing a country's economic, social, and environmental prosperity, particularly in job creation. Entrepreneurship contributes significantly to value creation by implementing innovative and pertinent business models to seize environmental opportunities. Consequently, governments worldwide have prioritized creating favorable conditions for the development of successful ventures and companies (Martínez-Romero et al., 2023; SENA, 2019). However, in the context of Colombia, a considerable percentage of entrepreneurial projects fail, as indicated by a gap between Total Early-stage Entrepreneurial Activity (TEA) and Established Business Ownership (EBO) based on the Global Entrepreneurship Monitor methodology (GEM) (see Figure 1).

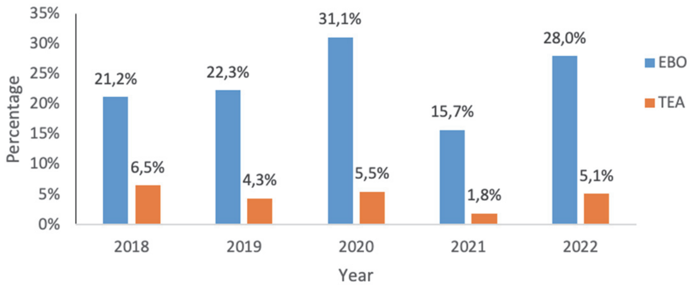

Figure 1: Gap between TEA and EBO in Colombia

These antecedents point to two aspects worth highlighting: first, the scarcity of research studies related to the fields of entrepreneurship and PM, and second, the factual problem of the level of failure of entrepreneurial projects. These two aspects offer the opportunity to develop research processes with empirical support to answer the following questions: What criteria are relevant to evaluating the success of the entrepreneurial project? What factors influence the success of entrepreneurial projects? and, What is the relationship between the success of the entrepreneurial project in the implementation stage and the product stage?

2. Evaluation of Success within the Framework of Project Management

The concept of success in PM, referred to as the "school of success" or factors according to Turner et al. (2010) and Söderlund (2011), emphasizes the essential role of PM in precisely defining what success entails. Success, seen as an ambiguous, multidimensional, and temporal concept, requires varied measurement criteria contingent on stakeholder groups, timeframes (short, medium, or long term) (Müller and Jugdev, 2012), and project types (Shenhar et al., 2002; Ika, 2009).

Within the PM framework, several authors have identified criteria for evaluating success through empirical research. Converging on a dimension termed "project efficiency," authors such as Khan et al. (2013), Ika et al. (2012), Shenhar et al. (2001), and Shenhar and Dvir (2007) group indicators measuring the efficiency and effectiveness of project management (Pinto and Slevin 1988). Cooke-Davies (2002) and Diallo and Thuillier (2004) define this dimension as an assessment of project management during the implementation stage, encompassing operational indicators like schedule compliance, budget management, and product quality—directly related to efficiency in implementation (Shenhar and Dvir, 2007).

Seminal authors in the success school have documented dimensions aimed at measuring the success of the project product. These include organizational benefits (Khan et al., 2013), business results (Shenhar et al., 2001), and business success (Shenhar and Dvir, 2007), covering aspects of business effectiveness and incorporating indicators such as sales levels, market share, and other tangible and intangible benefits resulting from the project. Kaufman and Kock (2022), in the domain of personalized engineering projects based on client requirements, consider profitability as a success criterion.

Some works aim to identify Critical Success Factors (CSF) to explain project success, considering contextual variables, PM-specific constructs, and project typology particulars (Belassi and Tokel, 1996). Hoegl and Gemuenden (2001) analyze project success as a function of teamwork; Mir and Pinnington (2014) based on PM performance, while Müller and Turner (2007a; 2007b) emphasize leadership, project manager profiles, project typology, and industrial sector. Joslin and Müller (2015) focus on methodology, De-Carvalho and Rabechini (2015) on risk, Serrador and Turner (2015) on efficiency, Aga et al. (2016) on transformational leadership and team building, Musawir et al. (2017) on governance practices and benefits management, and Martens et al. (2018) on entrepreneurial orientation impacting organizational effectiveness.

Until the first decade of the 21st century, two review works synthesized progress in studying success within the PM framework. Jugdev and Moller (2006) noted the evolution from analyzing the success of project management (efficiency and effectiveness in the implementation stage) to studying project success, analyzing both implementation and project product performance. Ika (2009) highlighted the process of determining project success or failure through contrasting contextualized success criteria and factors, especially concerning different project typologies.

3. Entrepreneurial or Business Project

The entrepreneurial trend, characterized as projectification by Midler (1995) and project society by Lundin et al. (2015), manifests itself in the tendency for innovation efforts to adopt the form of projects (Lundin, 2016). Investments, particularly those directed towards launching new products, implementing new businesses, enhancing existing processes and products, implementing and/or improving infrastructures, and driving organizational changes, are commonly structured as projects (Shenhar and Dvir, 2007). This has led to the emergence of various project typologies, contributing to the complexity of their categorization.

While some authors have analyzed business or entrepreneurial projects, conceptual delimitation of these projects has often been neglected. For instance, Araki and Martins (2023) discussed aspects of governance and creativity within this context; Martins et al. (2023) highlighted it as an instrument for creating new opportunities and starting new businesses; Mbiru et al. (2020; 2023) interpreted it as a scenario allowing integration of business and entrepreneurship thinking with the field of PM. Di Muro and Turner (2018), labeling it an "Opportunity Project," emphasized the alignment of good PM practices with the Business Model (BM) within the entrepreneurship theory framework.

In Auschra et al. (2019), two categories of project-type companies were identified. One is based on scientific research processes, resulting in disruptive products classified as technology-based companies or industries (Sońta-Drączkowska and Mrożewski, 2020; Mallik, 2023). The other comprises non-scientific companies relying on incremental innovations in the business model. The former tends to have slow commercialization processes, while the latter experiences fast commercialization and monetization processes.

Building on this background, this work proposes a conceptual delimitation of the entrepreneurial project, applying criteria of purposes and attributes as proposed by Crawford et al. (2005) to categorize projects. The entrepreneurial project is defined as a project typology with the purpose of structuring innovation, resulting in a venture, business, or business organization. It encompasses both technology-based companies and those based on innovations in the business model. In its preparation stage (initiation and planning), it incorporates concepts from both PM and entrepreneurship. Additionally, for performance evaluation from the execution stage onward, a viable approach involves combining indicators from PM and factors related to business effectiveness. The business model, defined as the design of the structure and governance of transactions enabling a company to create and capture value (Zott and Awit, 2010), plays a crucial role. In practical terms, the BM involves structuring the company's processes, activities, relationships, talents, resources, and offers with a vision of value creation for stakeholders. Finally, business effectiveness (EFO), developed within organizational theory, serves as a dimension to measure the success of organizations or businesses (Sharma and Singh, 2019; Quinn and Rohrbaugh, 1983).

4. Empirical Context of the Study

In Colombia, a series of public policies has been established to support an institutional framework fostering the creation and consolidation of companies, promoting an entrepreneurial culture. The legal framework in Colombia aims to improve institutional conditions for the creation of micro, small, and medium-sized businesses (MSMEs), fostering entrepreneurship culture and seeking collaboration between the productive and academic sectors. National efforts have led to the development of programs and services supporting the creation and strengthening of companies, particularly addressing training, financing, and technical support for business projects. Law 789 of 2002 established the Emprender Fund (EF) as the primary seed capital fund in the country (SENA, 2019).

4.1 Emprender Fund Model

The Emprender Fund is a Colombian government initiative designed to promote entrepreneurial projects. Projects managed by this fund involve business plans structured to create productive units or companies, aiming for impact and sustainability in the market. In PM theory, the management of these projects comprises two stages: the implementation stage and the product stage, representing the new company. The first stage serves as a setting for dialogue between PM practices, management practices, and entrepreneurship practices.

Operational components of the EF model include actors, methodologies, and indicators (see Figure 2). Key actors include the Entrepreneur, Entrepreneurship Manager, Evaluators, Interveners, and Resource Operators. The "Entrepreneur" represents a project interest group that fulfills the roles of proponent of the project. business plan, implementation manager and product beneficiary. The entrepreneur fulfills the conceptual role of "project owner", therefore, he is responsible for realizing the benefits and achieving the strategic objectives of the investment (Zwikael and Meredith, 2018; Meredith and Zwikael, 2020). The entrepreneur must meet certain training profiles or population typology. The "Entrepreneurship Manager" is an official who accompanies the entrepreneur throughout the process of ideation, structuring and implementation of the business plan. The "Evaluators" are those who evaluate and prioritize business plans, based on established protocols, among others, for financial evaluation (Suwaed et al., 2023). The "Interveners" are responsible for evaluating the execution of the business plans, through the established indicators. Finally, the "Resource Operators", which are public or private institutions that manage the EF money.

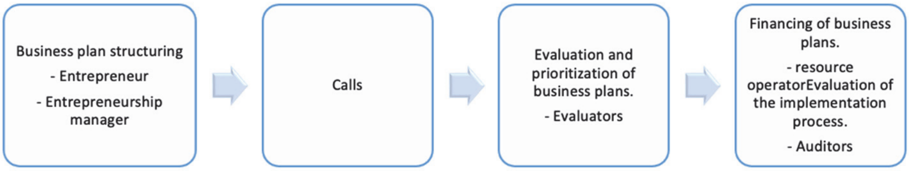

Figure 2: EF Operating Model

The EF methodology involves protocols for structuring, evaluating, and prioritizing business plans, along with a regulatory and institutional framework governing the model. Business plans are structured based on a business model, and innovation is evaluated using the OSLO manual categories (OECD, 2005). Evaluation indicators align with PM practices and organizational effectiveness, measured through audit processes (Figure 3).

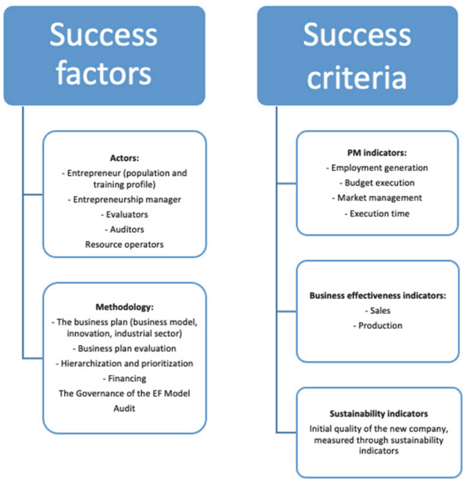

Figure 3: EF model description within the framework of the school of success in PM

Success within the EF framework involves compliance with indicators related to employment generation, budget execution, marketing management, execution time, production, sales, and sustainability in both the execution and survival stage and the product stage (Figure 4).

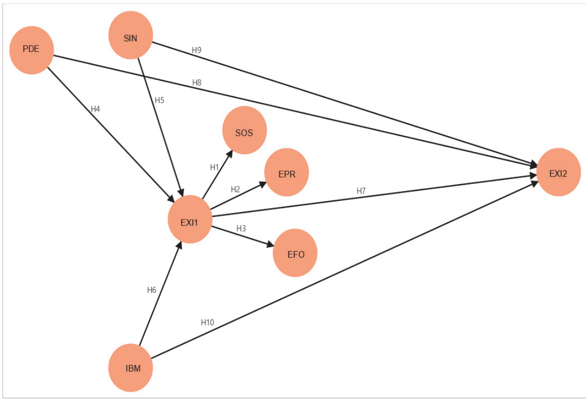

Figure 4: EF conceptual model

The hypotheses of the EF conceptual model are described below:

H1: the sustainability of the company at the time of project closure (SOS) is a valid criterion to evaluate the success of the entrepreneurial project in the implementation stage (EXI1).

H2: Project efficiency (EPR) is a valid criterion to evaluate the success of the entrepreneurial project in the implementation stage (EXI1).

H3: Organizational effectiveness (EFO) is a valid criterion to evaluate the success of the entrepreneurial project in the implementation stage (EXI1).

H4: The profile of the entrepreneur (PDE) affects the success of the entrepreneurial project in the implementation stage (EXI1).

H5: The industrial sector (SIN) affects the success of the entrepreneurial project in the implementation stage (EXI1).

H6: Business model innovation (IBM) affects the success of the entrepreneurial project in the implementation stage (EXI1).

H7: The success of the entrepreneurial project in the implementation stage (EXI2) is related to the success of the product of the entrepreneurial project (EXI2)

H8: The success of the entrepreneurial project product (EXI2) is related to the entrepreneur profile (PDE).

H9: The success of the entrepreneurial project product (EXI2) is related to the industrial sector (SIN).

H10: The success of the product of the entrepreneurial project (EXI2) is related to innovation in the business model (IBM).

5. Methodology

This study was developed within the framework of the quantitative approach, which has been the predominant orientation in the literature on success in the PM context (Khan et al., 2013; Joslin and Müller, 2015; Serrador and Turner, 2015; Aga et al., 2016; Musawir et al., 2017). The hypothetico-deductive method was followed and related to the frameworks of the PM school of success, entrepreneurship theory, organizational theory, and empirical particularities of the EF model indicators. The population under analysis comprised 155 projects developed in the Department of

Sucre-Colombia, between the years 2011-2019. As a criterion for inclusion in the sample, the project was considered to have three relevant documents for the study: business plan, business plan evaluation report, and reports of the project implementation process. Finally, a sample of 118 projects that met the inclusion criteria was used, representing 76% of the population of projects considered.

5.1 Data management strategy

Data was collected in three phases. The first phase involved structuring a project list based on public information from the EF web portal. In the second phase, project-specific documents such as business plans, evaluation reports, and audit reports were accessed through the Center for Innovation, Technology, and Services of SENA, Sucre section. The third phase involved collecting registration and survival data of business projects from the public portal Single Business Registry (RUES). A complete secondary database was constructed without missing or atypical data.

5.2 Measurement strategy

The success of the project was analyzed in two stages: success in the implementation stage (EXI1) and success of the product (EXI2).

Phase 1: For the evaluation of EXI1, the Partial Least Squares Structural Equation Modeling (PLS-SEM) method was chosen, as it is suitable for secondary data and does not require normality assumptions (Hair et al., 2019). EXI1 was operationalized as a higher-order construct and measured using the repeated indicators approach with a formative-reflective model (Sarstedt et al., 2019). The lower order constructs included Project Efficiency (EPR), Organizational Effectiveness (EFO), and Sustainability of the company at the time of project closure (SOS). EPR and EFO were measured formatively. Convergent validity was analyzed using the global item method (Cheah et al., 2018). Indicators for EPR included budget compliance (CUP), schedule compliance (CUT), marketing compliance (CUM), and production performance (DPR). EFO indicators included employment generation compliance (CUE) and sales performance (DVE). SOS was measured using the Altman model (Altman, 1968).

Phase 2: In this phase, EXI1 was related to contextual variables: Entrepreneur Profile (PDE), Industrial Sector (SIN), and Business Model Innovation (IBM) using categorical regression. PDE categories included SENA apprentice, rural youth, professional, and postgraduate. SIN categories included exploitation of other livestock species, livestock exploitation, manufacturing exploitation, and exploitation of services. IBM categories included process innovation and product innovation.

Phase 3: EXI2 was evaluated based on the survival time of the business organization resulting from the entrepreneurial project. Survival was measured using a threshold of 48 months, and logistic regression was used to relate EXI2 with EXI1, PDE, SIN, and IBM. Dummy variables were created for PDE, SIN, and IBM. In the field of entrepreneurship, Varela and Soler (2015) proposed the concept of business pipeline, which allows for the evolutionary analysis of the entrepreneurial process and the permanence in the market of businesses that result from entrepreneurial projects. Likewise, in the field of organizational theory, Hanna and Freeman (1984) proposed the approach of population ecology of organizations, used by the Private Competitiveness Council and by Moya-Clemente et al. (2020) in their models for measuring the net business birth rate and business continuation indicator respectively. A common approach can then be inferred between the fields of PM, entrepreneurship and organizational theory around the concept of “survival”.

Finally, to relate EXI2 with EXI1, EPD, SIN and IBM, the logistic regression technique was chosen, which is suitable for dichotomous or binary dependent variables. The calculations were made through SmartPLS version 4 software. The EPD, SIN and IBM variables were categorized as dummy variables.

Table 1 summarizes the operationalization of the variables during the development of the three measurement phases.

Table 1: Operationalization of variables

Construct	Dimensions - Unit of Analysis	Code	Indicators/Variables	Theoretical / Empirical support
EXI1: Success of project implementation.	SOS: Sustainability of the company at the time of project closure.	CPR	Product quality.	Shenhar et al. (2001), Shenhar and Dvir (2007), Pinto and Slevin (1988), Cooke-Davies (2002), Diallo and Thuillier (2004)
	EPR: Project efficiency.	CUP	Budget management compliance	Shenhar et al. (2001), Shenhar and Dvir (2007), Pinto and Slevin (1988), Cooke-Davies (2002), Diallo and Thuillier (2004)
		CUT	Timely compliance (schedule)	
		CUM	Compliance in marketing management	Shenhar and Dvir (2007), EF modelindicator.
		DPR	Production compliance	Sharma and Sing (2019), Quinn and Rohrbaugh (1983)
	EFO: Organizational effectiveness.	DVE	Sales compliance	Sharma and Sing (2019), Quinn and Rohrbaugh (1983)
		CUE	Compliance in employment generation	Shenhar and Dvir (2007), EF model indicator.
PDE: Entrepreneur Profile	Population characteristics and level of training	PDE1	Rural young man	Müller y Turner (2007a; 2007b), EF model indicator.
		PDE2	SENA apprentice	
		PDE3	Professional	
		PDE4	Postgraduates	
SIN: Industrial Sector	Characteristic of the sector where the economic exploitation is located.	SIN11	Exploitation of other livestock species	Müller y Turner (2007a; 2007b)
		SIN12	Livestock exploitation	
		SIN13	Manufacturing exploitation	
		SIN14	Services Exploitation	
IBM: Business Model Innovation	Characteristic of the innovation of the Activities and transactions carried out by the business.	IBM111	Process innovation	OECD/Eurostat (2005)
		IBM112	Product innovation	
EXI2: Product Success	Survival	EXI2	Time that the project remains in the market as a business organization.	(Ika et al., 2012); (Khan et al., 2013); Varela y Soler (2015); Hannan y Freeman (1984), Private Competitiveness Council (2021)

6. Results

6.1 Convergent validity, collinearity, loadings and external weights of the lower order constructs: EPR and EFO

The study evaluated the convergent validity, collinearity, loadings, and external weights of the lower-order constructs EPR and EFO. The redundancy analysis revealed significant path coefficients of 0.850 and 0.739 for EPR and EFO, respectively, exceeding the suggested threshold of 0.7 (see Table 2). This indicates communality between the indicators used in constructing the latent variables (Hair et al., 2021). Collinearity analysis indicated no problems, as all values were below 3, signifying the absence of collinearity among the indicators.

Table 2: Convergent validity of the EPR and EFO constructs

	Path coefficients				
	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	t statistics (|O/STDEV|)	p-values
EPR (formative) -> EPR (reflective)	0.850	0.795	0.129	6.609	0.000
EFO (formative) -> EFO (reflective)	0.739	0.730	0.065	11.354	0.000

Table 3 shows that there are no collinearity problems between the indicators involved in the measurements and construction of the latent variables, considering that all their values are less than 3 (Hair et al., 2021).

Table 3: Collinearity of model indicators

	CPR	CPR	CUE	CUE	CUM	CUM	CUP	CUP	CUT	CUT	DPR	DPR	DVE	DVE
VIF	1.640	1.000	1.075	1.367	1.042	1.029	1.383	1.061	1.040	1.019	2.438	1.045	2.561	1.075

Analysis of external loads and weights demonstrated significant contributions from most indicators, except for CUM and CUT (see Table 4). While CUM had an absolute contribution below 0.5 and was not significant at 5%, it was retained in the model because its relative contribution to the EPR construct (12%) exceeded the suggested threshold of 10%. Similarly, CUT, with an external load below 0.5 and not significant, was retained due to its theoretical importance in the evaluation of success in the PM framework.

Table 4: Analysis of external loads and weights

	External loads			External weights		
	Original sample (O)	t statistics (|O/STDEV|)	p-values	Original sample (O)	t statistics (|O/STDEV|)	p-values
CPR <- SOS	1.000	-	-	1.000	-	-
CPR <- EXI1	0.710	4.498	0.000	0.309	5.032	0.000
CUE <- EXI1	0.643	4.196	0.000	0.267	4.411	0.000
CUE -> EFO	0.741	4.296	0.000	0.557	3.509	0.000
CUM <- EXI1	0.209	1.754	0.079	0.078	1.762	0.078
CUM -> EPR	0.243	1.790	0.073	0.120	1.415	0.157
CUP -> EPR	0.763	4.408	0.000	0.615	3.678	0.000
CUP <- EXI1	0.654	4.288	0.000	0.275	4.659	0.000
CUT <- EXI1	0.154	1.114	0.265	0.064	1.210	0.226
CUT -> EPR	0.179	1.138	0.255	0.130	1.233	0.218
DPR -> EPR	0.760	5.809	0.000	0.629	3.984	0.000
DPR <- EXI1	0.652	5.346	0.000	0.272	3.575	0.000
DVE <- EXI1	0.732	8.201	0.000	0.307	4.561	0.000
DVE -> EFO	0.844	9.390	0.000	0.696	5.252	0.000

6.2 Reliability, construct validity and discriminant validity of EXI1

The study examined the reliability, construct validity, and discriminant validity of the higher-order construct EXI1, measured based on the lower-order constructs SOS, EPR, and EFO. Results indicated good interdependence between lower-order constructs and EXI1, with significant loadings of 0.710, 0.858, and 0.868, respectively (see Figure 5). Internal coherence of EXI1 was satisfactory, with Alpha values exceeding 0.7 and rhoc less than 0.95. Convergent validity was established with AVE exceeding 0.5, indicating adequate communality (Hair et al., 2022). Discriminant validity was supported by HTMT ratios exceeding 0.85 (see Table 5).

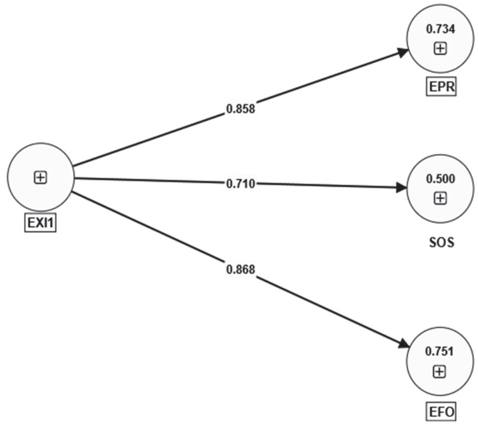

Figure 5: Model of the superior construct EXI1

Table 5: Analysis of reliability, construct validity and discriminant validity of EXI1

				Construct reliability and validity	Discriminant validity (HTMT)
	Alpha	**Composite reliability (rho_a)**	**Composite reliability (rho_c)**	**Average Variance Extracted (AVE)**	
EXI1	0.747	0.718	0.753	0.664*	
EXI1 -> SOS					0.849

Finally, it is important to highlight that the measurement of a higher order construct EXI1 was achieved, within the framework of the parameters of measurement theory (Hair et al., 2021), which explains the variance of lower order constructs at high levels (EPR=73.4%, SOS=50% and EFO=75.1%). Regarding higher-order construct calculation, Sarstedt et al. (2019) have been categorical in stating that the relationships between lower and higher order constructs are not part of the structural model, a postulate that is fully shared in this work. However, it is important to note that for the case under study, the calculations are only made within the framework of measurement theory, since at this stage of the study, the EXI1 was not contrasted with any of this other concepts. Therefore, the evaluation was done only at the measurement model level. Considering the above, the significant relationships between EXI1 and the lower order constructs SOS, EPR and EFO, which support a communality (AVE=66.4%), are legitimate parameters to accept H1, H2 and H3. That is, the dimensions: project efficiency, organizational effectiveness and sustainability of the company at the time of project closure, are valid criteria to evaluate the success of the entrepreneurial project in the implementation stage. Measurement theory is applied to confirm the reliability and validity of measurement models and structural theory allows analyzing the relationship between the latent variables that are contrasted in a model.

In the second stage, the success of the project in the implementation stage (EXI1) was compared with categorical variables of entrepreneur PDE, SIN and IBM. Low correlation values in Tables 6 and 7 indicated no multicollinearity problems.

Table 6: Original correlation variables

	PDE	**SIN**	**IBM**
PDE	1.000	0.217	0.154
SIN	0.217	1.000	0.626

	PDE	SIN	IBM
IBM	0.154	0.626	1.000
Dimension	1.000	2.000	3.000
Self-worth	1.721	0.908	0.371

Table 7: Variables transformed from correlations

	PDE	SIN	IBM
PDE	1.000	-0.121	-0.249
SIN	-0.121	1.000	0.425
IBM	-0.249	0.425	1.000
Dimension	1.000	2.000	3.000
Self-worth	1.551	0.896	0.552

However, the predictors PDE, SIN, and IBM failed to configure a statistically significant model, explaining only 3% of the variance in project success in the implementation stage (EXI1) (see Table 8 and 9).

Table 8: Summary of the model and ANOVA

	Multiple R	Squared R	Adjusted R-squared	Apparent prediction error	Anova	
					F	Sig
Standardized Data	0.296	0.088	0.030	0.912	1.511	0.171

Dependent variable: EXI1, Predictors: PDE, SIN, IBM

Table 9: Coefficients, correlations and tolerances

	Beta	F	Sig.	Zero order	Importance
PDE	0.121	2.871	0.040	0.068	0.093
SIN	0.236	6.448	0.000	0.264	0.711
IBM	0.100	0.904	0.344	0.171	0.195
Dependent variable: EXI1					

The report of correlations, tolerance of betas, and ANOVA in Tables 8 and 9 revealed that the coefficient of the PDE was statistically significant but the least important for the model.

Upon eliminating the PDE and recalculating the model with SIN and IBM variables, a statistically significant model was achieved. SIN and IBM explained 10.2% of the variance of EXI1 (see Table 10). The coefficient of the IBM variable was not statistically significant, and the industrial sector (SIN) emerged as the most important variable for the model.

Table 10: Summary of the model and ANOVA

	Multiple R	Squared R	Adjusted R-squared	Apparent prediction error	Anova	
					F	Sig
Standardized Data	0.364	0.133	0.102	0.867	1.327	0.003

Dependent variable: PEXI, Predictors: SIN, IBM

Likewise, the report of correlations and tolerance of the coefficients shown in Table 11 shows that the coefficient of the IBM variable is not statistically significant and that the most important variable for the model is the SIN. Therefore, the model was calculated one by one.

Table 11. Coefficients, correlations and tolerances.

	Beta	F	Sig.	Zero order	Importance
SIN	0.366	11.291	0.000	0.364	1.003
IBM	0.003	0.001	0.974	-0.212	-0.004

Dependent variable: PEXI

Results indicated that the PDE vs. EXI1 relationship was not statistically significant, SIN vs. EXI1 relationship was statistically significant, and the IBM vs. EXI1 relationship configured a statistically significant model at 6.5%. SIN explained 4.7%, and IBM explained 2.1% of EXI1 (see Table 12). In that sense, H4 is rejected and H5 and H6 are accepted, which indicates that the profile of the entrepreneur, as defined by the EF, does not affect the success of project implementation, but the industrial sector and innovation in the business model have a positive impact.

Table 12. Summary of model, ANOVA and coefficients of individual calculations.

Predictors	Standardized data				Anova		Coeficients		
	Multiple R	Squared R	Adjusted R-squared	Apparent prediction error	F	Sig.	Value	F	Sig.
PDE	0.101	0.010	-0.016	0.990	0.395	0.757	0.101	2.491	0.064
SIN	0.266	0.071	0.047	0.929	2.903	0.038	0.266	13.189	0.000
IBM	0.171	0.029	0.021	0.971	3.474	0.065	0.171	4.051	0.046

Dependent variable: EXI1

6.3 Comparison of previous results

In the third stage, the success of the project product (EXI2) was compared with EXI1, PDE, SIN, and IBM using logistic regression coefficients (Table 13).

Table 13. Matrix of logistic regression coefficients.

Independent variables	Coefficient	Standard error (SE)	z statistic	Wald	p-value	Exp (Coefficients)
EXI1	0.000	0.000	0.221	0.049	0.825	1.000
IBM111	0.123	0.575	0.213	0.046	0.831	1.130
PDE1	-1.788	1.191	-1.502	2.255	0.133	0.167
PDE2	-1.391	1.171	-1.188	1.411	0.235	0.249
PDE3	-1.553	1.138	-1.365	1.864	0.172	0.212
SIN11	-0.160	0.704	-0.228	0.052	0.820	0.852
SIN12	-0.747	0.708	-1.054	1.112	0.292	0.474
SIN13	0.088	0.708	0.125	0.016	0.901	1.092
Intercept	1.999	1.105	1.809	3.274	0.070	7.383

Dependent variable: EXI2

P-values of the logistic regression model indicated that the success of the product of the entrepreneurial project (EXI2) was not related to EXI, PDE, SIN, nor innovation in IBM. Therefore, H7, H8, H9, and H10 were rejected.

The study provided a comprehensive analysis of the convergent validity, collinearity, loadings, and external weights of lower-order constructs (EPR and EFO) and the reliability, construct validity, and discriminant validity of the higher-order construct EXI1. The results supported the validity of dimensions such as project efficiency, organizational effectiveness, and sustainability for evaluating the success of entrepreneurial projects in the implementation stage.

Furthermore, the comparison of results in the second and third stages revealed insights into the impact of entrepreneur profile, industrial sector, and innovation in the business model on the success of the implementation stage and the success of the project product. The entrepreneur profile had no significant impact, while the industrial sector and innovation in the business model were significant predictors of success in the implementation stage. However, these factors did not significantly predict the success of the project product.

7. Discussion of Results and Contributions

The study's results contribute to the understanding of evaluating entrepreneurial project success, particularly in the implementation stage. The discussion highlights key findings and their implications, drawing comparisons with existing PM models and emphasizing the unique aspects of entrepreneurial projects.

7.1 Validity criteria for evaluating project success in the implementation stage

The results affirm the validity of efficiency indicators such as budget management and schedule management, aligning with existing literature (Khan et al., 2013; Ika et al., 2012; Shenhar et al., 2001; Shenhar and Dvir, 2007; Pinto and Slevin, 1988; Cooke-Davies, 2002; Diallo and Thuillier, 2004). However, the study asserts that, for entrepreneurial projects, efficiency indicators alone are insufficient. Empirical evidence suggests the necessity of incorporating organizational effectiveness indicators and product quality indicators into the evaluation criteria, as defined by the EF.

This finding diverges from models presented by Khan et al. (2013), Ika et al. (2012), and Shenhar and Dvir (2007), which considered indicators of organizational effectiveness but not specifically in the implementation stage. The EF methodology recognizes the importance of analyzing quality through models like Altman (1968) and assessing organizational effectiveness in financial, administrative, human resources, market, and operational aspects. The study argues for the need to complement traditional PM models with elements from entrepreneurship and organizational theory to comprehensively evaluate entrepreneurial project success.

7.2 Critical success factors (CSF) in the implementation stage

The study identifies critical success factors in the project implementation stage, including the industrial sector and innovation in the business model, while discarding the profile of the entrepreneur as a CSF. This finding aligns with prior works (Müller and Turner, 2007a; 2007b), supporting the importance of industrial sector considerations during implementation. However, it challenges existing literature by negating the entrepreneur's profile as a CSF in the implementation stage.

The study suggests that the entrepreneur's profile is more representative of a population categorization than an individual management skill or capability profile. In this sense, the finding does not invalidate empirical evidence from previous works, but rather points out the practical need for the EF to implement strategies to evaluate the profile of entrepreneurs in their selection processes. According to Zwikael and Meredith (2018) and Meredith and Zwikael (2020), the entrepreneur is responsible for the development of the organization resulting from the project. Therefore, they are responsible for the success or failure of a project.

7.3 Contribution of innovation in the business model

A noteworthy contribution is the identification that innovation in the business model explains 2.1% of the variance in the success of entrepreneurial projects in the implementation stage. This finding aligns with propositions from previous studies (Di Muro and Turner, 2018), emphasizing the relationship between PM and business models in projects categorized as opportunities. It suggests that successful management of entrepreneurial projects involves transformations in the business model, contributing to the theoretical dialogue between PM and entrepreneurship.

7.4 Relationship between project success in implementation and product success

The study addresses the relationship between project success in the implementation stage and product success, a highly debated hypothesis in PM theory. The findings align with Atkinson's (Atkinson, 1999) proposition that a project successful in implementation may not necessarily yield a successful product, and vice versa. This highlights the complexity of project success evaluation and emphasizes the importance of considering both implementation and product stages.

This study contributes by refining criteria for evaluating entrepreneurial project success in the implementation stage, emphasizing the need for a holistic approach that incorporates efficiency, organizational effectiveness, and product quality indicators. The identified critical success factors, including the industrial sector and innovation in the business model, provide valuable insights for project practitioners and researchers. The study encourages the integration of entrepreneurship and organizational theory into PM models, fostering a more comprehensive understanding of entrepreneurial project success.

8. Conclusions

The evaluation of the success of an entrepreneurial project at the implementation stage is closely tied to the economic sustainability of the resulting company, the project's efficiency, and indicators of organizational effectiveness. As it stands, project management theory is insufficient to comprehensively cover all the constructs, definitions, and propositions necessary to support this assessment. Consequently, evaluating the success of entrepreneurial projects requires a theoretical dialogue that encompasses project theory, entrepreneurship, and organizational theory.

During the implementation stage, critical success factors are identified for entrepreneurial projects, such as the industrial sector and innovation in the business model. The study establishes that the success of entrepreneurial projects during implementation does not exhibit a direct relationship with the success achieved in the subsequent product stage. This idea emphasizes the need for a nuanced and specific understanding of the stages involved in evaluating success in entrepreneurial projects.

The study underscores the importance of integrating entrepreneurship and organizational theory into project management models to achieve a more comprehensive and personalized approach for evaluating the success of entrepreneurial projects. By recognizing the unique nature of these projects and considering efficiency, organizational effectiveness, and product quality indicators, practitioners and researchers can better navigate the complexities inherent in entrepreneurial efforts.

In essence, the conclusions drawn from this study contribute to refining the understanding of the success of entrepreneurial projects, advocating for a more holistic and context-specific approach that goes beyond traditional project management paradigms. This combined perspective recognizes the multifaceted nature of entrepreneurial projects, paving the way for further theoretical development and practical application at the dynamic intersection of project management, entrepreneurship, and organizational theory.

Among the limitations of the study, it should be noted that the study looked for success factors of the entrepreneurial project using three different variables: the industrial sector, innovation in the business model, and the entrepreneur's profile. The data analyzed failed to support the hypotheses related to the entrepreneur's profile, which indicates that the categorization made by Emprender Fond to recruit its entrepreneurs does not affect the success of the project. In this sense, there is a latent need to deepen the search for success factors related to the entrepreneur's profile, so it is pertinent to ask: What characteristics of the entrepreneur have a positive influence on the success of the project? The theory of entrepreneurship in the line of individual entrepreneurial orientation offers an adequate framework for searching for such factors.

Abbreviations

AVE	Average Variance Extracted
BM	Business Model
CPR	Product quality
CSF	Critical Success Factors
CUE	Compliance in employment generation
CUM	Compliance in marketing management
CUP	Budget management compliance
CUT	Timely compliance (schedule)
DPR	Production compliance
DVE	Sales compliance
EBO	Established Business Ownership
EF	Emprender Fund
EFO	Organizational Effectiveness
EPR	Project Efficiency
EXI1	Success in the implementation stage
EXI2	Success of the product
GEM	Global Entrepreneurship Monitor methodology
HTMT	Discriminant validity
IBM	Business Model Innovation
MSMEs	Medium-Sized Businesses
PDE	Entrepreneur Profile
PM	Project Management
RUES	Single Business Registry
SENA	National Learning Service
SIN	Industrial Sector
SOS	Sustainability of the company at the time of project closure
TEA	Total Early-stage Entrepreneurial Activity

9. Acknowledgments

The authors would like to thank SENA and the University of Sucre, Colombia, for their help and collaboration in this work.

References

Aga, D. A., Noorderhaven, N., & Vallejo, B. (2016). Transformational leadership and project success: The mediating role of team-building. *International Journal of Project Management*, *34*(5), 806–818. https://doi.org/10.1016/j.ijproman.2016.02.012

Al-Kwifi, O. S., Petrovska, I., Parast, M., & Safari, A. (2023). Individual entrepreneurial orientation, self-efficacy, and managerial skills for project performance: an integrated structural approach and analysis. *Journal of Entrepreneurship in Emerging Economies, 15*(6), 1634–1657. https://doi.org/10.1108/JEEE-09-2021-0355

Altman, E. I. (1968). Financial Ratios, Discriminant Analysis and the Prediction of Corporate Bankruptcy. *The Journal of Finance*, *23*(4), 589. https://doi.org/10.2307/2978933

Araki, M., & Martins, H. C. (2023). Creativity governance: A conceptual framework for tailoring governance to the creativity and uncertainty in entrepreneurial projects. *European Management Review*. https://doi.org/10.1111/emre.12607

Asquin, A., Roland, C., & Christophe S. (2011, November 3-4). *Studying entrepreneurial project: opportunities and new avenues in the field of entrepreneurship research.* 1st International Conference in Entrepreneurship, Innovation and SMEs, Caen, France.

Atkinson, R. (1999). Project management: Cost, time and quality, two best guesses and a phenomenon, its time to accept other success criteria. *International Journal of Project Management*, *17*(6), 337–342. https://doi.org/10.1016/S0263-7863(98)00069-6

Auschra, C., Braun, T., Schmidt, T., & Sydow, J. (2019). Patterns of project-based organizing in new venture creation: Projectification of an entrepreneurial ecosystem. *International Journal of Managing Projects in Business*, *12*(1), 48–70. https://doi.org/10.1108/IJMPB-01-2018-0007

Belassi, W., & Tukel, O. I. (1996). A new framework for determining critical success/failure factors in projects. *International Journal of Project Management*, *14*(3), 141–151. https://doi.org/10.1016/0263-7863(95)00064-X

Belousova, O., Benoît G., & Olivier, B. (2010, June 09-13). *A conceptual model of Corporate Entrepreneurial Behavior.* "Cre Cis." Babson College Entrepreneurship Research Conference, Lausanne, Switzerland.

Cheah, J. H., Sarstedt, M., Ringle, C. M., Ramayah, T., & Ting, H. (2018). Convergent validity assessment of formatively measured constructs in PLS-SEM: On using single-item versus multi-item measures in redundancy analyses. *International Journal of Contemporary Hospitality Management*, *30*(11), 3192–3210. https://doi.org/10.1108/IJCHM-10-2017-0649

Cooke-Davies, T. (2002). The "real" success factors on projects. *International Journal of Project Management*, *20*(3), 185–190. https://doi.org/10.1016/S0263-7863(01)00067-9

Crawford, L., Hobbs, J. B., & Turner, J. R. (2005). *Project Categorization Systems: Aligning Capability with Strategy for Better Results*. *Project Management Institute* (Vol. 37, p. 171). Newtown Square, PA: Project Management Institute.

De Carvalho, M. M., & Rabechini Junior, R. (2015, January 17). Impact of risk management on project performance: The importance of soft skills. *International Journal of Production Research 53*(2*),* 321-40. https://doi.org/10.1080/00207543.2014.919423

Diallo, A., & Thuillier, D. (2004). The success dimensions of international development projects: The perceptions of African project coordinators. *International Journal of Project Management*, *22*(1), 19–31. https://doi.org/10.1016/S0263-7863(03)00008-5

Di Muro, P., & Turner, J. R. (2018). Entrepreneurial opportunity pursuit through business model transformation: a project perspective. *International Journal of Project Management*, *36*(7), 968–979. https://doi.org/10.1016/j.ijproman.2018.07.001

Fonrouge, C., Bredillet, C., & Fouché, C. (2019). Entrepreneurship and project management relationships: So far so good? Dialogic conversation and Luhmannian perspective. *International Journal of Managing Projects in Business*, *12*(1), 6–24. https://doi.org/10.1108/IJMPB-01-2018-0013

Hair, J. F., Risher, J. J., Sarstedt, M., & Ringle, C. M. (2019, January 14). When to use and how to report the results of PLS-SEM. *European Business Review 31*(1): 2-24. https://doi.org/10.1108/EBR-11-2018-0203

Hair, Joseph F., Hult, G. T. M., Ringle, C. M., Sarstedt, M., Danks, N. P., & Ray, S. (2021). *Partial Least Squares Structural Equation Modeling (PLS-SEM) Using R.: A Workbook*. Springer Cham.

Hair, J. F., Ringle, C. M., Hult, G. T. M., & Sarstedt, M. (2022). *A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM)*. *Long Range Planning* (Vol. 46, pp. 184–185). Sage.

Hannan, M. T., & Freeman, J. (1984). Structural Inertia and Organizational Change. *American Sociological Review*, *49*(2), 149. https://doi.org/10.2307/2095567

Hoegl, M., & Gemuenden, H. G. (2001). Teamwork Quality and the Success of Innovative Projects: A Theoretical Concept and Empirical Evidence. *Organization Science*, *12*(4), 435–449. https://doi.org/10.1287/orsc.12.4.435.10635

Ika, L. A. (2009). Project Success as a Topic in Project Management Journals. *Project Management Journal*, *40*(4), 6–19. https://doi.org/10.1002/pmj.20137

Ika, L. A., Diallo, A., & Thuillier, D. (2012). Critical success factors for World Bank projects: An empirical investigation. *International Journal of Project Management*, *30*(1), 105–116. https://doi.org/10.1016/j.ijproman.2011.03.005

Joslin, R., & Müller, R. (2015). Relationships between a project management methodology and project success in different project governance contexts. *International Journal of Project Management*, *33*(6), 1377–1392. https://doi.org/10.1016/j.ijproman.2015.03.005

Jugdev, K., & Moller, R. (2006). A retrospective look at our evolving understanding of project success. *IEEE Engineering Management Review*, *34*(3), 110–127. https://doi.org/10.1109/EMR.2006.261387

Kaufmann, C., & Kock, A. (2022). Does project management matter? The relationship between project management effort, complexity, and profitability. *International Journal of Project Management*, *40*(6), 624–633. https://doi.org/10.1016/j.ijproman.2022.05.007

Khan, K., Turner, R., & Maqsood, T. (2013, June 17-19). *Factors that Influence the Success of Public Sector Projects in Pakistan.* IRNOP XI Conference, Oslo, Norway. https://doi.org/10.13140/2.1.4832.9605.

Kuura, A., & Lundin, R. A. (2019). Process perspectives on entrepreneurship and projects. *International Journal of Managing Projects in Business*, *12*(1), 25–47. https://doi.org/10.1108/IJMPB-12-2017-0165

Kuura, A., Blackburn, R. A., & Lundin, R. A. (2014). Entrepreneurship and projects-Linking segregated communities. *Scandinavian Journal of Management*, *30*(2), 214–230. https://doi.org/10.1016/j.scaman.2013.10.002

Laursen, M., & Killen, C. P. (2019). Programming for holistic value creation: collaboration, coordination and perception. *International Journal of Managing Projects in Business*, *12*(1), 71–94. https://doi.org/10.1108/IJMPB-01-2017-0009

Lundin, R. A., Arvidsson, N., Brady, T., Ekstedt, E., Midler, C., & Sydow, J. (2015). *Managing and Working in Project Society: Institutional Challenges of Temporary Organizations* (pp. 1–274). Cambridge University Press. https://doi.org/10.1007/9781139939454

Lundin, R. A. (2016). Project Society: Paths and Challenges. *Project Management Journal*, *47*(4), 7–15. https://doi.org/10.1177/875697281604700402

Macheridis, N. (2009). *Agility in entrepreneurial projects*. Lund University Working Paper Series.

Mallik, A. K. (2023). The future of the technology-based manufacturing in the European Union. *Results in Engineering*, *19*(15), 101356. https://doi.org/10.1016/j.rineng.2023.101356

Martens, C. D. P., Machado, F. J., Martens, M. L., Silva, F. Q. P. de O. e., & Freitas, H. M. R. de. (2018). Linking entrepreneurial orientation to project success. *International Journal of Project Management*, *36*(2), 255–266. https://doi.org/10.1016/j.ijproman.2017.10.005

Martínez-Romero, A. C., Moreno-Barragán, J. A., Pereira-Laverde, F., Osorio-Tinoco, F. F., López-Lambraño, M., Schmutzler, J., Gómez-Núñez, L., Santiago-Martínez, V. Parra-Bernal, L. D., Orozco-Triana, J. A. (2023). *Actividad empresarial en Colombia 2022-2023: En camino hacia la reactivación*. Editorial Universidad ICESI. https://doi.org/10.18046/eui/gem.2023.

Martins, J. M., Shahzad, M. F., & Xu, S. (2023). Factors influencing entrepreneurial intention to initiate new ventures: evidence from university students. *Journal of Innovation and Entrepreneurship*, *12*(1), 1-27. https://doi.org/10.1186/s13731-023-00333-9

Mbiru, J., Wickham, M. D., & Ayentimi, D. T. (2020). Introducing an entrepreneurial project management model. *Journal of Modern Project Management*, *7*(4), 192–212. https://doi.org/10.19255/JMPM02209

Mbiru, J. E., Ayentimi, D. T., & Wickham, M. (2023). Does entrepreneurial project monitoring and controlling process matter in social enterprises? Evidence from a developing African country. *International Journal of Project Management*, *41*(1), 1-12. https://doi.org/10.1016/j.ijproman.2022.102435

Meredith, J. R., & Zwikael, O. (2020). Achieving strategic benefits from project investments: Appoint a project owner. *Business Horizons*, *63*(1), 61–71. https://doi.org/10.1016/j.bushor.2019.09.007

Midler, C. (1995). "Projectification" of the firm: The renault case. *Scandinavian Journal of Management*, *11*(4), 363–375. https://doi.org/10.1016/0956-5221(95)00035-T

Mir, F. A., & Pinnington, A. H. (2014). Exploring the value of project management: Linking Project Management Performance and Project Success. *International Journal of Project Management*, *32*(2), 202–217. https://doi.org/10.1016/j.ijproman.2013.05.012

Moya-Clemente, I., Ribes-Giner, G., & Pantoja-Díaz, O. (2020). Identifying environmental and economic development factors in sustainable entrepreneurship over time by partial least squares (PLS). *PLoS ONE*, *15*(9 september). https://doi.org/10.1371/journal.pone.0238462

Müller, R., & Jugdev, K. (2012, September 7). Critical success factors in projects: Pinto, Slevin, and Prescott – the elucidation of project success. *International Journal of Managing Projects in Business* 5(4), 757-775. Emerald Group Publishing Ltd. https://doi.org/10.1108/17538371211269040

Müller, R., & Turner, J. R. (2007a). Matching the project manager's leadership style to project type. *International Journal of Project Management*, *25*(1), 21–32. https://doi.org/10.1016/j.ijproman.2006.04.003

Müller, R., & Turner, R. (2007b). The Influence of Project Managers on Project Success Criteria and Project Success by Type of Project. *European Management Journal*, *25*(4), 298–309. https://doi.org/10.1016/j.emj.2007.06.003

Musawir, A. ul, Serra, C. E. M., Zwikael, O., & Ali, I. (2017). Project governance, benefit management, and project success: Towards a framework for supporting organizational strategy implementation. *International Journal of Project Management*, 35(8), 1658–1672. https://doi.org/10.1016/j.ijproman.2017.07.007

OECD/Eurostat. (2005). *Oslo Manual: Guidelines for Collecting and Interpreting Innovation Data, 3rd Edition, The Measurement of Scientific and Technological Activities*. *Communities* (Vol. Third edit, p. 166). Paris: OECD Publishing. https://doi.org/10.1787/9789264065659-es.

Osterwalder, A., & Pigneur, Y. (2011). Generación de modelos de negocio: un manual para visionarios, revolucionarios y retadores. *Barcelona: Deustos SA Ediciones*, *13*(2), 180–181.

Pinto, J. K., & Slevin, D. P. (1988). Project Success : Definitions and Measurement Techniques. *Project Management Journal* *19*(1):67–72.https://www.pmi.org/learning/library/project-success-definitions-measurement-techniques-5460.

Quinn, R. E., & Rohrbaugh, J. (1983). Spatial model of effectiveness criteria: towards a competing values approach to organizational analysis. *Management Science*, *29*(3), 363–377. https://doi.org/10.1287/mnsc.29.3.363

Sabahi, S., & Parast, M. M. (2020). The impact of entrepreneurship orientation on project performance: A machine learning approach. *International Journal of Production Economics*, *226*, 10762. https://doi.org/10.1016/j.ijpe.2020.107621

Sajid, M., Zaidi, S., Haq, S. U. L., Chugtai, M. A., & Ahmed, A. (2021). Linking entrepreneurial orientation to project success in construction projects. *Journal of Project Management (Canada), 6*(2), 61–72. https://doi.org/10.5267/j.jpm.2021.2.001

Sarasvathy, S. D. (2001). Causation and effectuation: Toward a theoretical shift from economic inevitability to entrepreneurial contingency. *Academy of Management Review*, *26*(2), 243–263. https://doi.org/10.5465/AMR.2001.4378020

Sarstedt, M., Hair, J. F., Cheah, J. H., Becker, J. M., & Ringle, C. M. (2019). How to specify, estimate, and validate higher-order constructs in PLS-SEM. *Australasian Marketing Journal*, *27*(3), 197–211. https://doi.org/10.1016/j.ausmj.2019.05.003

Serrador, P., & Turner, R. (2015). The relationship between project success and project efficiency. *Project Management Journal*, *46*(1), 30–39. https://doi.org/10.1002/pmj.21468

Servicio Nacional de Aprendizaje SENA. (2019). *Modelo de emprendimiento SENA más que una misión una pasión*. E. y D.E. en Mesoamérica.

Sharma, N., & Singh, R. K. (2019, June 26). A unified model of organizational effectiveness. *Journal of Organizational Effectiveness*. Emerald Group Holdings Ltd. https://doi.org/10.1108/JOEPP-10-2018-0084

Shekarian, M., & Parast, M. (2021). Do Entrepreneurship Skills Improve Project Performance? A Project-Based Learning Perspective. *Journal of Entrepreneurship*, *30*(2), 267–305. https://doi.org/10.1177/09713557211025653

Shenhar, A. J., & Dvir, D. (2007). *Reinventing Project Management: the diamond approach to successful growth and innovation*. Harvard Business School Press Boston.

Shenhar, A. J., Tishler, A., Dvir, D., Lipovetsky, S., & Lechler, T. (2002). Refining the search for project success factors: A multivariate, typological approach. *R and D Management*, *32*(2), 111–126. https://doi.org/10.1111/1467-9310.00244

Shenhar, A. J., Dvir, D., Levy, O., & Maltz, A. C. (2001). Project success: A multidimensional strategic concept. *Long Range Planning*, *34*(6), 699–725. https://doi.org/10.1016/S0024-6301(01)00097-8

Shepherd, D. A., & Patzelt, H. (2013). Operational entrepreneurship: How operations management research can advance entrepreneurship. *Production and Operations Management*, *22*(6), 1416–1422. https://doi.org/10.1111/j.1937-5956.2011.01264.x

Söderlund, J. (2011). Pluralism in Project Management: Navigating the Crossroads of Specialization and Fragmentation. *International Journal of Management Reviews*, *13*(2), 153–176. https://doi.org/10.1111/j.1468-2370.2010.00290.x

Soila-wadman, Marja. (2009, Sept. 9-10). *Entrepreneurship and film making: Translation of ideas in the initial phase of a film project needs attention*. International Conference, School of Art and Design, Helsinki, Finland.

Sońta-Drączkowska, E., & Mrożewski, M. (2020). Exploring the Role of Project Management in Product Development of New Technology-Based Firms. *Project Management Journal*, *51*(3), 294–311. https://doi.org/10.1177/8756972819851939

Suwaed, M. S., Alturki, S. F., Ghareeb, A., Al-Rubaye, A. H., & Awad, O. I. (2023). Techno-economic feasibility of various types of solar collectors for solar water heating systems in hot and semi-arid climates: A case study. *Results in Engineering*, *20*. https://doi.org/10.1016/j.rineng.2023.101445

Teece, D. J. (2010). Business models, business strategy and innovation. *Long Range Planning*, *43*(2–3), 172–194. https://doi.org/10.1016/j.lrp.2009.07.003

Turner, R. J., Huemann, M., Anbari, F. T., & Bredillet, C. N. (2010). *Perspectives on Projects*. Taylor & Francis Group. https://doi.org/10.4324/9780203891636.

Varela, R., & Soler L. J. D. (2015). *La Tubería Empresarial Aplicada a Algunos Países del Caribe. In Formación, Innovación y Éxito Empresarial*. Editorial Universidad Icesi. doi:10.2307/jj.5329379.12.

Zott, C., & Amit, R. (2010). Business model design: An activity system perspective. *Long Range Planning*, *43*(2–3), 216–226. https://doi.org/10.1016/j.lrp.2009.07.004

Zwikael, O., & Meredith, J. R. (2018). Who's who in the project zoo? The ten core project roles. *International Journal of Operations and Production Management*, *38*(2), 474–492. https://doi.org/10.1108/IJOPM-05-2017-0274