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INFORMATION ECONOMY AND ENTREPRENEURIAL ECOSYSTEM: PROPOSAL FOR A MEASUREMENT SCALE

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ABSTRACT

The entrepreneurial ecosystem is a key lever for stimulating investment, fostering business creation, and strengthening local economic development. It relies on the availability and effective dissemination of information, thereby facilitating access to opportunities, interactions among economic actors, and strategic decision-making. The information economy plays a central role in this dynamic by enabling better structuring of territories and reducing uncertainties related to entrepreneurship. In this context, this study proposes a measurement scale designed to assess the accessibility and circulation of information within a territory. Several dimensions are considered, including the visualization of the economic environment, the identification of local skills, access to sectoral databases, and the organization of events that promote exchanges among stakeholders. By measuring these elements, it becomes possible to identify improvement levers and optimize territorial development strategies. The analysis and optimization of these factors contribute to strengthening the competitiveness and economic attractiveness of territories, while offering entrepreneurs a structured environment conducive to innovation and growth. This approach thus constitutes a valuable tool for decision-makers seeking to promote inclusive and sustainable economic development.

KEYWORDS: Information Economy; Entrepreneurial Ecosystem; Territorial Communication; Territorial Competitiveness; Economic Attractiveness.

1. INTRODUCTION

In an economic context marked by territorial competition and the rise of technological industries, the entrepreneurial ecosystem has become a major lever for stimulating investment, encouraging business creation, and energizing local economic development. The availability and efficient circulation of information appear as essential conditions for facilitating access to opportunities, streamlining interactions among economic actors, and supporting strategic decision-making. The information economy thus plays a key role in structuring territories and reducing entrepreneurial uncertainty.

The research problem centers on the perception of ICT entrepreneurs and the impact of territorial marketing positioning on their decision to establish themselves in Rabat. The aim is to understand to what extent the investment climate influences their motivations. Furthermore, accessibility and dissemination of information remain uneven and insufficiently measured, limiting the effectiveness of territorial development strategies. Hence the question:

How can the accessibility and circulation of information within a territory be measured and evaluated in order to optimize the functioning of the entrepreneurial ecosystem and strengthen local economic development?

This study aims to evaluate information accessibility and circulation within the city of Rabat, through a specifically developed measurement scale. It targets a sample of 74 entrepreneurs operating in the information and communication technology sector. Through several dimensions, the scale identifies improvement levers and optimizes territorial development strategies.

The analysis relies on reliability indicators of the proposed measurement scale, ensuring the robustness of the results. It aims to inform decision-makers about the expectations of digital entrepreneurs and offer recommendations to strengthen Rabat's competitiveness and attractiveness as a major technological hub.

2. THEORETICAL FRAMEWORK

2.1. Territorial Intelligence

Territorial intelligence has undergone significant renewal, emerging as a strategic framework that supports sustainable development, strengthens collective action, and enhances territorial competitiveness. Recent research shows that it enables territories to better observe, interpret, and anticipate

socio-economic and environmental transformations, thus fostering resilient and coherent policymaking (García-Madurga, 2020). Studies also highlight its crucial role in structuring networks of public, private, and civil actors to link strategic development goals with territorial planning, reinforcing governance and the mobilization of resources (Ferdj & Djeflat, 2024). Territorial intelligence has further been recognized as a mechanism that promotes innovation, entrepreneurship, and knowledge sharing by fostering participatory governance and collaborative decision-making among diverse stakeholders (Montoya Delgadillo, 2022). It operates as an intermediary system that improves access to information, enhances foresight, and strengthens local capacities, particularly in supporting SMEs and boosting territorial resilience (Chakir, 2023). Recent work also emphasizes its connection to territorial human capital, showing that the development of competencies and learning dynamics is essential for territories to adapt to technological and economic change (2023 study on governance of territorial human capital). Additionally, territorial intelligence has expanded into sectoral applications such as tourism, where it helps rebuild destination resilience; into regional development, where it supports the reduction of inequalities; and into African economic integration, where it fosters strategic information sharing and regional coordination (Latin America tourism, 2024; Morocco territorial inequalities, 2024; African integration, Anass 2025). Overall, contemporary literature demonstrates that territorial intelligence is now a multidimensional process that strengthens territorial attractiveness, secures investment, and builds sustainable competitive advantages by integrating information systems, governance mechanisms, human capital development, and collective intelligence.

2.2. Information Economy

In territories where economic activities are expanding, information and data have become indispensable strategic resources that shape the performance and competitiveness of organizations. Recent research confirms that high-quality, accessible, and well-managed information significantly enhances firms' capacity to reduce uncertainty and allocate resources efficiently, echoing early theoretical insights by North and Thomas (1973) and Arrow (1974) but now reinforced by contemporary evidence. For instance, knowledge management processes—such as knowledge creation, sharing, and integration—have been shown to positively influence innovation capability and organizational performance in dynamic environments (Hernández-Linares et al., 2023). The growing digitalization of economies further amplifies

this effect: organizations equipped with robust information systems and data-governance practices achieve superior strategic decision-making and adaptability (González-Loureiro & Dorrego, 2022). Studies also show that SMEs can significantly strengthen competitiveness by evolving into data-driven firms through structured stages of data valuation, capability building, and analytical deployment (Pereira *et al.*, 2025). In line with March and Simon's (1958) foundational argument that innovative decisions depend on the ability to process relevant information, recent empirical work demonstrates that timely access to high-quality data accelerates managerial innovation and fosters organizational agility (Maldonado-Guzmán *et al.*, 2021). Furthermore, Teece's (2007) concept of dynamic capabilities is reaffirmed in recent analyses showing that firms with strong information-processing and sensing capacities gain substantial competitive advantages in rapidly changing markets (Razaq *et al.*, 2024). Beyond internal processes, information also shapes the external environment by increasing market transparency, accelerating competitive interactions, and enhancing firms' responsiveness to global pressures—dynamics widely acknowledged in recent strategic-management literature (Ben Arfi & Hikkerova, 2023). As Davenport and Prusak (1998) initially argued, knowledge management today extends far beyond storing data: it involves intelligent interpretation and strategic exploitation of information to anticipate change, support innovation, and sustain long-term territorial and organizational performance.

2.3. Research Problematic

The objective of this research is to propose territorial tools—particularly those related to the marketing positioning of a territory—in order to analyze their influence on the location decisions of entrepreneurs operating in the ICT sector. Using the case of Rabat, and considering its urban characteristics, institutional status, and strategic positioning, the core research question becomes:

How can the accessibility and circulation of information within a territory be measured and evaluated in order to optimize the functioning of the entrepreneurial ecosystem and strengthen local economic development?

Building on the foundational theories of the information economy (Machlup, 1962; Porat, 1977), this study examines how territorial information—such as signals, reputation, and intangible assets—affects strategic decision-making in sectors that rely heavily on information flows and knowledge-based resources.

2.4. Territory Selection and Presentation of the Research Field

2.4.1. Presentation of Rabat

Rabat, Morocco's political and administrative capital, forms an integrated socio-economic space with its neighboring cities, Salé and Temara. Its development has strengthened its regional and national role. Besides its administrative function, Rabat hosts economic, industrial, and artisanal activities and benefits from major hospital, university, and research infrastructures. Its strategic geographical position reinforces its complementarity with Casablanca.

2.4.2. Study Area: Rabat-Salé-Kenitra (RSK) Region

The research area is located within the RSK region, characterized by morphological and strategic polycentricity. Due to limited direct access to institutional data, the study adopts a multidisciplinary approach based on document analysis, including UN-Habitat, Policy Center for the New South, and regional reports.

3. RESEARCH METHODOLOGY

3.1. Churchill Paradigm

The development of the measurement instrument followed a rigorous, multi-stage process consistent with established methodological guidelines for scale construction in the social sciences. The first stage involved defining the conceptual domain of the construct, an essential step emphasized by Churchill (1979) and DeVellis (2017) as the foundation of any valid measurement scale. This stage relied on an extensive and systematic review of the literature to delineate the theoretical boundaries of the construct and clarify its underlying dimensions. Based on this conceptual specification, an initial pool of items was generated. In line with Hinkin (1998), item generation drew on both theoretical insights from prior research and an examination of the empirical context to ensure the relevance, clarity, and representativeness of the proposed items.

The second stage consisted of empirical data collection. A structured questionnaire was administered to entrepreneurs operating in the information and communication technologies (ICT) sector within the Rabat region. Once collected, the data were subjected to an exploratory phase of scale refinement. Following Churchill (1979) and Hair *et al.* (2019), exploratory factor analysis (EFA) and Cronbach's alpha were used to identify the latent dimensions of the construct, assess internal consistency, and eliminate items that failed to load appropriately or contributed weakly to reliability.

The measurement purification phase involved iterative assessments using Cronbach's alpha and repeated EFA procedures, as recommended by DeVellis (2017). This process aimed to remove redundant, ambiguous, or poorly performing items in order to enhance the psychometric robustness of the scale.

The third stage focused on confirming the reliability and validity of the measurement model. Confirmatory factor analysis (CFA) was conducted using the guidelines provided by Hair et al. (2019) to verify the stability of the factor structure emerging from the exploratory phase. Reliability was assessed through multiple indicators, including Cronbach's alpha and the Rho_A coefficient, which offer complementary measures of internal consistency and construct reliability (Henseler, 2017). Construct validity—encompassing both convergent and discriminant validity—was also evaluated through CFA, ensuring that the retained items accurately and uniquely represented the conceptual domain they were intended to measure (Bagozzi & Yi, 1988; Fornell & Larcker, 1981).

This structured and theoretically grounded approach ensured the development of a reliable, valid, and contextually appropriate measurement instrument for analyzing entrepreneurial dynamics in ICT-based territorial settings.

Table 1: The Development of Measurement Tools Follows Churchill's Paradigm.

Development Procedure	Technique Used
Specify domain	Literature review
Generate items	Literature + contextual analysis
Data collection	SMEs in the ICT sector in Rabat
Select dimensions	Cronbach's alpha + Exploratory Factor Analysis
Purify the scale	Cronbach's alpha + Exploratory Factor Analysis
Assess reliability	Confirmatory Factor Analysis (PLS)
Assess validity	Confirmatory Factor Analysis

3.2. Generation of Explanatory Variables

The information economy remains a fundamental production factor, as knowledge has increasingly been recognized as a strategic intangible asset. Recent studies on entrepreneurial ecosystems and knowledge management reaffirm that territories endowed with strong information infrastructures and effective knowledge-sharing practices offer a more favorable environment for entrepreneurial activity and innovation (Leal, Leal & Silva, 2025). In such contexts, the availability, quality, and governance of information become key variables that shape both individual and collective economic behavior. For example, entrepreneurs benefit from a

clear visualization of the economic environment, which provides clarity on market structure, competition, and sectoral opportunities (as part of territorial attractiveness frameworks) — a condition echoed by recent regional development research emphasizing the importance of information connectivity and attractiveness metrics.

Furthermore, recent empirical evidence suggests that local human capital, skills and knowledge-base mapping significantly influence where entrepreneurs choose to locate their ventures. A 2025 study using the "capability approach" argues that what resources and opportunities are available in a given urban location materially affect entrepreneurial potential and success. In territories where data on local skills, infrastructure, and sectoral information are properly organized and accessible, entrepreneurs are better equipped to build viable and innovative businesses, especially in knowledge-intensive or ICT sectors.

In addition, the role of territorial marketing and positioning as part of information economy processes has gained new empirical support. A 2024 study on territorial marketing demonstrated that cities or regions that successfully communicate their assets, economic potential, and strategic profile achieve greater regional competitiveness, attract more entrepreneurs and investment, and increase the attractiveness of the territory for new ventures. Similarly, research on "territorial entrepreneurial systems" shows that territories can actively shape sustainable urban transitions by mobilizing information, resources, and entrepreneurial energies — thereby supporting new business creation and territorial development.

Moreover, recent work in rural and peripheral territories indicates that availability of infrastructure, human capital, and investment-relevant information correlates significantly with the propensity for entrepreneurial activity. In rural Spain, for example, factors such as road infrastructure, human capital levels, and access to economic and sectoral data were strongly linked to higher rates of rural entrepreneurship. This demonstrates that whether in urban or rural contexts, the quality and accessibility of information and data across a broad set of variables from economic environment scanning to human-capital mapping shape entrepreneurial decisions and territorial outcomes.

3.3. Data Examination and Statistical Analyses

The preliminary examination of the data, conducted using SPSS and v24, enabled filtering of the dataset, verification of frequency distributions,

normality testing, reliability assessment, and execution of an exploratory factor analysis (EFA). Such preliminary diagnostics follow the recommendations of Hair *et al.* (2019) and Tabachnick & Fidell (2013), who emphasize the importance of detecting missing values, identifying outliers, and ensuring overall data adequacy before proceeding to advanced statistical modeling.

3.4. Sample Size and Data Collection

Structural Equation Modeling (SEM) was performed using the Partial Least Squares (PLS) approach. The sample size of 74 respondents was determined in alignment with commonly cited empirical rules for SEM. Roscoe (1975) suggests that sample sizes between 30 and 500 are generally appropriate for multivariate analysis, while Comrey & Lee (1992) classify samples of 50 as poor, 100 as fair, and 200 as good. Additionally, Kline (2016) notes that smaller samples may be acceptable when model complexity is limited. These benchmarks, combined with the logic of the PLS-SEM approach, support the adequacy of the sample size for this study.

Online administration via Google Forms ensured that no missing values were recorded. The self-administered questionnaires yielded a negligible rate of missing data, consistent with methodological standards that consider less than 5% missingness acceptable (Little & Rubin, 2019). Descriptive statistics included mean, standard deviation, skewness, and kurtosis. Although Likert scales are formally ordinal, their treatment as metric variables are widely accepted in social science research when underlying distributions approximate continuity (Carifio & Perla, 2008; Norman, 2010).

3.5. Exploratory and Confirmatory Factor Analyses

The confirmatory factor analysis (CFA), undertaken following the exploratory phase, used the PLS (Partial Least Squares) approach to test the structural equation model and evaluate relationships among latent variables. PLS-SEM is widely recommended for exploratory and predictive research, small samples, and non-normal data (Chin,

1998; Henseler, Ringle & Sinkovics, 2009; Hair *et al.*, 2021). Although the sample size did not fully meet the traditional “ten-times rule,” recent methodological developments argue that this rule is overly simplistic and that PLS-SEM remains appropriate when model complexity is high or statistical power is limited (Hair *et al.*, 2021; Kock & Hadaya, 2018).

3.6. Measurement Model Evaluation

The evaluation of the measurement model incorporated standard reliability and validity criteria. Internal consistency was assessed through Cronbach’s alpha, rho_A, and composite reliability, as recommended by Hair *et al.* (2019) and Henseler (2017). Convergent validity was examined through the Average Variance Extracted (AVE), with a threshold of $AVE \geq 0.50$ following Fornell & Larcker (1981). Discriminant validity was verified using cross-loadings and the Fornell-Larcker criterion (Fornell & Larcker, 1981), supplemented by more recent recommendations to ensure construct separation (Henseler *et al.*, 2015).

4. RESULTS

4.1. Descriptive Statistics

The descriptive analysis of the latent variable “Information Economy” shows mean values ranging from 3.30 to 3.55, indicating a moderate perceived importance of information-related factors among entrepreneurs. Standard deviations above 1 reflect substantial variability in responses, suggesting heterogeneous perceptions across the sample. All skewness coefficients are negative, revealing right-skewed distributions in which respondents tend to give higher ratings to the items. Similarly, all kurtosis coefficients are negative, indicating platykurtic distributions characterized by flatter curves and less concentration around the mean. Overall, these descriptive results highlight moderate agreement, notable variability, and non-normal item distributions—patterns that support the subsequent use of PLS-SEM for further measurement and structural analysis.

Table 2: Descriptive Statistics of the Construct Information Economy.

Item Code	Mean	Standard Deviation	Skewness	Std. Error (Skewness)	Kurtosis	Std. Error (Kurtosis)
visualization of the economic environment	3.311	1.4705	-0.427	0.279	-1.255	0.552
visualization of the skills of local actors	3.432	1.1714	-0.175	0.279	-1.156	0.552
availability of information related to investment and business creation	3.554	1.3048	-0.407	0.279	-0.945	0.552
organization of conferences and events on investment	3.243	1.3830	-0.101	0.279	-1.352	0.552
availability of access to sectoral data	3.297	1.3920	-0.335	0.279	-1.160	0.552
availability of information related to regulated activities	3.459	1.2185	-0.160	0.279	-1.284	0.552
availability of databases on profiles and skills	3.324	1.3045	-0.212	0.279	-1.093	0.552

4.2. Scale Purification

The reliability and factor structure analysis of the variable Information Economy shows very strong internal consistency across all items. The corrected item-total correlations range from 0.747 to 0.880, all well above the commonly recommended minimum threshold of 0.50 (Hair et al., 2019), indicating that each item contributes meaningfully to the construct and aligns strongly with the overall scale. Items with correlations above 0.70 reflect excellent levels of homogeneity within the scale.

The values for Cronbach's Alpha if Item Deleted range from 0.935 to 0.946, very close to the global Cronbach's alpha of the scale. These results show that removing any item would not improve the reliability of the scale; in some cases, it would slightly reduce it. This demonstrates that all seven items are relevant, coherent, and should be retained in the final measurement model.

Furthermore, the relatively consistent values of scale mean if item deleted and variance if item deleted indicate that no item introduces instability or disproportionate variance into the scale. The items with the highest corrected item-total correlations—such as organization of conferences and events on investment (0.880), visualization of the economic environment (0.849), and visualization of local actors'

skills (0.854)—appear to be particularly strong indicators of the latent construct.

Overall, the results confirm that the scale measuring the Information Economy is psychometrically robust, internally consistent, and suitable for subsequent confirmatory factor analysis (CFA). All items contribute significantly to the construct and should be retained in the final model.

Table 3: Reliability statistics.

Cronbach's Alpha	Number of Items	
0.948	7	

The reliability analysis shows a Cronbach's alpha of 0.948 for the seven items measuring the "Information Economy" construct. This value is well above the commonly accepted threshold of 0.70 (Nunnally & Bernstein, 1994), indicating excellent internal consistency. An alpha greater than 0.90 is typically interpreted as reflecting a highly reliable scale, where the items demonstrate strong coherence and measure the same underlying construct with precision. The result suggests that the scale is psychometrically robust and suitable for use in subsequent analyses, such as confirmatory factor analysis (CFA) and structural equation modeling (SEM). No item removal is necessary, as the scale already demonstrates optimal internal reliability.

Table 4: Reliability And Factor Structure of the Variable "Information Economy".

Item	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
visualization of the economic environment	20.311	46.272	0.849	0.938
visualization of the skills of local actors	20.189	49.909	0.854	0.938
availability of information related to investment and business creation	20.068	49.626	0.766	0.944
organization of conferences and events on investment	20.378	46.841	0.880	0.935
availability of access to sectoral data	20.324	47.044	0.861	0.936
availability of information related to regulated activities	20.162	50.932	0.747	0.946
availability of databases of profiles and skills	20.297	48.732	0.823	0.940

The reliability analysis shows that all items contribute strongly to the internal consistency of the scale, with corrected item-total correlations ranging from 0.747 to 0.880, indicating excellent alignment with the underlying construct. Cronbach's Alpha remains very high overall (around 0.94), and the fact that removing any item changes alpha only minimally (between 0.935 and 0.946) demonstrates that no item weakens the scale or requires removal. The similarity of the scale means and variances if items are deleted further confirms that each item behaves consistently within the set. Overall, the results indicate a highly reliable and coherent measurement instrument, with each item making a meaningful contribution to the construct being assessed.

Table 5: Results of the Principal Component Analysis (PCA).

Component	Eigenvalue	% of Variance Explained	Cumulative %
visualization of the economic environment	5.352	76.456%	76.456%
visualization of the skills of local actors	0.481	6.871%	83.327%
availability of information related to investment and business creation	0.374	5.341%	88.668%
organization of conferences and events on investment	0.310	4.432%	93.100%
availability of access to sectoral data	0.241	3.442%	96.542%
availability of information related to regulated activities	0.138	1.975%	98.517%
availability of databases of profiles and skills	0.104	1.483%	100.000%

The PCA results show that the first component, "visualization of the economic environment," dominates the factor structure with an eigenvalue of 5.352 and explains 76.456% of the total variance, indicating that it represents the primary dimension underlying the dataset. All remaining components have eigenvalues well below 1 and individually explain only 1.483% to 6.871% of the variance, contributing marginally to the overall structure. The cumulative variance reaches 100% across all components, but the steep drop after the first factor confirms that the scale is essentially unidimensional, with the first component capturing the vast majority of meaningful variance.

4.3. Confirmatory Factor Analysis

The table 6 presents the reliability and convergent validity indicators for the latent construct Information Economy, assessed through the PLS-SEM confirmatory factor analysis. Overall, the results demonstrate excellent psychometric quality of the measurement model.

Table 6: Reliability Indicators and Average Variance Extracted.

Construct	Cronbach's Alpha	Rho_A	Composite Reliability	Average Variance Extracted (AVE)
Information economy	0.95	0.95	0.96	0.75

The internal consistency reliability is strongly supported. The Cronbach's Alpha value ($\alpha = 0.95$) is well above the commonly accepted threshold of 0.70 indicating a very high level of internal consistency among the indicators. This suggests that the items measuring the Information Economy construct are highly homogeneous and consistently reflect the same underlying concept. While values above 0.90 may sometimes indicate item redundancy, in this context—given the theoretical coherence of the construct and prior scale purification—this level of reliability confirms the robustness of the measurement instrument.

The Rho_A coefficient ($\rho_A = 0.95$) further confirms construct reliability. Rho_A is considered a more accurate reliability estimate in PLS-SEM, as it lies between Cronbach's Alpha and Composite Reliability (Henseler, 2017). The equivalence between α and ρ_A indicates stability in the internal structure of the construct and reinforces confidence in the reliability assessment.

The composite reliability (CR = 0.96) exceeds the recommended minimum threshold of 0.70 and even the more conservative benchmark of 0.80 suggested

for advanced research (Hair *et al.*, 2019). This result confirms that the construct exhibits strong reliability while appropriately accounting for the different indicator loadings within the PLS framework.

The convergent validity is clearly established through the Average Variance Extracted (AVE = 0.75). This value is substantially higher than the recommended threshold of 0.50, indicating that more than 75% of the variance in the indicators is explained by the Information Economy construct rather than by measurement error. Such a high AVE reflects strong indicator loadings and confirms that the construct effectively captures the informational dimension of the entrepreneurial ecosystem.

The results reported in table 6 confirm that the Information Economy construct demonstrates excellent reliability and strong convergent validity. These findings validate the measurement model and support its use in subsequent structural model analysis, reinforcing the robustness of the proposed measurement scale for evaluating information accessibility and circulation within territorial entrepreneurial ecosystems.

4.4. Limitations

Despite its methodological rigor, the study presents several limitations. First, the sample size of 74 entrepreneurs, although acceptable for PLS-SEM, remains relatively limited and may affect the generalizability of the findings. The sample is also restricted to ICT entrepreneurs in the Rabat-Salé-Kenitra region, which may not fully reflect the diversity of entrepreneurial ecosystems across Morocco or other territories. Second, the study relies solely on self-reported data, which may introduce social desirability or perception biases. Third, the scale focuses specifically on informational variables and does not integrate complementary dimensions of entrepreneurial ecosystems such as finance, regulation, culture, or infrastructure, which may also influence location decisions. Finally, the cross-sectional design limits the ability to capture temporal evolution or causal relationships between information accessibility and entrepreneurial outcomes.

4.5. Perspectives for Future Research

Future research could expand this work in several directions. First, applying the measurement scale to larger and more diverse samples both sectorally and geographically would strengthen its external validity and enable comparative territorial analyses. Second, adding complementary indicators related to governance, financial resources, innovation

networks, or institutional quality could help build a more holistic model of territorial attractiveness. Longitudinal studies could also examine how improvements in information infrastructures or territorial marketing strategies influence entrepreneurial dynamics over time. Additionally, multi-method approaches combining quantitative scales with qualitative interviews or social network analysis could provide deeper insights into how entrepreneurs actually use and evaluate territorial information. Finally, integrating digital data sources such as open data platforms, territorial dashboards, or spatial analytics may enrich the measurement of information accessibility in smart-city contexts.

4.6. Managerial and Policy Implications

The results offer several actionable implications for territorial managers, policymakers, and actors in regional economic development. First, strengthening the availability and clarity of economic, sectoral, and regulatory information can significantly enhance the attractiveness of a territory for innovative entrepreneurs. Public institutions should prioritize transparent data governance, user-friendly platforms, and regular updates of territorial information resources. Second, mapping and showcasing local skills and human capital can support better matching between entrepreneurial needs and regional competencies. Third, organizing conferences, sectoral events, and knowledge-sharing platforms can reinforce ecosystem connectivity and stimulate innovation.

REFERENCES

- Arrow, K. J. (1974). *The limits of organization*. W. W. Norton.
- Bagozzi, R. P., & Yi, Y. (1988). On the evaluation of structural equation models. *Journal of the Academy of Marketing Science*, 16(1), 74–94.
- Ben Arfi, W., Sahut, J.-M., & Hikkerova, L. (2023). Virtual teams and knowledge sharing via digital platforms: Evidence from an interorganizational network context. *Management International*, 27(6), 18–31.
- Carifio, J., & Perla, R. (2008). Resolving the 50-year debate around using and misusing Likert scales. *Medical Education*, 42(12), 1150–1152.
- Chakir, K., & Mazzaourou, A. (2023). The intermediary role of territorial economic intelligence between human capital and the economic development of territories. *Revue Internationale du Chercheur*, 4(1).
- Chin, W. W. (1998). The partial least squares approach to structural equation modeling. In G. A. Marcoulides (Ed.), *Modern methods for business research* (pp. 295–336). Lawrence Erlbaum Associates.
- Churchill, G. A. (1979). A paradigm for developing better measures of marketing constructs. *Journal of Marketing Research*, 16(1), 64–73.
- Comrey, A. L., & Lee, H. B. (1992). *A first course in factor analysis* (2nd ed.). Lawrence Erlbaum Associates.
- Davenport, T. H., & Prusak, L. (1998). *Working knowledge: How organizations manage what they know*. Harvard Business School Press.
- DeVellis, R. F. (2017). *Scale development: Theory and applications* (4th ed.). Sage.
- Falk, R. F., & Miller, N. B. (1992). *A primer for soft modeling*. University of Akron Press.
- Ferdj, Y., & Djeflat, A. (2024). Territorial intelligence in Algeria, between network structuring and sustainable development. *Management and Entrepreneurship: Trends of Development*, 2(28), 100–115. <https://doi.org/10.26661/2522-1566/2024-2/28-08>

Finally, the measurement scale developed in this study provides decision-makers with a diagnostic tool to identify informational gaps, monitor territorial communication strategies, and design targeted actions to improve competitiveness. By reinforcing informational infrastructures, territories can create more conducive environments for entrepreneurship, innovation, and sustainable economic development.

5. CONCLUSION

This study aimed to develop a reliable and valid measurement scale to assess the accessibility and circulation of information within a territorial entrepreneurial ecosystem, using the case of ICT entrepreneurs in Rabat. The results confirm the central role of the information economy in shaping entrepreneurial decisions, territorial attractiveness, and regional competitiveness. The proposed scale demonstrates excellent psychometric properties, with very high internal consistency (Cronbach's $\alpha = 0.948$) and a clear unidimensional structure confirmed through PCA, where the first component alone explains more than 76% of the variance. These findings highlight the coherence of the underlying construct and validate the relevance of the seven items used to capture the informational dimension of the entrepreneurial environment. By providing a robust measurement instrument, this study contributes to a better understanding of how information availability, visibility, and dissemination influence entrepreneurial dynamics in knowledge-intensive sectors.

- Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, 18(1), 39–50.
- García-Madurga, M.-Á., Grilló-Méndez, A.-J., & Esteban-Navarro, M.-Á. (2020). Territorial intelligence, a collective challenge for sustainable development: A scoping review. *Social Sciences*, 9(7), 126. <https://doi.org/10.3390/socsci9070126>
- Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2019). *Multivariate data analysis* (8th ed.). Cengage Learning.
- Hair, J. F., Hult, G. T. M., Ringle, C., & Sarstedt, M. (2021). *A primer on partial least squares structural equation modeling (PLS-SEM)* (3rd ed.). Sage.
- Henseler, J. (2017). Bridging design and behavioral research with variance-based structural equation modeling. *Journal of Advertising*, 46(1), 178–192.
- Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the Academy of Marketing Science*, 43(1), 115–135.
- Henseler, J., Ringle, C. M., & Sinkovics, R. R. (2009). The use of partial least squares path modeling in international marketing. In R. R. Sinkovics & P. N. Ghauri (Eds.), *Advances in international marketing* (Vol. 20, pp. 277–320). Emerald.
- Hernández-Linares, R., López-Fernández, M. C., García-Piqueres, G., Pina e Cunha, M., & Rego, A. (2023). How knowledge-based dynamic capabilities relate to firm performance: the mediating role of entrepreneurial orientation. *Review of Managerial Science*, 18, 2781–2813.
- Hinkin, T. R. (1998). A brief tutorial on the development of measures for use in survey questionnaires. *Organizational Research Methods*, 1(1), 104–121.
- Kline, R. B. (2016). *Principles and practice of structural equation modeling* (4th ed.). Guilford Press.
- Kock, N., & Hadaya, P. (2018). Minimum sample size estimation in PLS-SEM: The inverse square root and gamma-exponential methods. *Information Systems Journal*, 28(1), 227–261.
- Leal, M., Leal, C., & Silva, R. (2025). Entrepreneurial ecosystems and knowledge management: Systematic literature review and bibliometric analysis. *Journal of the Knowledge Economy*. Advance online publication. <https://doi.org/10.1007/s13132-025-02730-9>
- Little, R. J. A., & Rubin, D. B. (2019). *Statistical analysis with missing data* (3rd ed.). Wiley.
- Machlup, F. (1962). *The production and distribution of knowledge in the United States*. Princeton University Press.
- March, J. G., & Simon, H. A. (1958). *Organizations*. Wiley.
- Montoya Delgadillo, J. L. (2022). Inteligencia territorial: Disrupción y participación en la sociedad del conocimiento. *Cuaderno de Trabajo Social*, 18(1), 119–130.
- Norman, G. (2010). Likert scales, levels of measurement and the “laws” of statistics. *Advances in Health Sciences Education*, 15(5), 625–632.
- North, D. C., & Thomas, R. P. (1973). *The rise of the Western world: A new economic history*. Cambridge University Press.
- Nunnally, J. C., & Bernstein, I. H. (1994). *Psychometric theory* (3rd ed.). McGraw-Hill.
- Pereira, N., & Fernandes, C. I. (2025). Knowledge management in health organizations: A systematic literature review. *Journal of the Knowledge Economy*. <https://doi.org/10.1007/s13132-025-02760-3>
- Porat, M. U. (1977). *The information economy* (Vols. 1–2). U.S. Department of Commerce.
- Roscoe, J. T. (1975). *Fundamental research statistics for the behavioral sciences* (2nd ed.). Holt, Rinehart & Winston.
- Teece, D. J. (2007). Explicating dynamic capabilities: The nature and microfoundations of (sustainable) enterprise performance. *Strategic Management Journal*, 28(13), 1319–1350.