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## ***Generativity is a Core Value of the ESJ: A Decade of Growth***

Erik Erikson (1902-1994) was one of the great psychologists of the 20th century<sup>1</sup>. He explored the nature of personal human identity. Originally named Erik Homberger after his adoptive father, Dr. Theodore Homberger, he re-imagined his identity and re-named himself Erik Erikson (literally Erik son of Erik). Ironically, he rejected his adoptive father's wish to become a physician, never obtained a college degree, pursued independent studies under Anna Freud, and then taught at Harvard Medical School after emigrating from Germany to the United States. Erickson visualized human psychosocial development as eight successive life-cycle challenges. Each challenge was framed as a struggle between two outcomes, one desirable and one undesirable. The first two early development challenges were 'trust' versus 'mistrust' followed by 'autonomy' versus 'shame.' Importantly, he held that we face the challenge of **generativity** versus **stagnation in middle life**. This challenge concerns the desire to give back to society and leave a mark on the world. It is about the transition from acquiring and accumulating to providing and mentoring.

Founded in 2010, the European Scientific Journal is just reaching young adulthood. Nonetheless, **generativity** is one of our core values. As a Journal, we reject stagnation and continue to evolve to meet the needs of our contributors, our reviewers, and the academic community. We seek to innovate to meet the challenges of open-access academic publishing. For us,

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<sup>1</sup> Hopkins, J. R. (1995). Erik Homburger Erikson (1902–1994). *American Psychologist*, 50(9), 796-797. doi:<http://dx.doi.org/10.1037/0003-066X.50.9.796>

generativity has a special meaning. We acknowledge an obligation to give back to the academic community, which has supported us over the past decade and made our initial growth possible. As part of our commitment to generativity, we are re-doubling our efforts in several key areas. First, we are committed to keeping our article processing fees as low as possible to make the ESJ affordable to scholars from all countries. Second, we remain committed to fair and agile peer review and are making further changes to shorten the time between submission and publication of worthy contributions. Third, we are looking actively at ways to eliminate the article processing charges for scholars coming from low GDP countries through a system of subsidies. Fourth, we are examining ways to create and strengthen partnerships with various academic institutions that will mutually benefit those institutions and the ESJ. Finally, through our commitment to publishing excellence, we reaffirm our membership in an open-access academic publishing community that actively contributes to the vitality of scholarship worldwide.

*Sincerely,*

***Daniel B. Hier, MD***

*European Scientific Journal (ESJ) Natural/Life/Medical Sciences*

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# Generative AI in Accounting Publishing: A Bibliometric and Thematic Analysis of Author Guidelines with Governance and Ethical Considerations

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## Abstract

This study addresses a gap in accounting scholarship by examining how journals listed in the Australian Business Deans Council (ABDC) Journal Quality List approach the use of generative artificial intelligence (AI) tools in scholarly publishing. We employed a two-phase methodology: a structured bibliometric review to map journal characteristics and a thematic content analysis to interpret AI-related author guidelines. Ninety-one A\*, A, and B-ranked journals classified under Accounting (FoR 3501) were examined. The findings revealed inconsistent expectations across the discipline due to fragmented journal policies on AI use. This fragmented policy landscape creates ethical ambiguities and challenges for authors, editors, and institutions seeking to ensure responsible and transparent research practices.

To address these gaps, the study proposes a governance-oriented framework for responsible AI use in accounting publishing. The framework includes: (1) standardised disclosure protocols for AI-assisted content, (2) criteria distinguishing acceptable from unacceptable AI applications, (3) procedures for identifying and managing potential misuse, and (4) integration of AI ethics into editorial and peer review practices. By aligning journal policies with principles of transparency, accountability, fairness, and integrity,

the framework supports the development of coherent, discipline-specific standards. This research contributes to the advancement of ethical scholarship and informs broader discussions on AI governance in academic and professional contexts.

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**Keywords:** Generative artificial intelligence, academic publishing, accounting journals, authorship ethics, academic integrity, corporate governance

## Introduction

The use of generative artificial intelligence (hereinafter referred to as AI) tools in academic publishing has emerged as a critical issue for corporate governance frameworks concerned with transparency, accountability, and ethical AI use (Islam & Greenwood, 2024; Martin, 2023). Corporate accounting scandals once prompted reforms in ethics and education. Similarly, AI tools like ChatGPT now raise new challenges for integrity, authorship, and trust in publishing.

(Batista, 2024; Islam & Greenwood, 2024; Poje & Groff 2022). In response, the academic community, including publishers, journals, and professional bodies, faces mounting pressure to develop clear policies and practices that ensure responsible use of these tools. Nowhere is this tension more pronounced than in the field of accounting, where research and professional standards directly influence the ethical foundations of corporate governance, financial reporting, and public oversight.

Accounting journals serve as critical gatekeepers of knowledge, influencing the development of theory and practice in the profession. Yet the current landscape of journal policies on AI use remains fragmented and inconsistent continuing to pose challenges for ethical clarity and consistency (Tang, 2025; Yin et al., 2024). Some publishers and journals have issued guidance on AI authorship, disclosure, and acceptable use, helping clarify expectations for scholarly work. However, many remain inconsistent, leaving authors and reviewers uncertain about standards and responsible AI practices. The lack of uniformity in AI policies across accounting journals reflects broader concerns about ethical AI use in business and society, particularly regarding clarity in decision-making processes, responsibility for AI-generated content, fairness, and the protection of intellectual ethical standards in research (Bankins & Formosa, 2023; Sreseli, 2023). These concerns resonate deeply with the core principles of corporate governance, which emphasise ethical leadership, responsible decision-making, and the safeguarding of stakeholder interests.

This study provides a systematic analysis of how accounting journals included in the Australian Business Deans Council (ABDC) journal quality

list (updated in 2023) address the use of AI in their author instructions and editorial policies. By focusing on journals ranked A\*, A, and B under the Field of Research (FoR) code 3501 Accounting, the study identifies patterns, gaps, and inconsistencies in the current guidance provided to authors. This is particularly important as business schools, corporate training programs, and professional bodies increasingly seek to establish standards for responsible AI use in research and practice (Martin, 2023). The central research question guiding this study is: How do the AI policies in author instructions of ABDC-ranked accounting journals reflect and influence principles of academic integrity and corporate governance? By mapping the current state of AI usage policies in accounting journals, this study not only informs the development of best practices in academic publishing but also contributes to the broader conversation about the ethical governance of AI in corporate and academic settings.

This study informs stakeholders, journal editors, publishers, authors, and professional bodies about the critical need for clear and consistent AI policies in accounting publishing. It also highlights how these policies intersect with key principles of corporate governance, including transparency in research methods, responsibility for outputs, and ethical stewardship of emerging technologies. The findings highlight the influential role of academic journals in shaping responsible AI practices that extend into corporate settings. They also reinforce the need for governance structures that uphold ethical standards amid rapid technological advancement.

## **Literature review**

### ***AI and academic publishing***

The advent of AI, including tools like ChatGPT and other LLMs, has prompted significant disruption in academic publishing (Eke, 2023). AI tools can produce human-like text, code, and analysis, raising questions about authorship, originality, and the boundaries of acceptable academic assistance (Islam & Greenwood, 2024). Early concerns focused on potential misuse for ghostwriting and plagiarism (Stokel-Walker, 2023), while recent discourse has shifted toward more nuanced debates around appropriate disclosure and co-authorship attribution (Springer, 2025; Elsevier, 2025). Academic institutions and publishers are now grappling with the extent to which AI-generated content can be integrated responsibly into scholarly work.

The emergence of AI has triggered a substantial surge in scholarly interest, alongside a rapid intensification in its prospective applications across academic contexts. Many peer-reviewed articles and editorials have explored both the potential benefits and inherent challenges associated with AI, with a significant number incorporating the technology directly into the research and writing process (Kour et al., 2025). Within the realm of academic inquiry and

scholarly communication, existing literature frequently highlights AI's capacity to enhance written expression, particularly through improvements in grammar and vocabulary (Graf & Bernardi, 2023, Zou et al., 2025). Furthermore, the technology has demonstrated proficiency in translating texts across multiple languages (Kruk & Kałużna, 2025), generating original research questions (Graf & Bernardi, 2023), synthesising extensive volumes of information (Kruk & Kałużna, 2025), recommending appropriate statistical analyses (Macdonald et al., 2023), and facilitating the creation of computer code and innovative textual material (Macdonald et al., 2023). These affordances have collectively contributed to a more streamlined and efficient research workflow (Ollivier et al., 2023). Despite these advancements, scholars are cautioned against an overreliance on AI, as the technology cannot assume responsibility for its outputs (Xu et al., 2025). Notable concerns include the potential for factual inaccuracies, algorithmic bias, and breaches of academic integrity through inadvertent plagiarism (Ollivier et al., 2023). This evolving landscape of capabilities and concerns has prompted publishers to reconsider their policies, particularly in relation to authorship, clarity, fairness and the ethical integration of AI in scholarly outputs (John-Mathews et al., 2022).

Journal policies are evolving rapidly, though inconsistently, across disciplines. Some major publishers, such as Springer and Elsevier, have released broad guidance on AI use, generally prohibiting AI from being credited as an author and requiring disclosure if AI tools were used in manuscript preparation (Elsevier, 2025; Springer, 2025). However, discipline-specific guidance remains fragmented, with academic journals adopting varying stances on the incorporation of AI-generated content (Gulumbe, 2024; Gulumbe et al., 2025; Inam et al., 2024). Within this fragmented context, studies have begun documenting the varied approaches across academic fields (Zhong et al., 2023). This underlines the ambiguity authors face and the potential inequities in peer review outcomes when standards vary widely.

### ***The role of accounting journals in shaping ethical research***

Accounting, as a discipline, occupies a unique position at the nexus of academic scholarship and professional regulation. Journals in accounting do not merely disseminate knowledge, they influence policy, guide educational standards, and shape professional ethics (Hopwood, 2007; Parker & Guthrie, 2014). As such, inconsistent or absent policies on AI in these journals risk not only undermining research ethical standards but also sending conflicting signals to practitioners and educators about ethical AI use in professional contexts. This issue is particularly pertinent given accounting's emphasis on accountability, disclosure, and auditability, values that resonate closely with emerging concerns in AI ethics (Schweitzer, 2024; Zhang et al., 2023). If

journals fail to articulate clear standards for AI use, this may weaken efforts to align academic practice with the ethical imperatives demanded of the profession (Kour & Schutte, 2025).

### ***Corporate governance and the ethical use of AI***

The discussion of AI use in accounting publishing cannot be divorced from broader conversations on AI and corporate governance. Governance frameworks increasingly emphasise the need for AI disclosure, human oversight, and responsible innovation (OECD, 2023; Trotta et al., 2023; Xu et al., 2025). Institutions that engage with AI, whether in research, business, or education, must develop systems of oversight that mirror those found in financial and regulatory compliance (Morley et al., 2022; Martin & Waldman, 2023; Novelli et al., 2024).

Publishing practices in accounting journals serve as a reflection of these governance expectations. By setting standards for responsible AI use, journals can model best practices for corporate actors navigating similar dilemmas (Pearson, 2024; Zhang et al., 2023). This reciprocal relationship, between academic governance and corporate governance, positions journal policies as crucial levers for broader societal impact (Bankins & Formosa, 2023).

## **Methods**

### ***Journal selection process***

This study adopted a systematic approach to selecting accounting journals from the Australian Business Deans Council (ABDC) 2023 Updated Journal Quality List. On 4 June 2025, the authors selected the ABDC journals. The official website for each journal was manually searched for guidelines pertaining to AI tools. Data collection for the journal guideline for authors focused on determining the presence of author guidelines specifically referencing the use of AI. The ABDC list, a widely recognised benchmark for journal quality in the Australian and international academic community, was accessed in its Excel format (ABDC 2023).

The data extraction and filtering process for the ABDC 2023 Excel file involved a systematic approach using specific inclusion criteria. The key columns used were Column E, which contains the Field of Research (FoR) codes, and Column G, which lists the journal ratings (A\*, A, B, C). For the FoR filtering, only journals explicitly coded under FoR 3501 – Accounting were included. This ensured that the analysis focused on accounting-specific journals. This filtering step was automated in Excel using a formula designed to identify the presence of “3501” in Column E. For the journal quality rating filtering, only journals rated as A\*, A, or B in the ABDC 2023 list were included to maintain a focus on high-quality, peer-reviewed research outlets.

Journals with a C rating were excluded. This filtering was also conducted in Excel, using Column G as the reference. In addition, journals without publicly available author instructions, such as an accessible “Instructions for Authors” page or equivalent policy document on their website, were excluded. This step ensured that only journals with explicit author policies, including information on their AI policy, were considered for further analysis.

### ***Structured bibliometric review and thematic content analysis***

To complement the journal selection, this study employed a two-phase methodology consisting of a structured bibliometric review followed by a thematic content analysis. This mixed-methods approach enabled both quantitative mapping and qualitative interpretation of the ways in which AI is addressed in accounting journal policies.

The bibliometric review involved the systematic documentation of each journal’s publisher, quality ranking (A\*, A, B), year of establishment, and the presence or absence of AI-related language in its publicly accessible author guidelines. Key data fields were extracted into a centralised dataset to enable frequency analysis and pattern recognition. The journals were further disaggregated by publisher and date of inception to assess temporal trends and publisher-specific policy tendencies.

The thematic content analysis was then conducted on journal guidelines identified as having explicit or implicit references to GAI. This qualitative analysis followed Braun and Clarke’s (2006) six-phase approach: familiarisation with the data, generation of initial codes, identification of themes, review of themes, definition and naming of themes, and final write-up. Journal statements were analysed inductively and grouped into recurring themes such as AI authorship prohibition, disclosure requirements, editorial assistance boundaries, and ethical risk mitigation. Particular attention was paid to variations in policy language, the clarity of obligations placed on authors, and the presence of enforceable compliance mechanisms. All textual data were independently reviewed and cross-coded by two researchers to ensure consistency and rigour. Discrepancies were resolved through consensus discussion.

## **Results**

### ***Distribution of ABDC-rated accounting journals by publisher and quality***

A total of 91 accounting journals from the Australian Business Deans Council (ABDC) Journal Quality List were identified for analysis, following the filtering of journals under FoR 3501 Accounting and those rated A\*, A, or B. The distribution of these journals by quality rating and publisher is summarised in Table 1.

The results indicate a concentration of high-impact journals among a few major publishers. Elsevier accounts for the highest number of A\* journals (4), followed by Wiley-Blackwell Publishing (3) and the American Accounting Association (3). Taylor & Francis Online and Emerald Group Publishing contribute primarily A and B journals, while a substantial proportion of B-rated journals (19 out of 50) are distributed among a diverse group of Other Publishers, including smaller presses and academic societies.

**Table 1.** Grouping of 91 ABDC accounting journals by quality rating and publisher

Group	Wiley-Blackwell Publishing	Taylor & Francis Online	Emerald Group Publishing	Elsevier	American Accounting Association	Other Publishers	Total
A*	3	0	1	4	3	1	12
A	4	6	5	6	6	2	29
B	4	4	12	5	7	19	50
Total	11	10	18	15	16	22	91

*Source: Table prepared by the authors (Information correct as at 08/09/2025)*

The distribution of journals across publishers suggests that AI usage policies in accounting scholarship are shaped more by publisher-level directives than by journal-specific guidelines. This is particularly evident at the A\* and A journal levels, where a small number of dominant publishers such as Elsevier, Wiley-Blackwell, and the American Accounting Association account for a significant share of high-ranking journals. Their concentrated influence implies that any changes in publisher-wide policies could have a cascading effect across the discipline, reinforcing the need to scrutinise both publisher and journal-level governance frameworks.

### ***AI governance in scholarly journal guidelines***

A total of 91 accounting journals were systematically reviewed to assess the extent to which their author guidelines addressed the use of AI. Table 2 presents a categorisation of these journals based on the presence and type of AI-related policy. The data reveal that 65 journals (71%) have adopted explicit policies, indicating a growing institutional commitment to formalising AI governance. This trend reflects an emerging consensus among leading publishers about the ethical and operational implications of AI in scholarly work.

However, the presence of 12 journals (13%) with no mention of AI highlights a notable gap in policy coverage. These omissions are disproportionately concentrated among smaller or independent publishers, suggesting uneven adoption of ethical standards across the field. The 13 journals (14%) that reference AI in author guidelines without offering formal

policies may reflect transitional efforts toward policy development, but also contribute to ambiguity for authors and reviewers.

The breakdown by publisher further illustrates this disparity. The American Accounting Association leads with 16 journals featuring explicit policies, followed closely by Emerald Group Publishing (19) and Elsevier (15). These publishers demonstrate a proactive stance in regulating AI use, likely driven by their broader editorial infrastructure and reputational considerations. In contrast, Wiley-Blackwell, despite having 11 journals referencing AI, lacks explicit policy statements, indicating a more advisory than regulatory approach.

**Table 2.** Distribution of AI-related policy mentions by publisher

Publisher	Author guidelines	Policy	Statement <sup>1</sup>	None	Total journals
ASEPUC (Asociacion Espanola de Profesores Universitarios de Contabilidad)	0	0	0	1	1
Academy of Accounting Educators Inc.	0	0	0	1	1
American Accounting Association	0	16	0	0	16
Association Francophone de Comptabilit�© FRANCE	0	0	0	1	1
Association for Accountancy & Business Affairs	1	0	0	0	1
Creighton University	0	0	0	1	1
De Gruyter	0	0	0	1	1
Elsevier	0	15	0	0	15
Emerald Group Publishing	0	19	0	0	19
Hong Kong Polytechnic University	1	0	0	0	1
Inderscience Enterprises Ltd.	0	0	0	1	1
Iona College, Hagan School of Business	0	0	0	1	1
Louisiana State University	0	0	0	1	1
Now Publishers	0	0	0	1	1
Palgrave Macmillan	0	1	0	0	1
Rutgers University	0	0	0	1	1
Sage Publications	0	2	0	0	2
Springer	0	2	0	0	2
Taylor & Francis Online	0	10	0	0	10
University of Canberra	0	0	0	1	1
Virtus Interpress	0	0	1	0	1
Wiley-Blackwell Publishing	11	0	0	0	11
World Scientific Publishing	0	0	0	1	1
<b>Total</b>	<b>13</b>	<b>65</b>	<b>1</b>	<b>12</b>	<b>91</b>

<sup>1</sup>Statement on the use of AI

*Source: Table prepared by the authors (Information correct as at 08/09/2025)*

Smaller entities such as Virtus Interpress, Hong Kong Polytechnic University, and the Association for Accountancy & Business Affairs each have only one journal referencing AI, with limited policy detail. Twelve (12) publishers including ASEPUC, De Gruyter, and Now Publishers, have no journals with any AI-related guidance, underscoring the fragmented nature of policy adoption.

This uneven landscape suggests that while momentum toward responsible AI governance is building, it remains concentrated among a few influential publishers. The lack of standardisation across the broader publishing ecosystem poses risks to consistency, fairness, and ethical clarity in accounting research. These findings reinforce the need for coordinated, discipline-wide frameworks that can bridge policy gaps and support equitable scholarly practices.

***Temporal distribution of AI policy adoption***

The temporal analysis of AI policy adoption across 91 accounting journals reveals distinct patterns in how journals of different eras have responded to the emergence of generative AI. As shown in Table 3, journals founded before 1980 show a relatively high rate of guideline references (58%) but a lower rate of explicit policy adoption (33%), suggesting that older journals may acknowledge AI but lack formalised governance structures.

In contrast, journals established between 1980 and 1999 demonstrate the strongest engagement, with 81% adopting explicit policies and only a small minority lacking any guidance. This cohort appears to lead the integration of AI governance, likely due to their established editorial infrastructure and responsiveness to evolving ethical standards. Journals from 2000 to 2009 continue this trend, with 72% implementing explicit policies, though the presence of six journals without any AI guidance indicates uneven uptake. Surprisingly, the most recently founded journals (2010–2025) show the weakest engagement, with only five of seven adopting explicit policies and none referencing AI in guidelines or issuing general statements. This suggests that newer journals may be slower to formalise AI governance, potentially due to resource constraints or prioritisation challenges. Overall, the data indicate a growing trend toward formal AI policy adoption, particularly among mid-era journals, while highlighting a lag in policy development among both legacy and emerging publications. These findings highlight the need for coordinated efforts to ensure consistent ethical standards across the accounting discipline, regardless of journal age or publisher affiliation.

**Table 3.** Distribution of AI policy indicators by journal inception period

Date range	Author guidelines	None	Policy	<sup>1</sup> Statement	Total
2010-2025	0	2	5	0	7
2000-2009	2	6	21	0	29
1980-1999	4	3	35	1	43
Before 1980	7	1	4	0	12
Total	13	12	65	1	91

<sup>1</sup>Statement on the use of AI

Source: Table prepared by the authors (Information correct as at 08/09/2025)

## **Thematic analysis of journal and publisher instructions and comments** ***Comparative analysis of AI guidance and policies in journals***

To examine how accounting journals address the use of AI, we analysed statements from journals classified under three categories: *author guidelines*, *policy*, and *statements on the use of AI*. Specific quotes were extracted from author instructions to demonstrate the nature and intent of these policies. Journals in the author guidelines category typically include general or advisory references to AI. For example, Contemporary Accounting Research Journal noted: “Authors may use AI tools to improve grammar and clarity but must ensure that their use does not alter the intellectual contribution of the manuscript.” Similarly, Journal of Corporate Accounting and Finance stated: “Artificial Intelligence tools may be used to support the writing process; however, authors are fully responsible for all content.” These entries reflect a permissive stance, framing AI tools as assistive rather than central to authorship or academic ethical standards.

In contrast, journals coded under Policy provided more formalised and binding expectations regarding AI use. Accounting, Auditing & Accountability Journal noted that the release of ChatGPT in November 2022 prompted a review of its use. Authors are required to disclose if and how AI tools were employed and remain fully responsible for the content produced. The Accounting Review offered a similar position, stating: “This policy refers to AI tools like ChatGPT. Such tools cannot be listed as authors and their use must be acknowledged.” These statements not only set boundaries for acceptable AI use but also assert the author's responsibility.

### ***Clear prohibition of AI authorship***

Further analysis was conducted at the publisher rather than the journal level due to the consistent policy language found across multiple journals under the same publisher. Leading academic publishers, such as Taylor & Francis, Sage Publications, and the American Accounting Association, have adopted uniform policy statements that are disseminated across their journal portfolios. These will hereafter be referred to collectively as 'leading publishers'. This centralised approach reflects overarching editorial standards, making publisher-level analysis both efficient and meaningful.

A strong and recurring theme among the ABDC-ranked journals with explicit AI policies was the prohibition of attributing authorship to AI tools, including ChatGPT and other LLMs. Many journals articulated a firm position that authorship entails accountability, intellectual contribution, and legal responsibility, functions that AI systems cannot fulfill. Several journals, particularly those published by leading publishers, provided clear statements such as that AI tools must not be listed as an author, because such tools are unable to assume responsibility for the submitted content or manage copyright

and licensing agreements. Taylor & Francis emphasised that authorship entails full accountability for the content, agreement to publication terms, and assurance of the work's integrity, responsibilities that are inherently human and cannot be delegated to AI tools. The American Accounting Association stressed that authors bear full responsibility for all content in their articles, regardless of how it is produced. It further requires that any use of AI or AI-assisted tools comply with AAA's authorship policies. Sage Publications similarly emphasised that AI tools such as ChatGPT cannot be listed as co-authors. Full responsibility for the submitted work rests with the human author and any co-authors. This collectively reflect a consensus that AI may support the writing process but cannot replace the intellectual ownership associated with scholarly authorship. They also indicate the publishing community's effort to uphold ethical norms, protect intellectual property, and maintain the credibility of academic contributions in light of emerging technologies.

### ***Mandatory disclosure***

A prominent theme across journals with explicit policies was the requirement for authors to disclose the use of AI tools, such as ChatGPT in manuscript preparation. These disclosure requirements were consistently tied to principles of transparency, accountability, and research integrity. Many journals outlined expectations that authors must specify whether AI was used, what tools were employed, and for what purposes. Taylor & Francis advises that authors must include a clear statement in their manuscript detailing any use of AI tools. This disclosure should specify the tool's full name and version, describe how it was used, and explain the reason for its application. They also emphasised the importance of disclosure in editorial review: "This level of transparency ensures that editors can assess whether AI tools have been used and whether they have been used responsibly." Similarly, the American Accounting Association provided detailed disclosure protocols: "The use of AI and AI-assisted tools... should be disclosed at the end of the manuscript in a separate section, immediately before the reference section... The authors should specify the tool(s) used, the extent of use, and the reason(s) for using the tool(s)." They suggested a standard format for such statements: "During the preparation of this work, the author(s) used [name tool/service] in order to [extent/reason]. After using this tool/service, the author(s) reviewed and edited the content as needed and take(s) full responsibility for the content of the publication." Sage Publications echoed this stance: "You are required to inform us of any AI-generated content appearing in your work... This will allow the editorial team to make an informed publishing decision regarding your submission." Across all three publishers, disclosure is framed not as optional but as an ethical necessity, allowing editors, reviewers, and readers to evaluate the authenticity and trustworthiness of the scholarly work. This

reflects an emerging consensus in accounting publishing that AI-generated content must be openly declared and contextually justified.

### ***Concerns about plagiarism and misuse***

While explicit bans on the use of AI were not evident, many journal policies and statements raised serious concerns about potential misuse, including plagiarism, fabrication of content, inaccuracies, and bias. These concerns reflect a broader awareness of the risks associated with AI-generated outputs and the need to maintain scholarly standards.

Across several policies, the onus of responsibility was placed squarely on the human author. For instance, Taylor & Francis emphasised that authors must ensure their submissions meet rigorous scientific and scholarly standards, including research validation, and that all content is authored by them. They also warned against relying on AI-generated content for critical research elements: "Authors should not submit manuscripts where AI tools have been used in ways that replace core researcher and author responsibilities, for example: text or code generation without rigorous revision, synthetic data generation... or generation of any types of content which is inaccurate, including abstracts or supplemental materials."

The American Accounting Association reinforced this emphasis on author accountability: "Authors are accountable for all information contained in an article regardless of how it is produced, including ensuring that any AI tool(s) used do not infringe copyright and other ownership rights of third parties." Similarly, Sage Publications highlighted that large language models may unintentionally reproduce substantial text from existing sources without proper citation, potentially violating intellectual property rights. Authors are therefore responsible for ensuring that their submissions are free from plagiarism. They further cautioned: "LLMs may produce non-existent citations... and may inadvertently propagate bias. Authors must review all AI-generated content to ensure it's inclusive, impartial, and scientifically accurate." Although the tone of these statements varies, the underlying message is consistent: AI tools cannot be relied upon for unchecked content generation, and authors must critically evaluate and ethically manage any AI-assisted outputs.

### ***Editorial assistance and language use***

While the use of AI for content creation or authorship was widely restricted, many journals made explicit allowances for the use of AI tools in a limited editorial capacity, specifically for language improvement, grammar correction, or editing support. This form of AI assistance was generally framed as acceptable, provided the human author retains full intellectual responsibility for the work.

Taylor & Francis made this distinction clear by affirming its support for responsible AI use, provided it meets high standards of data security, confidentiality, and copyright protection. Acceptable applications include idea generation, language refinement, and interactive searches using LLM-enhanced tools. They emphasised that in such cases, human oversight must remain paramount: "Utilising AI and AI-assisted technologies in any part of the research process should always be undertaken with human oversight and transparency." The American Accounting Association echoed this sentiment, distinguishing between general AI use and language-related support: "Authors may use AI and AI-assisted tools to assist with the generation of scholarly work, as long as they disclose the specific use(s) of the tool and the tool(s) used. The technology should be used with human oversight and control." Sage Publications acknowledged the role of AI in improving academic writing, noting that assistive tools can offer suggestions, corrections, and enhancements to content authored by humans. Work created by the author but refined with such tools is classified as 'AI-assisted.' However, they clearly differentiated between AI-assisted and AI-generated content: "Even if you've made significant changes to the content afterwards, if an AI tool was the primary creator of the content, the content would be considered 'AI-generated'." Overall, the use of AI for editorial assistance was treated as conditionally permissible. Most journals required clear disclosure of such use and reiterated that it should not compromise the authorship, originality, or scholarly rigour of the submission.

### ***Responsibility and ethical use***

Across journals with explicit or partial AI policies, a recurring theme was the emphasis on author responsibility and ethical use of AI tools. Publishers consistently underscored that while AI may support aspects of manuscript preparation, authors remain fully answerable for the accuracy, originality, and scholarly integrity of the final submission.

Taylor & Francis clearly stated that authors are fully responsible for ensuring their submissions meet rigorous scientific and scholarly standards, including research validation, and that all content is created by the author. They further warned against the inappropriate delegation of core academic tasks: "Authors should not submit manuscripts where AI tools have been used in ways that replace core researcher and author responsibilities..." The American Accounting Association also reinforced this ethical stance: "Authors are accountable for all information contained in an article regardless of how it is produced." They further noted that AI can produce content that appears authoritative but may be inaccurate, incomplete, biased, or infringe on copyrights. Authors must thoroughly review and edit any AI-generated material, as responsibility for the content cannot be delegated to AI. Sage

Publications similarly framed human responsibility as a non-negotiable standard: "As the author, you (and any co-authors) are entirely responsible for the work you submit." "While these tools can offer enhanced efficiency, it's also important to understand their limitations and to use them in ways which adhere to principles of academic and scientific integrity."

These statements reinforce the view that the ethical use of AI in academic publishing depends not only on policy compliance, but on the author's ongoing judgment, openness, and professional standards. AI may assist, but cannot replace, the human responsibility that underpins credible scholarship.

## **Discussion**

### ***Fragmentation and emerging consensus in AI policies***

This study revealed a complex and evolving landscape of AI governance within accounting journals listed in the ABDC Journal Quality List. While a significant proportion of journals (approximately 86%) have implemented some form of guidance on AI use, the nature, clarity, and enforcement mechanisms of these policies vary considerably. The presence of policy fragmentation, especially across lower-ranked and independently published journals, raises concerns about consistency in ethical standards, clarity, and author guidance.

An emerging consensus is evident among leading publishers. These publishers have articulated uniform guidelines across their journal portfolios, signaling an industry-wide movement toward ethical oversight of AI-assisted scholarship. Key themes underpinning these policies include: the prohibition of AI authorship, mandatory disclosure of AI use, permissible language editing, and author ownership for content integrity. These findings align with recent literature noting the growing institutional push for clearer standards in AI-integrated academic publishing (Springer, 2025; Gulumbe et al., 2025; Zhong et al., 2023).

### ***Quality and depth of AI governance policies***

Beyond the presence or absence of AI-related guidance, this study also highlights variation in the quality of journal and publisher policies. While some policies consist of brief advisory remarks lacking enforceability or ethical depth, others present detailed, operationalised frameworks that specify disclosure protocols, accountability mechanisms, and restrictions on AI-generated content. High-quality policies, such as those issued by the leading publishers, demonstrate clarity, coherence, and practical enforceability, reflecting a mature approach to governance. In contrast, journals with only minimal references to AI offer limited ethical direction, thereby perpetuating uncertainty for authors and reviewers. Evaluating the quality of these policies

is therefore essential to understanding not just how widely AI governance has been adopted, but how effectively it upholds academic integrity and transparency across the accounting discipline (Schweitzer, 2024).

### ***Implications for academic integrity in accounting research***

The clear rejection of AI as a legitimate co-author reflects broader concerns about academic integrity, intellectual accountability, and authorship ethics. Journals consistently affirm that authorship entails intellectual contribution, legal responsibility, and moral accountability, attributes that AI tools cannot fulfill (Sullivan & Fosso 2022). This position reinforces prior arguments in the literature that AI-generated content must not obscure human agency in the research process (Bankins & Formosa, 2023; Eke, 2023; Ollivier et al., 2023).

The requirement for authors to disclose the use of AI tools supports transparency in the research lifecycle, particularly in methodology and manuscript preparation. Such disclosure mechanisms serve not only to uphold trust in the peer review process but also to facilitate informed editorial and ethical decision-making. As research becomes increasingly digitised and mediated by AI, explicit authorship practices will be essential to preserving the credibility of academic outputs (Kour et al., 2025).

The notable lack of disclosure protocols in many journals, particularly those rated B or published by smaller entities, may introduce ethical grey areas. Inconsistent standards across journals could result in unequal treatment during peer review or publication, inadvertently penalising researchers who disclose their use of AI while others do not. These inconsistencies echo Zhong et al.'s (2023) findings in radiological publishing and suggest a pressing need for harmonised policy frameworks across disciplines.

### ***The role of accounting journals as ethical gatekeepers***

Accounting journals occupy a unique space at the nexus of academic scholarship, professional regulation, and corporate accountability (Parker & Guthrie, 2014). The outputs of accounting research directly inform governance frameworks, auditing standards, and financial disclosures (Hopwood, 2007; Parker & Guthrie, 2014). Thus, the ethical standards upheld by accounting journals set a precedent not only for academic publishing but for professional norms across the industry.

The findings from this study reveal that leading accounting journals are aligning their editorial policies with core corporate governance: transparency, accountability, and risk management. This convergence supports calls from the OECD (2023) and others for cross-sector alignment in ethical AI deployment. By modeling responsible AI practices, accounting journals can act as reference points for corporate actors grappling with similar

ethical and operational dilemmas in the deployment of AI technologies (Bankins & Formosa, 2023; Pearson, 2024; Trotta et al., 2023).

### ***Editorial assistance and permissible use of AI***

A more permissive stance emerged around the use of AI tools for editorial support, such as grammar correction and language refinement. This position is consistent with the role of AI as an assistive, rather than generative technology. Journals generally frame this use as acceptable when conducted under human oversight, provided it does not alter the intellectual substance of the manuscript and is disclosed appropriately. This distinction between "AI-assisted" and "AI-generated" content is critical to maintaining clarity in academic contribution and originality (Sage Publications, 2025). However, this allowance introduces potential grey areas. Without clear boundaries, there is a risk that AI-assisted tools could become integrated into more substantive aspects of research generation. Ensuring that editorial assistance remains distinct from intellectual authorship will require ongoing dialogue, standard-setting, and perhaps the development of disclosure templates tailored to different AI applications.

### ***Risks of misuse and the limits of technological reliance***

Despite the affordances of AI, publishers consistently emphasised the risks associated with overreliance on these tools, including the production of fabricated references, biased interpretations, and inadvertent plagiarism (Ollivier et al., 2023; Eke, 2023; Elsevier, 2025). These concerns reflect the limitations of LLMs and reinforce the need for critical human oversight (Zhong et al., 2023; Springer, 2025). As AI systems evolve in sophistication, the line between assistance and authorship may blur, creating new challenges for editorial boards and peer reviewers (Macdonald et al., 2023; Gulumbe et al., 2025).

In the context of accounting research, where the factual accuracy of data, regulatory compliance, and ethical clarity are paramount, such risks are particularly acute. Unchecked use of AI could result in compromised research findings, misleading theoretical contributions, and even reputational damage to journals and institutions.

### ***Implications - Toward a discipline-wide policy framework***

While this study observed encouraging developments among top-tier journals and publishers, the broader field remains characterised by inconsistency and ambiguity. The absence of clear AI guidance in nearly one-fifth of ABDC-listed accounting journals, particularly in journals rated B or operated by smaller publishers, creates vulnerabilities in academic practice.

*Discipline-wide framework for high-quality AI governance.* To address these gaps, there is a growing imperative to develop discipline-wide frameworks that provide clear and enforceable guidance on the responsible use of AI in accounting scholarship. The fragmented and inconsistent AI policies observed across journals and publishers undermine efforts to maintain disclosure, fairness, and ethical standards in academic publishing (John-Mathews et al., 2022). Without a shared understanding of expectations, authors may face unequal treatment, and peer reviewers may apply differing standards, potentially leading to ethical ambiguities and reputational risks for journals and institutions (Zhong et al., 2023; Gulumbe et al., 2025). In developing such frameworks, it is crucial to emphasise not only the presence of AI policies but also their quality, measured through clarity, enforceability, and ethical coherence, to ensure that guidance provided to authors and reviewers translates into meaningful and consistent practice across the discipline.

To ensure a consistent, transparent, and ethically sound approach to AI integration within the accounting discipline, a robust, field-specific governance framework is essential. As illustrated in Figure 1, this framework comprises four hierarchically arranged and interconnected components: standardised disclosure language, clear criteria for use, procedures for suspected misuse, and peer review training for capacity building. Together, these elements form a comprehensive structure that safeguards academic integrity while enabling responsible innovation.

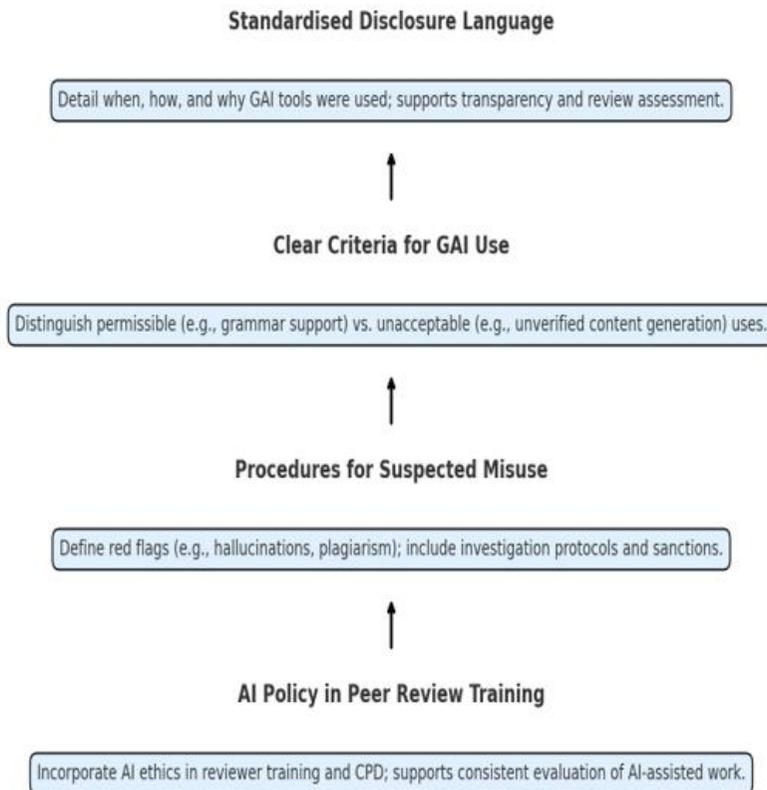
*Standardised disclosure language.* At the foundation of ethical AI governance lies the requirement for standardised disclosure language, which mandates that authors explicitly state when, how, and why AI tools were used during research and manuscript preparation. This includes specifying the tool name, version, and purpose. Whether for grammar correction, summarisation, or other editorial assistance. Such transparency supports informed editorial decisions and fosters trust in scholarly outputs (Elsevier, 2025; Taylor & Francis, 2025). By embedding disclosure into publication norms, journals can reduce ambiguity in the peer review process and set a clear tone for accountability.

*Clear criteria for acceptable AI use.* The framework's second layer establishes clear criteria that delineate acceptable versus unacceptable uses of AI. Permissible applications may include language refinement or formatting assistance, provided they are disclosed. In contrast, practices such as automated generation of literature reviews, data analysis, or original argumentation without author verification are considered ethically problematic and may compromise scholarly originality (Sage Publications, 2025; Springer, 2025; Eke, 2023). These criteria help authors navigate the

boundaries of responsible AI use and preserve the intellectual contribution central to academic work.

*Procedures for suspected misuse.* Complementing the criteria are procedures for evaluating suspected AI misuse, which provide editors and reviewers with tools to identify red flags such as fabricated references, AI-generated hallucinations, or plagiarism. These procedures should be supported by clear investigative protocols and sanctions aligned with existing academic misconduct policies (Ollivier et al., 2023; Martin, 2023). By formalising these mechanisms, journals can respond effectively to ethical breaches and reinforce the integrity of the scholarly record.

*AI policy in peer review training.* The final component focuses on capacity building by integrating AI ethics and policy into peer reviewer training and editorial onboarding. Reviewers play a critical gatekeeping role, and equipping them with the skills to evaluate AI-related disclosures and detect unethical use is vital for harmonising standards across journals (Trotta et al., 2023; Morley et al., 2022). This training should be embedded into continuing professional development for reviewers and editorial board members, thereby closing the governance loop and embedding ethical oversight into the scholarly ecosystem.



**Figure 1.** Key components of a field-specific framework for AI use in accounting research

The implications of such frameworks extend beyond journal publishing. As accounting research informs teaching, policy, and professional practice, a failure to regulate AI use in academia may have downstream effects on how future accountants perceive corporate reporting, ethical and audit standards. This concern is particularly pressing in light of the broader governance responsibilities placed on the accounting profession, where visibility, traceability, and ethical responsibility are paramount (Schweitzer, 2024; Parker & Guthrie, 2014). Thus, accounting journals and scholarly bodies have an opportunity, and arguably an obligation to lead the development of these frameworks. Collaborative efforts by academic associations, journal editors, professional bodies (e.g., CPA Australia, CA ANZ), and publishers could yield standard-setting initiatives similar to those advocated in medical and scientific publishing (Zhong et al., 2023). By doing so, the accounting discipline can demonstrate ethical leadership in the age of AI and provide a model for other fields navigating similar challenges.

### **Limitations and future research**

This study focused exclusively on journals listed in the ABDC Journal Quality List under FoR 3501 Accounting. While this is the latest publication to date that provides a rigorous disciplinary snapshot, future research could extend this analysis to journals in adjacent business fields (e.g., finance, management) or conduct comparative studies across regions.

This study assessed only publicly available author instructions. It is possible that additional internal policies exist at the editorial or publisher level that were not disclosed on public-facing platforms. Interview-based studies with editors and reviewers could further reveal policy implementation and enforcement challenges. Finally, as AI technologies continue to evolve, longitudinal research will be necessary to track shifts in journal policy and author practices, particularly in response to regulatory developments and technological advances.

### **Conclusions**

The integration of AI into academic publishing presents both transformative opportunities and complex ethical challenges for the accounting discipline. This study offers a bibliometric and thematic analysis of how accounting journals listed in the ABDC Journal Quality List are responding to the rise of AI tools. Our findings reveal a rapidly evolving but uneven policy landscape: while a growing number of journals, particularly those affiliated with major publishers, have adopted clear guidelines on AI use, a substantial proportion still lack explicit policies, leaving authors, reviewers, and editors navigating an uncertain and inconsistent regulatory environment.

Key themes emerging from our analysis include a broad consensus against attributing authorship to AI tools, a strong emphasis on disclosure and transparency, and conditional acceptance of AI for editorial assistance. However, critical gaps remain. Many journals provide limited guidance on how to distinguish acceptable from unacceptable uses of AI, and few offer robust procedures for detecting or addressing AI misuse. These shortcomings are particularly consequential in accounting, a field intrinsically tied to principles of transparency, accountability, and professional ethics.

The implications of these findings extend beyond scholarly publishing. As accounting research informs corporate governance, regulatory policy, and professional education, the standards set by journals will inevitably influence ethical norms across the broader accounting ecosystem. In this context, the development of a discipline-wide framework for AI governance is not merely desirable; it is essential. Such a framework should include standardised disclosure protocols, clear ethical boundaries for AI use, mechanisms for investigating suspected misuse, and the integration of AI literacy into peer review and editorial training.

In an era where AI is reshaping knowledge creation, accounting journals have a critical opportunity, and responsibility to lead by example. By establishing clear, coherent, and enforceable policies, the academic publishing community can uphold the integrity of the scholarly record while modeling responsible AI use for the profession at large. The future of ethical accounting scholarship will depend not only on technological innovation but on collective commitment to safeguarding academic trust in a digital age.

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## From Infrastructure to Growth: Evaluating PPP Investments in Morocco

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### Abstract

This study investigates the impact of public–private partnerships (PPPs) on Morocco’s economic growth over the period 1993–2023. GDP growth is employed as the dependent variable, with the number of PPP projects, PPP investment, gross fixed capital formation, unemployment, and inflation as explanatory variables. Using the Autoregressive Distributed Lag (ARDL) technique, the analysis captures both short-run and long-run dynamics. Results indicate that in the long run, PPP investment exerts a positive and significant effect on GDP growth, whereas the number of PPP projects has a negative impact, suggesting that project proliferation without efficiency may hinder performance. Gross fixed capital formation positively and significantly contributes to growth, while inflation exerts a negative and significant influence. Unemployment, although negative, is statistically insignificant in the long run. In the short run, PPP projects contribute positively, while unemployment consistently reduces growth. Gross fixed capital formation positively and significantly contributes to growth, while inflation exerts a negative and significant influence. Unemployment, although negative, is statistically insignificant in the long run. Robustness tests confirm the absence of serial correlation, heteroskedasticity, and non-normality, while

CUSUM and CUSUMQ verify model stability. These findings highlight that investment quality, rather than project frequency, is the key driver of Morocco's long-run growth, underscoring the need for governance and efficiency-centered PPP strategies.

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**Keywords:** Public–Private Partnerships, GDP growth, ARDL, Morocco, Investment

## Introduction

In recent years, governments in both developed and developing countries have faced growing challenges to finance infrastructure and development projects. The persistence of budget deficits, the risen public debt levels and the necessity to allocate essential resources for urgent social sectors such as health, education and social protection, have reduced their ability to maintain long-term investment in infrastructure. These fiscal pressures have been aggravated by the enduring impacts of the 2008 global financial crisis, the Eurozone debt crisis and more recent global shocks as the COVID19 pandemic and geopolitical uncertainty. In this context, governments are facing growing pressure to identify innovative financing tools that have the capacity to overcome infrastructure needs while preserving fiscal discipline.

In response to these challenges, Public–Private Partnerships (PPPs) have emerged as one of the most chosen tools used to mobilize the participation of the private sector in infrastructure and public service delivery. The combination of public oversight with private capital, expertise and risk-sharing arrangements, PPPs are expected to improve the quality and efficiency of infrastructure

PPPs are expected to improve the quality and efficiency of infrastructure while also contributing to economic growth. First developed in Anglo-Saxon countries (Chen & Man, 2020), the PPP model expanded in a significant way during the late 20th and early 21st centuries, that way becoming an important and even key policy instrument across Europe, Asia, Africa and beyond (Uddin & Aktir, 2021)."

International organizations have also contributed in the subject by playing a great role in clarifying and standardizing the concept. The World Bank Institute (2012) defines a PPP as "a long-term contract between a private party and a government agency for providing a public asset or service, in which the private party bears significant risk and management responsibility." Similarly, the OECD (2025) presents PPPs as a "long-term agreement between government and private partners whereby the private partner delivers and funds public services using a capital asset, sharing the associated risks."

From this perspective, PPPs are more and more recognized as effective growth tools; in this sense, the World Bank (2016) stated that well-structured

PPPs can play a decisive role in helping to overcome infrastructure constraints that hinder growth, particularly in developing economies. Likewise, the Asian Development Bank (Dordevic & Rakic, 2021) highlights the great benefits of PPPs, going from increased access to infrastructure and strengthening institutional and technical capacities, to improved transparency, management practices, better source allocation of public funds and the attraction of private capital into long-run investment projects.

Despite the expected benefits, the literature shows that the outcomes of PPPs on economic growth are far from being universal, which makes this a complex and debated issue. While various studies confirm their potential to support economic growth, others point to weak or even negative effects. For instance, Amedanou and Yawovi (2023) show that PPPs in Sub-Saharan Africa surpass traditional public investments by improving the quality and efficiency, that way they exerting a stronger positive influence on growth. Meanwhile, Yurdakul & al. (2020) identify only a weak link between PPP activity and GDP. Furthermore, Pimentel & al. (2016) stipulate that in Portugal, PPP investments led to crowding-out effects on both public and private investment, which produced a negative impact on GDP. These divergent and various results highlight the fact that the effectiveness of PPPs depends on sectoral allocation, the institutional and governance framework, and the global macroeconomic context in which these projects are integrated.

While the literature offers valuable insights into the potential of PPPs as tools for growth, important gaps remain. First, to the best of our knowledge, many of the existing studies are focusing on regions such as Asia, Sub-Saharan Africa, or the Eurozone, often with varying findings depending mainly on sectoral focus, methodological approaches, or institutional contexts. Evidence for North African economies, and Morocco in particular, is still limited despite the country's growing dependence on PPPs to finance strategic infrastructure projects. Second, this study examines both long-run equilibrium relationships and short-run dynamics by mobilizing the Autoregressive Distributed Lag (ARDL) approach. The ARDL is a robust econometric approach, and is suitable for small samples and mixed order integration of variables. Third, this study not only provides new evidence on the role of PPPs in the economic growth of Morocco, but also offers valuable insights for other emerging economies that are confronting similar fiscal and infrastructure challenges.

The structure of this study is organized as follows. The next section presents the case of PPPs in Morocco, followed by a comprehensive overview of the relevant literature. Then, the specification of the model equations and data employed. The empirical findings and insights are described. Finally, the study presents a concise summary of the key findings and suggestions for policy implications, and the next section discusses the empirical results and their implications.

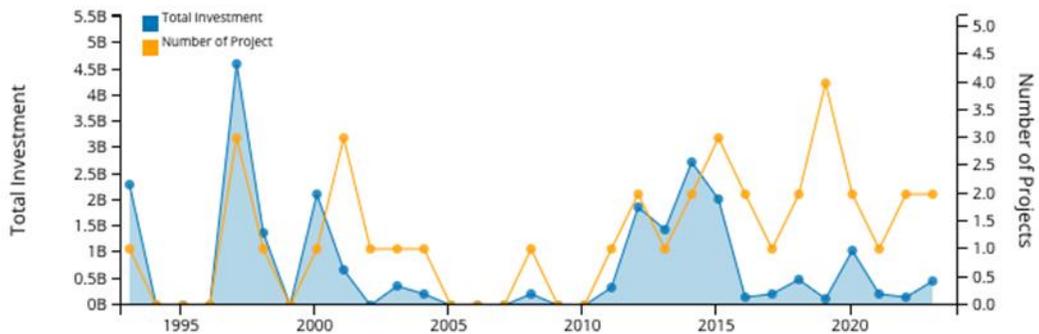
### PPPs in Morocco

Public–Private Partnerships in Morocco have their roots in the early 20th century. According to the Economic, Social and Environmental Council (CESE) in its report on Law 86-12, in 1914 Morocco introduced concession contracts in strategic and vital sectors such as drinking water supplies, railways and port infrastructure. In 1956, after independence, these concessions were progressively transferred to state-owned enterprises, in the process of nationalization.

A new emergence of PPPs occurred during the 1990s, when private operators were reintroduced in the management of public services. It is particularly over the last two decades that PPPs won more national visibility, especially with major projects such as the Tangier Med port, the Noor Ouarzazate solar power plant and other major transport infrastructure. This improvement was shaped by many major factors, such as the fragility of public finances, which limited Morocco’s ability to finance infrastructure by mobilizing traditional budgetary resources, the erosion of confidence in the state-led technocratic model and the continuously growing public demand for a higher and better quality of services.

According to the United Nations Conference on Trade and Development (UNCTAD, 2016), Morocco occupies the second position in Africa, recording cumulative investments of USD 27.5 billion, after Nigeria (USD 37.9 billion) and ahead of South Africa (USD 25.6 billion). This reflects Morocco’s strategic approach to mobilize private investment to complement public financing to develop infrastructure.

**Fig. 1.** PPP investment and project trends in Morocco



Source: PPI Visualization Dashboard - The World Bank & PPIAF

Figure 1 presents the evolution of PPP development in Morocco from 1993 to 2023, revealing notable fluctuations in both the number of projects and the volume of investment. The data show variability throughout the period, with clear peaks and downturns. Investment activity experienced a major surge between 2012 and 2015, with annual commitments surpassing

USD 2 billion, largely driven by the launch of capital-intensive infrastructure projects. This phase was followed by a slowdown in 2016–2017. PPP activity then showed a modest recovery between 2019 and 2021, before registering another decline in recent years, which reflects broader economic constraints and changes in national investment priorities.

### **Literature review**

Public–private partnerships (PPPs) are widely regarded as long-term contractual arrangements in which a government delegates the provision of a public good or service to a private operator involving a significant transfer of risk and managerial responsibilities (World Bank Institute, 2012). To understand how PPPs function and perform, the literature draws on three key theoretical frameworks: transaction cost theory, incomplete contract theory, and agency theory. Together, these approaches explain the contractual complexity, incentive structures, and governance challenges that shape PPP outcomes.

Transaction cost theory (Coase, 1937; Williamson, 1973, 1985) argues that economic transactions generate costs linked to negotiating, supervising, and adapting contracts. In PPP arrangements, these costs tend to be elevated because they rely on long-term and complex contracts that span the entire infrastructure life cycle. The inherent complexity of PPPs, combined with uncertainty and information asymmetry, reinforces the need for monitoring and repeated renegotiation. Williamson highlights three main determinants of transaction costs: Asset specificity – PPP investments are highly specialized and cannot be redeployed elsewhere, increasing dependence and risks of opportunism. Uncertainty – economic, technological, and institutional volatility makes contracts inherently incomplete and more susceptible to renegotiation, and finally, Transaction frequency – PPP projects are infrequent and infrequent, requiring strong governance systems. Overall, PPPs require robust institutional and contractual arrangements to effectively manage and limit transaction costs.

The incomplete contract theory holds that PPP contracts cannot account for every future contingency because of limited information and rationality (Hart & Moore, 1990). As a result, residual control rights—the ability to decide in unexpected situations—become crucial for determining project performance. Within PPPs, the private partner faces a choice between productive investments, which reduce costs while maintaining service quality, and non-productive investments, which cut costs but lower quality (Hart, 1997). Since contracts cannot fully rule out such behavior, the way rights and responsibilities are distributed is essential for aligning private incentives with public goals. This perspective helps explain why PPP outcomes vary

depending on contract design and the ability of public authorities to regulate and limit opportunistic behavior.

Agency theory (Jensen & Meckling, 1976) examines PPPs through the problem of information asymmetry between the public authority and the private operator. It underscores two major risks: Adverse selection, which arises before contracting, when the public sector must choose a partner without full knowledge of their actual capabilities. Moral hazard after the contract, when the private operator may reduce effort, overlook maintenance, or underinvest in quality due to limited monitoring (Laffont & Tirole, 1993). To limit these risks, PPPs incorporate performance-based clauses, payment systems tied to quality outcomes, and regular audits. Empirical evidence shows that these mechanisms—when supported by strong institutional oversight—ensure transparency, efficiency, and long-term project sustainability. Agency theory, therefore, highlights the need for well-designed incentives and monitoring frameworks to align private actions with public objectives.

These theories are reflected in a growing number of empirical studies. The relationship between Public–Private Partnerships (PPPs) and economic growth has attracted significant academic attention, yet the evidence remains divergent and far from being conclusive. While many studies highlight the developmental benefits of PPPs, others question their effectiveness, mentioning the methodological limitations, contextual differences and different institutional environments. Consequently, the literature offers no unified position regarding whether PPPs enhance economic growth, making further country-specific analysis necessary and timely.

A first group of studies advocates the perspective that PPPs contribute positively to growth, particularly through improvements in infrastructure provision and efficiency gains. In Asia, Lee & al. (2018) show that higher PPP-to-GDP ratios promote infrastructure accessibility and quality. Their study also reveals indirect macroeconomic benefits, indicating that when PPPs meet their objectives, governments can reallocate scarce fiscal resources to social sectors while mobilizing long-term private savings through pension and insurance funds. However, their analysis focuses mainly on aggregate indicators and does not totally address causality, raising the possibility that stronger economies attract more PPP projects. Similarly, Atapattu (2019) highlights that PPPs support growth in a significant way in nine Asian countries between 1990 and 2015, yet the study treats Asian countries as a homogeneous block despite various and wide institutional disparities that can influence PPP results.

In Africa, Amedanou and Yawovi (2023) report that PPPs outperform traditional public investment by improving the quality of service and expanding financing sources across a panel of 14 Sub-Saharan African economies. While their findings are promising, they depend on cross-country

regressions that can possibly suffer from endogeneity and measurement inconsistencies in PPP data. Within the same perspective, Mofokeng & al. (2023) find strong multiplier effects of PPP investments in the energy sector in 35 developing economies from 1997 to 2018. However, their sector-specific focus restricts the generalization of findings, the energy PPPs tend to be large, financially structured projects and do not reflect the performance of PPPs in social infrastructure or urban services. In the case of Morocco, Loukili & al. (2025) find a long-term positive and significant effect of PPP investment on Morocco's economic growth, offering important country-level evidence on the developmental role of PPPs. Their analysis, done at a macroeconomic level, provides an overview of the aggregate link between PPPs and GDP.

A growing body of recent empirical contributions attempted to uncover causal links between PPPs and growth employing more advanced econometric methods. Liu & al. (2024) used a difference-in-differences approach in Chinese cities and find that PPP adoption increases real GDP per capita by 2.9%, driven by increased investment, employment and human capital accumulation. Although the causal design significantly improves identification, the study is geographically specific and influenced by China's administrative structure and strong central coordination, which represent conditions not necessarily applicable in other developing countries. Yeboah (2024) argues that PPPs in sustainable building projects promote growth through technology transfer, financial mobilisation and job creation. Nevertheless, this study is conceptually oriented and does not provide long-term macroeconomic estimates. Gupta and Sharma (2024), focused on cross-country panel of 114 emerging economies, concluding that PPP attractiveness is highly dependent on market size, macroeconomic stability and regulatory quality, suggesting that the positive effects of PPPs are conditional, not automatic. Finally, Baba & al. (2025) provide the finding that PPP-driven energy infrastructure in BRICS economies decreases poverty and unemployment while enhancing long-term growth.

In contrast, a second strand of the literature warns against concluding that PPPs generate positive economic effects. Yurdakul and Kamasa (2020), examining the Moroccan case, find only a weak link between PPPs and growth, suggesting that other macroeconomic variables, such as debt dynamics, governance constraints, or investment efficiency, can dominate the economic performance. Meanwhile, Liu & al. (2022), focused on 52 studies on PPPs in smart cities, caution that in economies facing high or unsustainable debt burdens, PPPs can hinder fiscal vulnerabilities and undermine growth. Their systematic review also highlights a lack of long-term evaluation frameworks, with most studies assessing PPPs during early implementation and not over their full life cycle. Zuo (2024) adds more complexity by showing that PPP adoption in Chinese prefectures can negatively affect economic

performance. This suggests that PPPs may not only fail to deliver expected outcomes but may, in some cases, lead to structural inefficiencies.

Collectively, the literature reveals various elements that help explain why results on the PPP and growth relationship remain mixed. Firstly, many studies use macroeconomic data, which is appropriate for capturing aggregate trends but can make it difficult in some cases to fully address issues such as endogeneity or reverse causality. Secondly, regional and institutional characteristics are not always incorporated into empirical models, even if factors such as regulatory quality, governance arrangements, institutional capacity and fiscal conditions can strongly influence PPP performance. Incorporating these aspects helps clarify why outcomes differ between economies and highlights the importance of context-specific analysis. Lastly, the literature is generally done on Asia and large emerging economies, leaving North Africa, and particularly Morocco, relatively understudied despite the country's growing reliance on PPPs to face infrastructure needs.

Although many contributions advocate the potential of PPPs to promote economic growth through improved infrastructure delivery, efficiency gains and financing diversification, a significant body of research underscores the mixed or adverse effects, especially in settings characterized by weak governance, high debt burdens, or institutional fragility. These divergent findings show evidence that PPPs cannot be considered a universal tool for stimulating growth. Rather, their effectiveness depends on a complex interaction of economic, institutional, and project-specific factors. Due to this unresolved debate and the lack of robust empirical evidence for Morocco, a focused examination of the Moroccan case is necessary and justified to understand how PPPs operate and under what conditions they can effectively contribute to sustainable economic growth.

In light of the previous results of the empirical findings, our hypothesis to be tested is:

**Hypothesis: Public-private partnership investments are positively related to Morocco's long-run economic growth**

## **Data and methodology**

### **Data and model specification**

The study examines the impact of Public-Private Partnerships (PPPs), unemployment, investment, inflation and capital formation on economic growth in Morocco. In line with prior empirical research such as (Lee & al, 2018), (Mapule & al, 2023), (Loukili Z. & El Hamma A., 2025), we use GDP growth (annual %) as the dependent variable. The data is collected annually from the World Development Indicators (WDI, 2025) and the World Bank's Private Participation in Infrastructure (PPI) database, for the period from 1993 to 2023, counting a total of 31 observations. Table 1 provides a detailed

summary of the variables used in the analysis. Fig.2 illustrates the yearly trends of the used variables.

The following model presents the empirical framework used in the analysis:

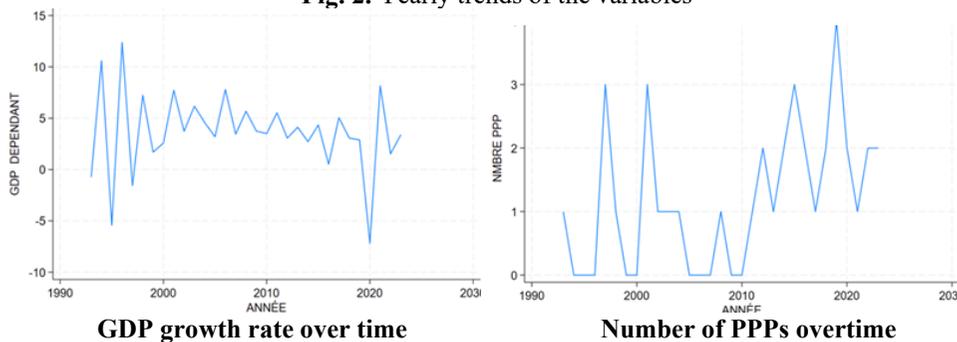
$$\text{GDPDEPENDANT}_t = \alpha_0 + \alpha_1 \text{NBREPPP}_t + \alpha_2 \text{INVPPP}_t + \alpha_3 \text{Unempt}_t + \alpha_4 \text{GFCF}_t + \alpha_5 \text{Inf}_t + \varepsilon_t$$

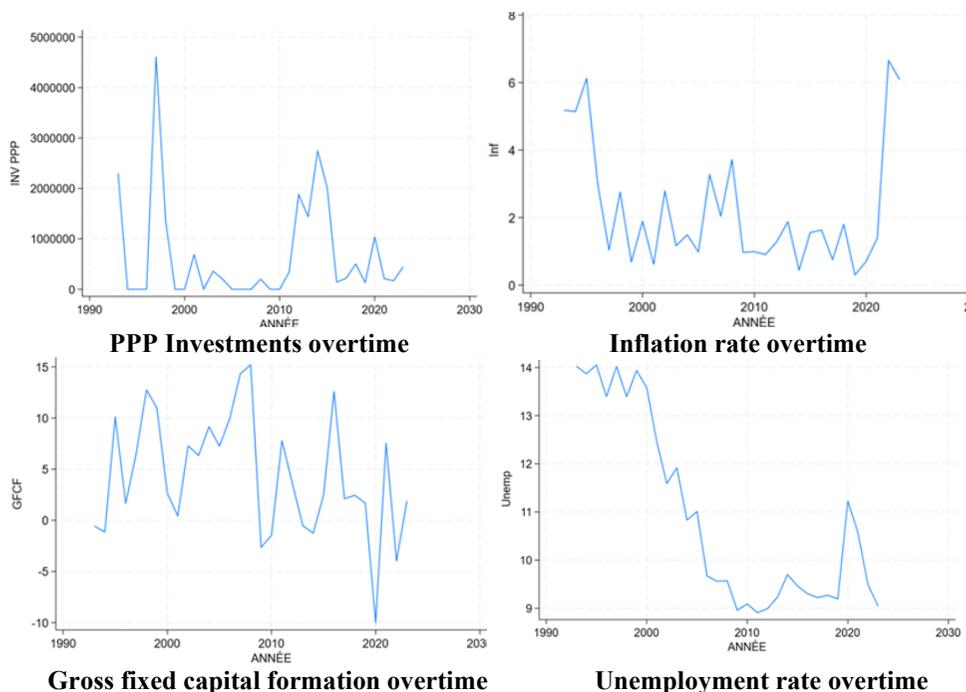
Where GDPDEPENDANT<sub>t</sub> denotes GDP growth (annual %), used as the dependent variable, NBREPPP<sub>t</sub> represents the number of PPP projects, INVPPP<sub>t</sub> refers to PPP investment (US \$), Unempt<sub>t</sub> stands for unemployment (% of total labor force), GFCF<sub>t</sub> indicates gross capital formation (% of GDP) and Inf<sub>t</sub> represents inflation, measured by consumer prices (annual %).

**Table 1.** A summary of the parameters and their sources

Parameter	Description	Source
GDPDEPENDANT	GDP growth (annual %)	World Bank (WDI)
NBREPPP	Number of PPPs (numbers)	World Bank's Private Participation in Infrastructure (PPI)
INVPPP	PPP investment (US \$)	World Bank's Private Participation in Infrastructure (PPI)
Unemp	Unemployment, total (% total labor force)	World Bank (WDI)
GFCF	Gross capital formation (% of GDP)	World Bank (WDI)
Inf	Inflation, consumer prices (annual %)	World Bank (WDI)

**Fig. 2.** Yearly trends of the variables





## Methodology

The first step of our analysis is to test the stationarity of the data. Implementing unit root tests is indispensable, as it helps prevent spurious or misleading regression results. Nonetheless, the effectiveness of unit root tests depends on sample size. Hence, the application of multiple tests is recommended to reduce the possibility of misinterpreting the integration characteristics of the time series (BENSOUDA.G & OUKASSIM 2025). To confirm the integration order of the variables and rule out I(2) processes, we conduct both the Augmented Dickey–Fuller (ADF) test (Dickey & Fuller, 1979) and the Phillips–Perron (PP) test (Phillips & Perron, 1988). Once stationarity has been confirmed, the next stage consists of estimating the ARDL bounds cointegration test introduced by Pesaran & al. (2001). This approach serves to assess the existence of a long-run relationship between the variables and accommodates regressors integrated of different orders, specifically I(0) and I(1). The ARDL model is estimated in Stata via the `ardl` command, applying the Akaike Information Criterion (AIC) for automatic lag determination a maximum of four lags. The bounds test examines the null hypothesis of no long-run relationship using the F-statistic. If the statistic exceeds the critical bounds, the null is rejected and confirming the existence of cointegration.

Equation 2 illustrates the ARDL bounds test:

$$\Delta GDP_t = \sum_{i=1}^p a_i \Delta GDP_{t-i} + \sum_{j=0}^{q_1} \beta_j \Delta NBREPPP_{t-j} + \sum_{i=0}^{q_2} \beta_i INVPPP_{t-i} + \sum_{l=0}^{q_3} \beta_l \Delta UNEMP_{t-l} + \sum_{m=0}^{q_4} \beta_m \Delta GFCF_{t-m} + \sum_{p=0}^{q_5} \beta_p \Delta INF_{t-p} + a_1 GDP_{t-1} + a_2 NMBREPPP_{t-1} + a_3 INVPPP_{t-1} + a_4 UNEMP_{t-1} + a_5 GFCF_{t-1} + a_6 INF_{t-1} + \varepsilon_t$$

$\Delta$  denotes the first-difference operator, The coefficients  $a_i, \beta_j, \beta_i, \beta_l, \beta_m, \beta_p$  refer to the short-run dynamic coefficients, while  $a_1$  to  $a_6$  denote the long-run relationship coefficients,  $\varepsilon_t$  denotes the error term

After establishing cointegration, the long-run coefficients are obtained from the level terms in the ARDL model while the short-run dynamics from the differenced terms. The Error Correction Term (ECM) reflects and indicates the rate of adjustment toward long-run equilibrium after a disturbance.

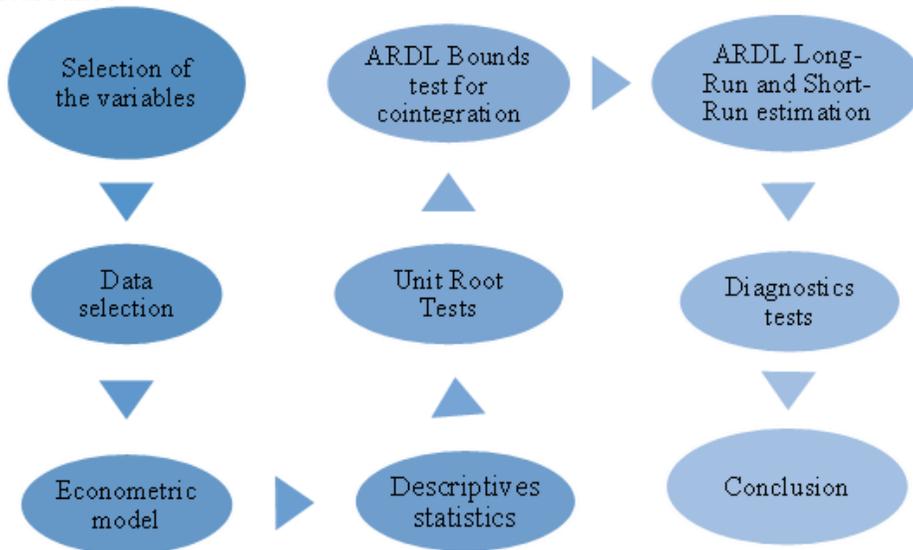


Fig. 3. Research flowchart

## Results and discussion

Table 2 presents the descriptive statistics for the variables used in the study. The mean value of GDP growth is 3.66%, with a standard deviation of 3.98%, indicating noticeable fluctuations. Its minimum and maximum values range from -7.18% to 12.37%, indicating periods of both economic contraction and growth in Morocco during the study period. The number of PPPs shows a mean of 1.19 projects, with values ranging from 0 to 4, which reflects relatively low but varying activity in terms of project frequency. PPP

investment averages 677,708 US\$, but with a high standard deviation (1,062,259), and values ranging from 0 to 4,608,000 US\$, revealing the volatility and uneven scale of PPP financing across years. Regarding macroeconomic indicators, unemployment records an average of 10.92% with limited variation, moving between 8.91% and 14.05%. Gross capital formation shows a mean of 4.36% of GDP but demonstrates significant dispersion, indicating unstable investment dynamics. Lastly, inflation records a mean of 2.23% with moderate variability.

**Table 2.** Descriptive Statistics

Parameter	Mean	Std. Dev	Min	Max
GDPDEPENDANT	3.662	3.983	-7.178	12.372
NBREPPP	1.193	1.108	0	4
INVPPP	677708.4	1062259	0	4608000
Unemp	10.921	1.946	8.91	14.052
GFCF	4.362	5.925	-9.998	15.209
Inf	2.235	1.826	0.303	6.657

Table 3 contains the results of the unit root tests. The study used the Augmented Dickey–Fuller (ADF) and Phillips–Perron (PP) procedures to evaluate the stationarity of the variables. The results confirm that GDP growth is stationary at level, integrated of order I(0), with significance confirmed by both ADF and PP tests. Similarly, the number of PPPs, PPP investment, and gross capital formation are also stationary at level, showing integration of order I(0). In contrast, unemployment and inflation are non-stationary in levels but become stationary after first differencing, which confirms their integration of order one, I(1).

Overall, the findings suggest a mix of I(0) and I(1) variables, with no variable integrated of order two I(2), making the use of the ARDL approach justified.

**Table 3.** Unit Root Test Results (ADF and PP)

Parameter	Test type	Level (p-value)	First Difference (p-value)	Order of Integration
GDPDEPENDANT	ADF	0.0027		I(0)
	PP	0.0000		
NBREPPP	ADF	0.004		I(0)
	PP	0.0014		
INVPPP	ADF	0.0341		I(0)
	PP	0.0025		
Unemp	ADF	0.8938	0.026	I(1)
	PP	0.8312	0.0000	
GFCF	ADF	0.0026		I(0)
	PP	0.0003		
Inf	ADF	0.9252	0.0127	I(1)
	PP	0.4617	0.0000	

Bolded p-values denote rejection of the null hypothesis at the 5 % level.

Table 4 presents the outcomes of the ARDL bounds test. The calculated F-statistic value of 19.19 which exceeds the upper critical bound value of 3.79 at the 5% significance level. This finding leads to the rejection of the null hypothesis of no long-run relationship, and confirm the existence of a stable cointegration between GDP growth, and the independent variables. The results therefore validate the presence of a long-run equilibrium association between economic growth and the explanatory variables in the model.

**Table 4.** Bounds Test for Cointegration.

Test statistic	Value	I(0) Bound	I(1) Bound	Conclusion
F-statistic	19.19	2.62	3.79	Cointegration exists
K = 5				

Table 5 presents the detailed results of the ARDL estimation. For the long-run relationship between economic growth and the explanatory variables, the estimates show that the number of PPPs has a statistically significant and negative effect on GDP growth, with a coefficient of  $-0.5203$  at the 5% significance level. This suggests that in the long run, a 1 unit increase in the number of PPPs is associated with a long-run decline in GDP growth by approximately 0.52 percentage points at a 5% significance level. By contrast, PPP investment exerts a positive and significant effect on growth at the 5% level, indicating that higher levels of PPP financing can contribute to long-run economic performance; in other words, larger investments in PPP projects can mobilize resources, improve infrastructure and stimulate productivity, which may contribute to the support of long-run economic growth. Evidence from studies done on other countries such as the research of Mapule & al. (2023), Lee & al. (2018), and for the case of Morocco Loukili & al. (2025), indicates that PPP investments positively impact growth. This is explained by their role in strengthening public infrastructure while fostering private infrastructure investment, which leads to a national production boost. While the results confirm that PPP investment has a positive and significant effect on long-run GDP growth, the number of PPP projects displays a negative long-run impact; these findings must be interpreted with caution. The variable “number of PPPs” reflects the frequency of project adoption but does not capture project efficiency, performance quality, or implementation outcomes. Consequently, the assumption that a higher number of PPPs may distort incentives, create coordination challenges, or signal the presence of low-performing projects remains plausible but cannot be empirically validated within the current model. Since key dimensions such as efficiency, governance quality, sectoral allocation, cost overruns, and risk-management outcomes are not included in the ARDL specification, the mechanism through which project proliferation

could dampen long-run growth should be regarded as a reasoned interpretation rather than a demonstrated causal pathway.

Regarding unemployment, it affects negatively but statistically insignificantly growth, indicating that variations in unemployment do not exert a strong long-run impact on GDP in this model. This finding may be explained by the structural nature of the labor market, such as informality and underemployment, which weaken the direct relation between unemployment and GDP growth. However gross capital formation, is positive and significant, 0.0951 at the 5% level, supporting the idea that higher investment shares in GDP stimulate long-run economic expansion. Meanwhile, inflation exerts a negative and significant effect, suggesting that the instability of the price represents a major constraint on Morocco's long-run growth outcome.

In the short run, the coefficients show more nuanced dynamics compared to the long-run findings. The results show that the number of PPPs impacts in a positive and statistically significant way GDP growth, with a coefficient of 0.7508 at the 5% significance level. This can indicate that a rise in PPP projects can cause immediate growth benefits, unlike the negative long-run impact found earlier, such as the findings of Loukili & al. (2025). The non-existence of a short-run impact of PPP investment may reflect the long implementation process of such projects, since their economic benefits appear only once projects become fully operational. This result goes hand in hand with findings by Papadomanolakis (2022), who noted that PPPs in the Eurozone primarily represents a complementary long-term instrument under fiscal constraints, while Mofokeng and al. (2024), emphasized that PPPs contribute positively to growth in the long run, particularly in the energy sector, rather than generating immediate impacts. Overall, these studies indicate that PPP investments are more likely to deliver lasting benefits over time rather than immediate short-run gains. On the other hand, unemployment and its lagged value both show negative, highly significant effects, which suggests that rising unemployment quickly weaken short-run economic performance. Gross capital formation, despite being a stimulation factor of growth theoretically, shows a negative but statistically insignificant coefficient, implying that the fluctuations of investment fail to immediately translate into growth effects in the short-run. The absence of inflation in the short-term estimation is due to the automatic lag selection process under the ARDL model. The model tends to retain only variables that have a significant impact on short-run dynamics, which automatically exclude the variables with weak or statistically insignificant lag structures. In the case of Morocco, this may indicate that short-run dynamics in inflation do not have immediate measurable impact on economic growth but can exert long-term effects. These findings collectively indicate that PPPs have the potential to act as counter-cyclical instruments in the short term.

The ECM is highly significant at the 1% level and carries a negative coefficient of  $-1.7831$ , which confirms the presence of a stable long-run relationship between the variables. This coefficient suggests that approximately 178% of any deviation from the long-run equilibrium is corrected within one year, implying a rapid adjusting process back to equilibrium. The model also shows a strong overall explanatory power, with an  $R^2$  of 0.91 and an adjusted  $R^2$  of 0.86, indicating that more than 86% of the fluctuation in GDP growth is explained by the independent variables included in the model.

**Table 5.** Results of ARDL long- and short-run analysis.

Variables	Coefficient	t-Statistic	p-value
<b>Long-run relationship</b>			
NBREPPP	-0.5203 **	-2.61	0,018
INVPPP	5.23e-07 **	2.69	0,015
Unemp	-0.1207	-1.36	0,190
GFCF	0.0951 **	2.41	0,027
Inf	-0.2800 **	-2.71	0,014
<b>Short-run dynamics</b>			
NBREPPP ( $\Delta$ NBREPPPt)	0.7508 **	2.73	0.014
Lagged Unemp ( $\Delta$ Unempt-1)	-3.3666 ***	-6.64	0.000
Unemp ( $\Delta$ Unempt)	-1.8984 ***	-3.47	0.003
GFCF ( $\Delta$ GFCFt)	-0.0695	-1.37	0.189
Constant	8.7376 ***	4.75	0.000
Error Correction Term (ECM)	-1.7831 ***	-18.84	0.000
R-SQUARED	0.9142		
Adjusted R-squared	0,8666		

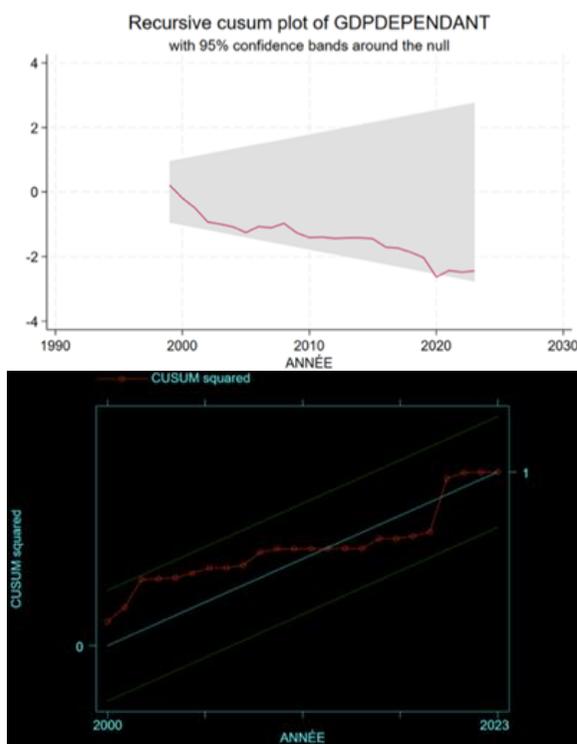
Note: \*p < 0.10, \*\*p < 0.05, \*\*\*p < 0.01

Table 6 presents the results of the diagnostic tests conducted to evaluate the statistical reliability of the ARDL estimation. First, the Jarque–Bera test for normality of residuals produced a statistic of 0.27 with a p-value of 0.8738, indicating that the residuals are normally distributed. Second, the Breusch–Godfrey LM test for autocorrelation, applied with two lags, returned a statistic of 4.745 and a p-value of 0.0933. This result fails to reject the null hypothesis of no autocorrelation, suggesting that the residuals are free from serial correlation. Finally, the Breusch–Pagan–Godfrey test reported a statistic of 0.05 with a p-value of 0.8306, confirming the presence of homoscedasticity. Overall, the results of these diagnostic tests provide strong evidence that the ARDL model is well specified and statistically reliable.

**Table 6.** Diagnostic Tests

Test	Statistic	p-value	Conclusion (5%)
Jarque-Bera test	0.27	0.8738	Residuals normal
Breusch-Godfrey LM test (lag=2)	4.745	0,0933	no autocorrelation
Breusch-Pagan- Godfrey test	0.05	0.8306	homoscedasticity

Figure 4 reports the outcome of the CUSUM and CUSUMQ test used to assess the structural stability of the ARDL model. The results show that the CUSUM and CUSUMQ statistics stays within the 5% significance bounds over the entire sample, indicating no evidence of structural breaks or parameter instability. This implies that the estimated coefficients remain stable over time, enhancing confidence in the robustness of the model’s long-run equilibrium and short-run dynamics. In addition, the visual trajectory displays a smooth cumulative variance, with no sudden deviations beyond the confidence limits, thus fulfilling a key assumption for valid inference in time series analysis.



**Fig. 4.** CUSUM and CUSUM of Squares Tests

## Conclusion

Our study examines the relationship between public-private partnerships (PPPs) and economic growth in Morocco over the period 1993–2023. GDP growth is employed as the dependent variable, while the number of PPPs, PPP investment, and control variables such as gross fixed capital formation, unemployment, and inflation are used as explanatory variables. To investigate both the long-run and short-run dynamics, the ARDL approach is applied. As a first step, the ADF and PP unit root tests were conducted, and the results indicated that unemployment and inflation are integrated of order  $I(1)$ , while GDP growth, the number of PPPs, PPP investment, and gross fixed

capital formation are integrated of order  $I(0)$ . Secondly, the ARDL bounds test confirmed the existence of a stable long-run relationship among the variables.

The long-run estimates show that the number of PPPs exerts a statistically significant negative effect on GDP growth, suggesting that an increase in the number of projects is associated with weaker economic performance when not accompanied by efficiency and quality. By contrast, PPP investment demonstrates a positive and significant long-run impact on GDP growth, indicating that higher levels of financing mobilize resources, improve infrastructure, and stimulate productivity. Although the number of PPP projects in Morocco remains relatively limited, the volume of investment is concentrated in a few large-scale operations, reflecting the country's focus on strategic infrastructure. This suggests that Morocco's PPP strategy is oriented more toward transformative, capital-intensive projects than toward a high frequency of smaller initiatives.

In the short run, the number of PPPs exerts a positive and significant effect on GDP growth, while unemployment shows a strong negative impact both contemporaneously and with a lag. Gross fixed capital formation is insignificant, and the error correction term, negative and highly significant, confirms a rapid adjustment toward long-run equilibrium following short-run shocks.

To validate the robustness of the model, several diagnostic tests were performed. The Jarque–Bera, Breusch–Godfrey LM, and Breusch–Pagan–Godfrey tests confirmed the absence of residual non-normality, autocorrelation, and heteroskedasticity. Moreover, the CUSUM and CUSUMQ tests confirmed the stability of the estimated parameters over the study period.

A key limitation of this study lies in the absence of project-level performance indicators for PPPs. The empirical strategy relies on aggregate measures such as the number of PPP projects and the total volume of PPP investment, which do not reflect differences in project quality, implementation efficiency, governance arrangements, risk allocation, or sectoral characteristics. Consequently, although the negative long-run coefficient associated with the number of PPPs may suggest potential issues related to project effectiveness or institutional bottlenecks, the present analysis cannot verify these mechanisms empirically. The explanation remains indicative rather than causal. Future research should incorporate granular indicators such as cost–benefit performance, completion delays, sectoral breakdown, or institutional quality metrics to more accurately capture how individual PPP characteristics affect growth dynamics.

Overall, these findings highlight the importance of PPP investment as a lever for sustainable economic growth in Morocco. From a policy standpoint, the results point to the necessity of reinforcing PPP investment

strategies that emphasize quality, efficiency, and long-term developmental impacts. Future research could extend this analysis by incorporating indicators of governance and institutional quality, including measures of project efficiency, examining PPPs in specific sectors such as health, energy, or transport, and conducting comparative studies with other MENA economies to better capture the regional dynamics of PPP growth.

**Conflict of Interest:** The authors reported no conflict of interest.

**Data Availability:** All data are included in the content of the paper.

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## Teachers' Attitudes towards Using Cooperative Learning through Technology for Developing Writing Skills in a Military Context

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### Abstract

Teachers of English for Specific Purposes (ESP) consider writing one of the most challenging productive skills for military students to master. Writing is a vital skill for their future careers, as they must pass the high-stakes STANAG 6001 (Standardisation Agreement 6001) test for promotion. Teachers play a crucial role in teaching ESP by addressing students' current needs and designing goal-oriented assignments to develop their writing skills and improve performance. Therefore, the purpose of the study was to explore ESP teachers' attitudes toward using cooperative learning through technology to enhance writing skills and to assess their readiness to implement this instructional strategy, since successful implementation largely depends on teachers' attitudes. The study used a quantitative approach. Data were collected through a questionnaire and analyzed with descriptive statistics. Participants included 58 teachers from various military educational institutions in NATO member, partner, and candidate countries such as Georgia, Ukraine, Latvia, and the UK. SPSS 27 was used for data analysis. The results show that most ESP teachers have positive attitudes toward using cooperative learning via technology to develop writing skills, as it can foster cooperation among English language learners. Although teachers note that

students lack the necessary skills for effective cooperative group work and that the method places too much responsibility on students, these findings suggest that this complex approach has the potential to help military students improve their writing performance.

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**Keywords:** Writing performance, information and communication technology (ICT), military writing, military English (ME), English for specific purposes (ESP)

## **Introduction**

In the current development of information and communication technology (ICT), which is dominated by tablets, smartphones, and touch screen devices for various interests, the integration of technology becomes essential for teachers to meet the current needs of students at military academies and schools (Sulisworo et al., 2016). ICT influences teaching and learning methods in professional military education, emphasizing innovation in classrooms and student-teacher interactions (Santos et al., 2019). ESP teachers need to be trained and equipped with appropriate technology for classroom use; however, it will not impact student learning until teachers develop a positive attitude toward using and integrating ICT into their teaching (Liton, 2014). Therefore, it is important to explore how English for military purposes (EMP) can benefit from ICT to improve writing skills and what challenges ESP teachers face when integrating cooperative learning strategies through technology in language instruction.

## **Statement of the Problem**

Teachers of English for Specific Purposes (ESP) see language acquisition as one of their main goals. When it is well integrated into students' academic curriculum, it is more likely to be achieved. Knowing what needs to be taught motivates ESP teachers to consider how to teach it, and they must base their decisions on the specific learning environment, the knowledge, skills, and strategies of the students, and, of course, their motivation to learn (Dudley-Evans & St John, 1998). It can be said that teachers should consider future needs, wants, and expectations when designing an ESP course.

The military profession necessitates a wide range of comprehensive competencies and skills for the military to execute its duties and obligations (Santos et al., 2019). Writing is one of the essential skills that military students need for their education and career. People who work in the Georgian Armed Forces place a high value on writing in English because it is the official language of NATO. For every military personnel assigned to work in a global army environment, written communication is essential. Additionally, military and civilian personnel from NATO member, partner, and candidate countries

are eligible to take the STANAG 6001 test (Bureau for International Language Co-ordination, 2025), which is based on NATO STANAG 6001 5th Edition specifications in all four skills: listening, speaking, reading, and writing. Its purpose is to evaluate the level of English language proficiency of military and civilian personnel who are appointed to various positions in NATO headquarters/military missions, or promoted in the system of the Ministry of Defence (Ministry of Defence of Georgia, 2025). Therefore, it is crucial to train officers who have to work with multinational military personnel.

Military students consistently use their writing skills to communicate with their foreign peers. Without learning and mastering this ability, these professionals cannot function effectively or perform their duties. The aim of teaching writing to ESP students is to help them become proficient in specific genres. In this context, teachers focus not only on writing itself but also on particular forms of writing that are expected in various academic and professional environments (Likaj, 2015). As a result, the idea of the student's needs remains crucial to ESP practice, which prioritizes the communication process over isolated linguistic elements. Therefore, the ESP student should not be viewed as a passive recipient; rather, a person playing an active part by using writing to deliver clear messages.

It is important to note that, according to the decision of the Ministry of Defence of Georgia, the format of the STANAG exam will change from 2025, and military personnel will have to take a computer-based STANAG exam (Ministry of Defence of Georgia, 2025). Therefore, using cooperative learning strategies through technology can help them improve their writing skills and successfully pass the exam, which is crucial for their career advancement. Moreover, online learning environments and internet-based pedagogy can assist both teachers and students in overcoming obstacles in the teaching and learning of writing skills, such as a lack of motivation and time constraints, to support writing (Cahyono & Mutiaraningrum, 2016). Johnson and Johnson (2014) describe cooperative learning as the use of small groups in instruction to help students collaborate to maximise both their own and each other's learning. Thus, cooperative learning is the most effective instructional approach for military students because military students enjoy working in groups and following instructions, and being given a specific task to complete encourages cooperation and sharing.

Considering all the factors discussed above, one of the top priorities for teachers at the Language Training School of the Ministry of Defense of Georgia is to improve military students' performance in all four skills, especially the writing skill. Teachers should focus on creating goal-oriented assignments that align with the specific interests of the target groups to maximise the benefits of cooperative learning to enhance students' writing performance. Evaluating teachers' attitudes towards online cooperative

learning before implementation and taking timely measures for related problems will undoubtedly contribute to the successful implementation. For this reason, the purpose of the study is to explore ESP teachers' attitudes towards writing and utilising cooperative learning through technology to improve writing skills.

### **Characteristics of Writing for Military Purposes**

Writing is considered to be a highly complex cognitive activity. Besides managing content, format, sentence structure, vocabulary, punctuation, spelling, and letter formation at the sentence level, the writer should be able to arrange and incorporate information into paragraphs and texts that are cohesive and coherent (Suryana & Iskandar, 2015).

Writing in ESP is purpose-oriented because students should learn various forms of writing that emphasize purpose over content when focusing on composition. Hyland (2013) states that ESP writing specifically aims to develop new literacy skills, such as providing students with the communication skills they need to participate in specific academic and professional communities, rather than just improving generic writing skills that students have not been able to master in school. Teachers are encouraged to teach writing skills because they believe that students gain more knowledge about a variety of subjects, practise real-life scenarios, improve their organisational skills, develop their communication abilities, learn more grammar structures, expand their vocabulary, and learn to see things from different perspectives. Moreover, written communication in ESP occurs in a multicultural setting. ESP courses require educators to teach their students a variety of skills, such as negotiating meaning or transferring certain cultural values from one language to another, in addition to the intended professional terms. Since military students and personnel often need to explain cultural phenomena when communicating with professionals from other nations, writing skills are often more crucial in military English than speaking or other language skills (Swiatek & Braszczyńska, 2020).

Military English (ME) is a specialized language that uses a very limited set of military terms. It includes many specific words and abbreviations related to the military sector (Fabijanic & Malenica, 2014). Standards of military writing require students to do it precisely, succinctly, and as clearly as possible to prevent errors and any misunderstandings. This is why it tends to become the most challenging skill. Writing for the military is not like writing for other purposes. Students need to be familiar with the rules and restrictions drawn from the Army Standard of writing. Effective military writing is usually brief, well-structured, straightforward, and free of grammatical and mechanical faults. It also conveys a clear message in a single, brief reading (Lythgoe, 2023). The “bottom line up front” (BLUF) concept is

a key strategy for delivering messages in military writing. It emphasizes that all military writing should start with the main idea for fast message delivery and easy understanding. This guideline appears to be consistent across all military publications (McNitt, 2021).

When teaching writing to military personnel, teachers should consider the following qualities that characterize effective military writing: Clarity - students should ensure that their explanations, examples, and concepts are easy for the reader to understand; Accuracy - students should use correct grammar, punctuation, spelling, and terminology; Simplicity - students should employ straightforward language; Conciseness - students should include only essential details; Coherence - students should organize concepts logically and connect phrases to provide context and meaning; Emphasis - students should arrange ideas based on their importance; Relevance - students should answer relevant questions and help resolve them; Completeness - students should include all relevant information (Obilisteanu & Niculescu, 2017, p. 345). When writing a military document, students should remember that its goals, content, and target audience differ from those of a general document. In an operational paper, abbreviations are used as often as possible, except for the mandatory titles of written operational and administrative orders, which cannot be abbreviated. If necessary, the speaker's exact words should be quoted for emphasis, even if the content is presented in the form of a note. Typical military writings include Reports, Formal and Informal Letters - also required for the English language exam, in accordance with STANAG 6001 (Bureau for International Language Co-ordination, 2025) - Emails, Orders, Memoranda, PowerPoint Presentations, and Briefings (Obilisteanu & Niculescu, 2017, pp. 344-345).

### **The teacher's role in cooperative learning**

Cooperative Learning (CL) is rooted in the theories of behavioural learning, cognitive development, and social interdependence. Unlike competitive or individualistic learning, cooperative learning has been closely linked to improved psychological well-being and greater efforts to build positive interpersonal relationships, according to certain studies (Seyoum & Molla, 2022). For military students, cooperative learning groups that encourage strong relationships can offer opportunities to develop both professional and general skills.

Instead of competing with or working independently from their peers, students participating in cooperative learning collaborate to achieve a shared academic goal (Zakaria et al., 2013). Unlike traditional group work techniques, cooperative learning involves challenging assignments and a set of rules that teachers should follow (Khan et al., 2020). Because cooperative learning requires teachers to observe, encourage, and mentor student

interactions to help students solve problems, teacher skills are therefore essential to its successful implementation (Chakyarkandiyil & Prakasha, 2023).

Johnson and Johnson (2014) claim that even if face-to-face interactions are still beneficial, technology can enhance cooperative learning through better reading, writing, discussions, and multimedia projects. ESP teachers can maximise the benefits of cooperative learning by incorporating technology into CL to improve military students' performance by appealing to their academic and professional interests, because of the aforementioned considerations. However, creating goal-oriented assignments that take into account the target groups' particular interests requires a lot of work (Chakyarkandiyil & Prakasha, 2023).

According to Johnson and Johnson (2009), effective design and implementation of cooperative learning require teachers to focus on five key components. The first is establishing positive interdependence within the learning environment. The second is promotive interaction, which refers to group members' willingness to support and help each other's efforts to complete tasks, aiding the group in reaching its goals. The third is individual accountability, making sure each person completes their part of the work. The fourth component is social and interpersonal skills. Teachers can improve group dynamics by providing students with feedback on how they are using these skills, which can enhance cooperation when working in groups. The fifth essential component is group processing, where students reflect on their growth and cooperative relationships (Gillies, 2016).

According to the five key components of cooperative learning listed above, a teacher's participation is crucial to the effective application of this complex approach (Liebech-Lien, 2020). Consequently, when it comes to putting cooperative learning into practice in the classroom, teachers have specific responsibilities that fall into three stages:

**Pre-implementation stage.** Johnson and Johnson (2009) state that the instructor should utilise this phase to organise the classroom, divide the class into groups, determine the size of each group, prepare instructional materials, and describe the goals of cooperative learning.

**Implementation stage.** During this phase, teachers' responsibilities include monitoring behaviour, addressing conflicts or off-task behaviour, assisting groups with their needs, and deciding when and which group to intervene with. When students complete work well, it is important to praise them.

**Post-implementation stage.** During this phase, teachers' responsibilities include summarising the main points of the lesson, evaluating students' understanding, and rewarding groups that perform well (Seyoum & Molla, 2022).

Individualism and insufficient teacher preparation hinder the implementation of CL in the classroom, despite extensive research by educational psychologists demonstrating its many benefits (Duran et al., 2019). This occurs because teachers' instructional methods and professional skills do not align with the scientific evidence supporting the success of cooperative learning. Teachers find it difficult to form CL groups, set CL goals, and develop CL strategies for specific subjects (Chakyarkandiyil & Prakasha, 2023). Similarly, Liebech-Lien (2020) claims that most teachers' unfamiliarity with CL is a significant barrier to its successful implementation. They observe that although the method has a solid theoretical basis, it is not effectively implemented or promoted by schools and universities. Furthermore, Moges (2019) argues that a lack of reflection on professional experience makes it harder for novice and untrained teachers to effectively apply CL techniques.

Duran et al. (2019) identify the main and most common mistakes educators make while introducing cooperative learning into their classrooms. These include excessively large and homogeneous teams, unclear instructions, insufficient time for interaction, and a great deal of physical distance between team members; poorly planned activities; switching teams before problems are resolved; lack of training in social skills; inadequate assessment of the team's performance; and, finally, evaluation of complex cooperative work too early. These issues lead to negative opinions of CL held by both teachers and students. Teachers who have received CL training are more likely to incorporate it into their lessons, which provides students with a more engaging and beneficial learning environment (Opedecam & Everaet, 2018). Therefore, teachers who successfully apply CL are more likely to think it has advantages.

Although Johnson and Johnson (2014) note that integrating technology into collaborative learning increases student collaboration, communication, and group work, teachers encounter extra challenges when applying online collaborative learning. For example, many teachers lack the confidence and experience to work with digital tools, which makes classroom management difficult.

### **Related studies**

Nowadays, the changing demands of younger generations (Generation Z and Millennials), the introduction of technology in the classroom, and the diversity of learning styles pose challenges for military schools. Technology enables real-time communication, content visualization, and collaborative learning. Although there are some obstacles, such as individual circumstances and policies of military educational institutions, most students and teachers have a positive attitude towards the use of information and communication technologies (ICT) in the classroom (Santos et al., 2019).

A substantial amount of research has been done in the last few decades on the effects of cooperative learning on students' academic achievements and writing performance. However, very little research has been conducted on teachers' attitudes towards using cooperative learning via technology to develop students' writing skills, especially in the military context.

The article written by Jalil and Mohamad (2024) examines the challenges and strategies of Malaysian ESL (English as a Second Language) teachers in implementing Technology-Enhanced Collaborative Writing (TECW). The study findings show that Malaysian ESL teachers face difficulties when integrating technology into collaborative writing classrooms. Limited technological skills create difficulties in using TECW. Many teachers lack confidence and experience with digital tools since transitioning from traditional teaching methods to TECW was challenging, and managing students' engagement and ensuring effective collaboration was difficult. Furthermore, classroom control becomes more complex with digital tools, and a poor internet connection disrupts lessons and hinders teachers' ability to integrate technology effectively. According to the study, TECW can enhance ESL instruction, but teachers need support and access to better resources. It is also important to note that teacher training is crucial for a successful TECW implementation.

In the dissertation, Adams (Adams, 2023) explores the relationship between teachers' attitudes and perceptions of cooperative learning strategies and their self-efficacy in an online setting. The study used a mixed-methods approach, combining quantitative surveys with qualitative responses from 123 college educators. According to the research, teachers with higher self-efficacy tend to have more positive attitudes toward cooperative learning strategies in online education. More experienced teachers showed stronger support for cooperative learning strategies in online settings. The qualitative data showed that teachers highlighted factors that influenced their perceptions, including limitations, strategies, and effects on students. Overall, the study underscores the importance of teacher self-efficacy and experience in effectively implementing cooperative learning in digital classrooms.

Murad (2021) studied English teachers' attitudes toward collaborative teaching methods and their effects on students' writing and speaking skills. The purpose of the research was to evaluate how collaborative learning impacts students' English language abilities and teachers' familiarity with these techniques. According to the findings, teachers generally supported collaborative learning and recognised its value in improving students' writing skills. The importance of using technology in combination with the collaborative methods was also highlighted. Some teachers noted the need for teacher training in collaborative instruction. Overall, the paper promotes

integrating collaborative learning into teacher training programs to maximise its benefits for language education.

In the same year, Boubeka and Maouche (2021) explored Algerian EFL teachers' attitudes towards collaborative writing. It examines the challenges limiting its effective implementation and proposes recommendations. A study surveying 41 EFL teachers from Algerian universities found that most support collaborative writing but use it sparingly due to the challenges. Study findings reveal that teachers should reconsider integrating collaborative writing into their curriculum by encouraging student participation, motivation, providing training for effective collaborative writing strategies, and developing fair assessment methods for group-written texts.

Based on the literature review, teacher training is a recurring challenge; without it, even the most effective cooperative strategies fail. The findings suggest that training programs for teachers should include cooperative learning strategies (Jalil & Mohamad, 2024; Adams, 2023; Murad, 2021; Boubeka & Maouche, 2021). The majority of teachers find it challenging to switch from traditional to Technology-Enhanced Collaborative Writing (TECW) approaches because they feel unprepared, which limits their ability to effectively manage student participation and engagement. Additionally, teachers' lack of technological proficiency and poor internet connectivity make it difficult for them to use TECW effectively in classes (Jalil & Mohamad, 2024). This illustrates how the use of TECW techniques can be facilitated or impeded by infrastructure.

It is also important to highlight that there is limited research on teachers' attitudes toward integrating cooperative learning through technology to improve writing skills, and no existing research on this topic in the military setting. Considering these factors, this study explores the following research questions:

- What are the ESP teachers' attitudes towards integrating technology in teaching writing?
- What are the ESP teachers' attitudes towards the integration of cooperative strategy via technology in a writing course?

## **Methods**

According to Creswell (2014), quantitative research allows researchers to measure and understand reality through empirical observation. By using standardized and structured instruments, such as surveys and experiments, researchers attempt to minimize subjective biases and ensure the reliability and validity of their findings. This study used a descriptive quantitative research design. Quantitative data were collected and analyzed from teachers' online surveys. The data from the teacher surveys were analyzed descriptively, and the results were interpreted.

## **Participants**

Purposive sampling method was used to gather information about teachers' attitudes towards using cooperative learning through technology for developing writing skills. The majority of participants were from three different military educational institutions in Georgia and military educational institutions of several NATO member and candidate countries. The age of the research participants ranged from 25 to 62, with 55 female and 3 male teachers with teaching experience ranging from 5 to 20 years.

## **Instruments**

A comprehensive online questionnaire was designed to investigate teachers' attitudes towards using cooperative learning through technology for developing writing skills, in particular, a digital whiteboard platform such as Padlet. By enabling real-time collaboration, commenting, and voting on posts, this digital platform promotes teamwork and active participation, making it suitable for both online and traditional classrooms. The questionnaire was adapted from previous studies (Aysu, 2020; Wesley & Plummer, 2021; Chuong, 2022), which was sent to two faculty members for checking its validity. The teacher's questionnaire consisted of 18 items with five multiple-choice, two open-ended, and eleven 5-point Likert scale questions. The questionnaire included items on demographic information, writing instruction practices, use of cooperative learning in writing instruction, effectiveness, challenges of integration of cooperative learning via technology, and additional insights. A Google Form was used for designing and administering the questionnaire, which was sent through formal email, Messenger, and WhatsApp groups. SPSS 27 was used to analyse the obtained descriptive data. Participation in this research was anonymous and voluntary. Participants provided informed consent before taking part, and the study adhered to the ethical guidelines of the Language Training School of the Ministry of Defence of Georgia.

## **Results**

### **Teachers' Survey analysis**

Most respondents, 94.8% (N=55), are female, while 6% (N=3) are male. Regarding teaching experience, 88% (N=46) of teachers have more than ten years of experience. Twelve percent (N=11) of teachers have between five and ten years of experience.

Table 1 shows the frequency and descriptive analysis of teachers' attitudes toward using technology-based cooperative learning to improve writing skills. The SPSS software was used to calculate the mean, median, mode, standard deviation, skewness, and kurtosis for each questionnaire item.

**Table 1:** Frequency and descriptive analysis of teachers' attitudes towards using cooperative learning through technology for developing writing skills

Item	Statement	Strongly agree	Agree	Neutral	Disagree	Strongly disagree	Mean	Median	Mode	Standard Deviation	Skewness	Kurtosis
1	Writing is more difficult to teach than other language skills(listening, speaking, and reading).	15% 9	50% 29	22% 13	12% 7	0% 0	2.31	2	2	0.88	0.44	-0.37
2	Students enjoy sharing their writing.	3% 2	20% 12	46% 27	29% 17	0% 0	3.01	3	3	0.8	-0.44	-0.3
3	Technology can help develop writing skills.	12% 7	58% 34	27% 16	2% 1	0% 0	2.18	2	2	0.66	0.15	0.07
4	I feel confident in my ability to integrate technology into my English language teaching.	27% 16	55% 32	12% 7	5% 3	0% 0	1.94	2	2	0.78	0.77	0.73
5	I feel that technology can help me better assess and track student progress.	12% 7	5% 3	17% 10	53% 31	12% 7	3.48	4	4	1.15	-1.04	0.3
6	I believe that implementing cooperative learning via technology helps students develop writing skills.	10% 6	65% 38	24% 14	0% 0	0% 0	2.13	2	2	0.57	0.003	-0.007
7	I understand cooperative learning well enough to implement it successfully.	13% 8	60% 35	20% 12	5% 3	0% 0	2.17	2	2	0.72	0.56	0.58
8	Cooperative learning helps meet my school'/institution's goals.	8% 5	70% 41	20% 12	0% 0	0% 0	2.12	2	2	0.53	0.12	0.49
9	Students lack the skills necessary for effective cooperative group work.	5% 3	60% 33	31% 18	7% 4	0% 0	2.39	2	2	0.69	0.54	0.18
10	Cooperative learning involves too much responsibility for students.	9% 5	43% 25	32% 19	15% 9	0% 0	2.55	2	2	0.86	0.17	-0.63
11	Technology can help promote cooperative learning among English language learners.	10% 6	74% 43	13% 8	2% 1	0% 0	2.06	2	2	0.55	0.66	2.43

The results of the teacher questionnaire show that the mean, mode, and median are close to each other for all items, which indicates the trustworthiness of the results. Standard deviation values range from 0.53 to 1.15. The findings suggest that participants' viewpoints on all statements (except statement 11) do not vary greatly, implying that the group is homogeneous in their attitudes toward these issues. Skewness and kurtosis for most items fall between -1.04 and 0.77 (except statements 9 and 11), indicating a normal distribution. Regarding kurtosis for items 9 and 11, the values range from 2.43 to 3, suggesting the distribution is mesokurtic, meaning more values are concentrated around the mean compared to a normal distribution.

The mean for all items (except items 2 and 11) ranges from 1.94 to 2.55, indicating that most participants responded positively to the statements. The means for items 2 and 11 are higher (between 3.01 and 3.48) compared to other items, which suggests that teachers had negative responses to those statements.

The results for item 1 show that 15% of teachers (N=9) strongly agree and 50% (N=29) agree that writing is more difficult to teach than other language skills, while 22% of respondents (N=7) hold neutral views on the statement, and 12% (N=7) disagree. Although 22% (N=7) neither agree nor disagree, the majority of teachers, 65% (N=38), assert that writing is more difficult to teach than other language skills.

When asked whether students enjoy sharing their writing 46% (N=27) of teachers expressed neutral attitudes toward the statement, and 29% (N=17) disagreed. Meanwhile, 20% (N=12) agreed, and only 3% (N=2) strongly agreed. Overall, the results indicate that most teachers believe students do not enjoy sharing their writing.

The results for item 3 show that 12% of teachers (N=7) strongly agree and 58% (N=34) agree that technology can help develop writing skills. However, 27% (N=16) of teachers neither agree nor disagree with the statement, and only 2% (N=1) of respondents disagree. According to the results, the majority of teachers, 70% (N=41), gave positive responses to the statement.

When teachers were asked if they felt confident in their ability to incorporate technology into their English language teaching, 27% (N=16) strongly agreed and 55% (N=32) agreed with the statement. 12% (N=7) remained neutral, and 5% (N=3) disagreed. The results showed that the majority of teachers, 82% (N=48), believe they are confident in their ability to integrate technology into their English language instruction.

The results for this statement were quite different from those of other statements. 12% (N=7) of respondents strongly agreed, and 5% (N=3) agreed that they felt technology could help them better assess and track students' progress, while 17% (N=10) remained neutral. Meanwhile, 53% (N=31)

disagreed, and 12% (N=7) strongly disagreed with the statement. These results indicate that the majority of teachers, 65% (N=38), do not believe that technology can help them better assess and track student progress.

When teachers were asked whether implementing cooperative learning through technology helps students develop writing skills, 10% of teachers (N=6) agreed, and 65% (N=38) agreed with the statement. 24% (N=14) remained neutral. Overall, most teachers acknowledged that using technology to implement cooperative learning helps students improve their writing skills.

According to the results for item 7, 13% (N=8) of teachers strongly agreed, and 60% (N=35) agreed with the statement that they understood cooperative learning well enough to implement it successfully. 20% (N=12) of respondents remained neutral, and only 5% (N=3) disagreed with the statement. The results for this item indicate that the majority of teachers understand cooperative learning well enough to implement it successfully.

The results for item 8 showed that 8% (N=5) strongly agreed and 70% (N=41) agreed that cooperative learning helps meet their institutions' goals. 20% (N=12) remained neutral regarding the statement. Therefore, the majority of teachers, 78% (N=46), acknowledged that cooperative learning can help achieve their institutions' goals.

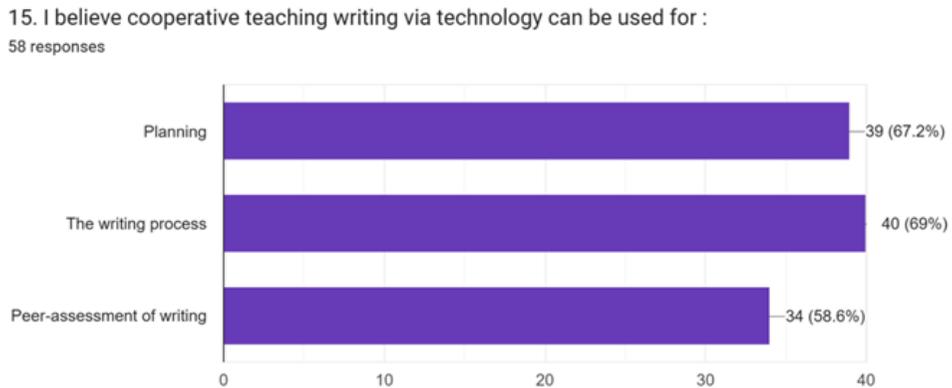
The results for item 9 showed that 5% (N=3) of teachers strongly agreed and 60% (N=33) agreed that students lack the skills necessary for effective cooperative group work. 31% (N=18) of respondents remained neutral, and 7% (N=4) disagreed with the statement. Overall, 65% (N=36) of respondents believe that students lack the skills necessary for effective cooperative group work.

Based on the results for item 10, 9% (N=5) strongly agreed and 43% (N=35) of respondents agreed that cooperative learning involves too much responsibility for students. 32% (N=19) remained neutral, and 15% (N=9) of teachers disagreed with the statement. Therefore, more than half of the respondents, 52% (N=40), believe that cooperative learning involves too much responsibility for students.

The results for item 11 showed that 10% (N=6) of respondents strongly agree, and 74% (N=43) agree that technology can help promote cooperative learning among English language learners. 13% (N=8) held a neutral attitude towards the statement, while 2% (N=1) disagreed. The majority of teachers, 84% (N=48), believe that technology can help promote cooperative learning among English language learners.

Next, teachers were asked whether the cooperative teaching writing strategy via technology can be used for planning, the writing process, or peer assessment of writing. 69% (N=40) of teachers believed it could be used for the writing process, 67.2% (N=39) thought it was useful for planning, and 58% (N=34) considered that teaching cooperative writing via technology

could be useful for peer assessment of writing. The results are displayed in Figure 1.



**Figure 1:** Teachers` beliefs on the uses of cooperative teaching via technology in writing

The respondents were also asked about the amount of workshop training in cooperative learning they received. The majority of teachers, 31% (N=18), stated that they did not receive any training in cooperative learning at all. 13.8% (N=8) of teachers received less than a full day of training, 25.9% (N=15) received between one and two days of training, 8.13% (N=13) received between three and six days, and only 15.5% (N=9) received more than six days of training in cooperative learning. The results are shown in Figure 2.



**Figure 2:** The amount of workshop training that teachers received

Additionally, teachers were asked to select the writing activities they typically use in their classes. 96.6% (N=56) of the teachers reported using formal letters, 91.4% (N=53) used informal letters, 86% (N=50) used emails, 50% (N=29) used paragraphs, 15.5% (N=9) used orders, 13.8% (N=8) used briefings, 86% (N=50) used essays, 60.3% (N=35) used reports, 53.4% (N=31) used CVs and cover letters, and only 1.7% (N=1) used other types of writing.

Finally, teachers were asked to provide final comments and suggestions about implementing cooperative learning through technology. Most teachers expressed positive attitudes toward this issue and emphasized the importance of incorporating cooperative learning via technology in writing classes. They also noted that cooperative learning allows them to work with mixed-ability groups to maximize each member's participation. Although teachers viewed technology integration as supportive in their teaching, humans must remain decision-makers and maintain control over technology. Additionally, some teachers highlighted the need for workshops and training to ensure they have sufficient information about integrating cooperative learning through technology for successful implementation.

## **Discussion**

The purpose of the study was to identify teachers' attitudes toward using cooperative learning through technology in a military setting and to assess their level of readiness before implementing the method. After collecting data from the teachers' questionnaires, the researcher analyzed the statistical data descriptively based on their responses. The quantitative data provided valuable insights into teachers' attitudes toward applying this complex method via technology in the military context. Findings showed that teachers generally hold positive attitudes toward the approach, as most teachers believe it can help military students improve their writing performance. However, teachers also expressed concerns about students lacking necessary skills and the level of accountability this complex method requires from them.

The study results indicate that teachers view writing as more challenging for military students than other language skills because officers from non-native English-speaking countries find it difficult to write in military (Likaj, 2015). Most of these students struggle with organization, grammar, and style. They also must adhere to the Army Standard of Writing, which has its own rules and restrictions (Lythgoe, 2023).

One of the most significant findings of the study is the generally positive attitude among teachers toward using cooperative learning strategies through technology. The majority of teachers acknowledge that technology can promote cooperative learning among English language learners. This

corresponds to Johnson and Johnson (2014), who state that technology enables learners to maximize the benefits of cooperative learning by enhancing student cooperation, communication, peer work, and group work. Teachers believe this strategy can be applied to the writing process, including planning and peer assessment. This also aligns with Johnson and Johnson (2014), who suggest that integrating technology into cooperative learning can help improve students' writing skills by enabling them to work together to produce a single document, which can be viewed and edited in real time by a group of students or peers, with comments added to specific parts or the entire work. Based on these considerations, teachers strongly believe this is an effective strategy that helps them meet the demands of their military educational institutions.

Another key finding of the study is that most teachers feel quite confident in successfully implementing cooperative learning through technology in English language teaching. This aligns with Adams (2023), who admits that teachers with higher self-efficacy tend to have more positive attitudes toward cooperative learning strategies in online education, which significantly contributes to their successful implementation.

Although using technology for cooperative learning is considered a suitable strategy by teachers to improve military students' writing performance, the study's findings revealed teachers' concerns about students lacking the skills needed for effective cooperative group work, which is a key element of cooperative learning. This is consistent with Keramati and Gillies (2022), who admit that students might have insufficient understanding of how to build teamwork, which is one reason students may lose the desire to participate in group work. Moreover, teachers expressed neutral attitudes toward students' willingness to share their writing. This aligns with Herwiana (2021), who admits that smarter students prefer to write alone rather than collaboratively, which could create obstacles for engaging students in cooperative group work.

Additionally, although Johnson and Johnson (2014) claim that integrating technology into cooperative learning may help teachers better assess and track the work of each student, the findings of the study proved the opposite, as most teachers do not support this viewpoint. This may be because 31 % of teachers did not receive any workshop training in cooperative learning at all. This aligns with Murad (2021), who believes that teacher training is crucial as it enables teachers to maximize the benefits of cooperative learning via technology for teaching a language and to create goal-oriented activities to meet students' needs.

According to the findings of the study, teachers consider that cooperative learning assigns too much responsibility to students. This corresponds to Silva et al. (2021), who state that the development of cooperative relationships allows students to take on more responsibility in the

process of learning, and the complexity of the method requires time for effective implementation. Similarly, Mohammad and Mohammad (2018) claim that before applying this complex instructional method, teachers and students should practice cooperative learning several times to ensure successful implementation.

To sum up, teachers' positive attitudes toward the method largely influence its successful implementation. First, self-confidence during the process helps teachers plan writing activities with technology effectively and maximize the benefits of cooperative learning. Second, it is also important to note that teachers with the right knowledge and skills can effectively apply this complex method to design goal-oriented activities based on the characteristics of military writing, while considering their students' interests to meet the needs of their military educational institutions. Nevertheless, students' lack of necessary skills for cooperative group work and the excessive amount of accountability each student bears when participating in cooperative activities through technology may pose challenges for teachers in the implementation process.

### **Conclusions and limitations**

The findings of the study revealed ESP teachers' positive attitudes toward the value of using cooperative teaching methods to help military students improve their writing skills, which are crucial for their future career development. Although cooperative learning places a heavy responsibility on students, the characteristics of the cooperative learning strategy can assist ESP teachers in meeting the needs of military students to improve their writing performance. Additionally, teachers believe that technology can promote cooperative learning among military students. While teachers feel confident in using this method and support its implementation in their writing classes, they remain neutral about whether students have the necessary skills for cooperative group work.

It is also important to note that several obstacles can prevent teachers from effectively integrating technology at military educational institutions. First, teachers may find it challenging to maintain student engagement to ensure successful cooperation, as military students tend to lose interest if the material is not engaging and instructions are unclear. Second, since many military students still face computer illiteracy, using digital tools in the classroom might complicate classroom management. Additionally, lessons could be disrupted by poor internet connectivity.

The study provided valuable insights into using cooperative learning strategies via technology to improve writing skills in a military setting; however, its scope is limited to a specific group and location since most teachers were from military educational institutions in Georgia. Future

research could examine similar patterns in military educational institutions in other NATO member, candidate, and aspirant countries to determine if the findings are applicable more widely. Although quantitative data indicated teachers' positive attitudes, conducting qualitative research on the same topic would offer more detailed and subjective insights.

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# Leveraging Dynamic Capabilities to Overcome Financing Barriers and Drive Sustainability of Solar Social Enterprises in Kenya

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## **Abstract**

This study examined how financing and dynamic capabilities affect the sustainability of solar social enterprises (SSEs) in Nairobi County, Kenya. Against the backdrop of persistent energy access challenges in sub-Saharan Africa, the research aimed to find out how SSEs navigate financing barriers and leverage dynamic capabilities to achieve sustainable growth. Employing a qualitative case study approach, the study draws on in-depth interviews with SSE founders and managers. These were triangulated with business documents and sectoral reports. Key findings reveal that SSEs face significant obstacles in accessing finance, including perceived bias, banks' risk aversion, and rigorous due diligence requirements. These challenges disproportionately affect locally owned enterprises. The study found entrepreneurial alertness, strategic agility, and resource orchestration as the entrepreneurial dynamic capabilities enabling SSEs to mobilize resources and adapt to market shifts. The study concludes that adapting financing models to local contexts and supporting the development of entrepreneurial dynamic capabilities are vital for the long-term growth of SSEs. Interventions fostering inclusive investment and capacity-building are recommended to advance sustainable growth in Kenya's dynamic solar sector.

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**Keywords:** Dynamic capabilities, social enterprises, financing, sustainability, social entrepreneurship, emerging economies

## **Introduction**

Access to affordable and sustainable energy remains a critical challenge for about 600 million people in sub-Saharan Africa, with significant implications for economic development, social equity, and environmental sustainability (ESMAP et al., 2024). In Kenya, about 5 million households still lack access to electricity, mainly in rural and remote areas (Ministry of Energy and Petroleum, 2025). Lack of reliable energy solutions continues to hinder progress toward the United Nations Sustainable Development Goals, particularly those related to poverty reduction, quality education, health, and gender equality. In response to these challenges, SSEs emerged as innovative actors leveraging business acumen and social missions to deliver clean, affordable lighting to underserved communities (McEachran, 2013). These enterprises not only address critical gaps in electricity access but also contribute to inclusive growth, poverty alleviation, and the empowerment of marginalized groups, including women and youth (British Council & Social Enterprise UK, 2022).

The rise of social enterprises in Kenya reflects a broader global trend in which privately owned, mission-driven organizations - spanning for-profit, non-profit, and hybrid models - employ entrepreneurial strategies to achieve social objectives (World Bank, 2017). Social enterprises are increasingly recognized for their capacity to foster innovation, generate employment, and respond nimbly to emerging opportunities, thereby acting as significant drivers of sustainable development (OECD, 2017). In Kenya, social enterprises comprise a diverse ecosystem of micro, small and medium enterprises (MSMEs), cooperatives, and non-governmental organizations, estimated to number approximately 44,000 entities (British Council, 2017). Notably, these organizations are more frequently led by women compared to conventional businesses, underscoring their role in advancing gender inclusivity and social justice (British Council & Social Enterprise UK, 2022; White, 2022).

Despite their promise, SSEs and the broader social entrepreneurship sector in Kenya face formidable challenges that threaten their long-term sustainability and impact. Access to finance remains a pervasive obstacle, with limited capital available for early-stage ventures and insufficient funding for businesses seeking to scale (Intellectap, 2015). The entrepreneurship ecosystem has numerous players but is characterized by gaps in relevance, affordability, and navigability, particularly for enterprises operating outside Nairobi or in specialized sectors such as the green economy (Intellectap, 2019;

Hain & Jurowetzki, 2018). Furthermore, government policies and regulatory frameworks have exerted significant influence on the growth trajectories of SSEs, enabling and constraining their operations.

Against this backdrop, this article examines the interplay between financing, dynamic capabilities, and the performance of SSEs in Kenya. Drawing on recent empirical studies and sectoral analyses, the paper situates SSEs within the evolving entrepreneurship ecosystem, highlighting their contributions, constraints, and adaptive strategies in navigating a complex and often fragmented support environment (Spigel, 2017; Breznit & Taylor, 2014; Arruda et al., 2013). By focusing on the dynamic capabilities that enable SSEs to innovate, access resources, and scale impact, the article aims to provide nuanced insights into the mechanisms through which these enterprises pursue sustainability under institutional uncertainty. Ultimately, the study contributes to the growing body of literature on social entrepreneurship and entrepreneurship ecosystems in Africa. It offers policy and practical recommendations to strengthen SSEs and by extension, inclusive and sustainable growth in Kenya.

## **Literature Review**

### *Entrepreneurship Ecosystem and Social Enterprises*

In the past decade, both academic researchers and policymakers have increasingly focused on the entrepreneurship ecosystem, recognizing its role in fostering improved economic outcomes (Spigel, 2017; Breznit & Taylor, 2014; Arruda et al., 2013). The Global Entrepreneurship Index (GEI), introduced in 2009, provides a comparative assessment of entrepreneurship ecosystems across 137 countries by evaluating entrepreneurial attitudes, abilities, and aspirations, with data available through 2020 (Acs et al., 2019; Acs et al., 2021). The GEI consistently ranks countries in North America, Europe, and Australia among the top ten globally. In the 2019 GEI report, South Africa emerged as the leading nation in sub-Saharan Africa, positioned 52nd worldwide, followed by Botswana at 66th and Kenya at 86th (Acs et al., 2021). Nonetheless, critiques have emerged regarding the GEI's applicability to developing economies, arguing that its foundational pillars are derived from data more accessible in developed contexts, which may not be available or sufficiently comprehensive in many developing countries (Ullah, 2019).

Kyalo et al. (2023) indicate that Kenya's entrepreneurship ecosystem comprises more than 176 organizations, with 92 offering financial support and 166 providing a range of other support services. Notably, approximately 86% of small and medium-sized enterprises (SMEs) operating within the green economy are headquartered in Nairobi, enabling them to access critical business services and establish connections with advisors, investors, and partners (Kyalo et al., 2023). The multifaceted nature of the entrepreneurship

ecosystem in Nairobi has been the subject of several studies, which have explored domains such as technology-focused start-ups, the ICT sector, and social enterprises (Bramann, 2017; Chaux & Okune, 2017; Intellectap, 2015; Park et al., 2017; World Bank, 2017). Notably, Park et al. (2017) employed network analysis to examine the ecosystem supporting technology start-ups in Nairobi, identifying key shortcomings in areas such as regulatory frameworks and access to finance. Challenges observed in the entrepreneurship ecosystem include assistance going to the same set of enterprises and businesses and receiving the same services regardless of their needs or sector (Hain & Jurowetzki, 2018). In addition, Intellectap (2015) found four gaps: limited capital available for early-stage businesses, insufficient capital for businesses in the growth phase, business support services that are either irrelevant or not affordable, and an entrepreneurship ecosystem that is difficult for entrepreneurs to navigate.

Social enterprises (SEs) have been defined in various ways, reflecting their diverse forms and functions. The World Bank (2017) characterizes SEs as privately owned organizations - whether for-profit, non-profit, or hybrid entities - that employ business strategies to pursue social objectives. Historically, some of the earliest social enterprises in Africa and Asia emerged as faith-based institutions, which delivered affordable healthcare and education during the colonial period. Subsequent developments saw the rise of cooperatives, particularly within the agricultural sector (World Bank, 2017). Recent estimates suggest that approximately 11 million businesses worldwide may be classified as social enterprises (British Council & Social Enterprise UK, 2022). Social enterprises actively support marginalized populations, including disadvantaged groups, minorities, youth, women, and environmental initiatives, thus contributing to broader social and economic development.

Solar social enterprises sell solar home systems to rural, peri-urban and off-grid communities. These businesses use a blend of social mission and business savvy to serve the low-income population. This hybrid nature also makes the business model of SSEs potentially unstable (Sottini et al., 2020). These enterprises provide clean and affordable lighting and other benefits to people who are mostly poor and vulnerable. They deliver best-fit technology, market establishment, growth strategies and business models in the local context, but also face key challenges related to access to finance, policy and support services (Miller Center, 2017). However, social enterprises face significant challenges that affect their sustainability (Sottini et al., 2020).

Solar home systems are identified as the most cost-effective solution to reach people located far away from the grid or in remote and sparsely populated areas, many of whom fall in the low-income bracket (Phillips et al., 2020). According to Ileri and Shirley (2021), \$6.5 billion is required for such

people in SSA to access electricity by 2030. For this to be achieved, donor agencies need to provide the early-stage funding that attracts other private players to make investments. Additionally, SEs usually go through several phases as they evolve, the main ones being start-up and growth. It is at the growth phase that SEs need more funding from philanthropists, foundations, governments and impact investors for their capital needs and for sustainability to be realised (Busch & Barkema, 2019).

### *Dynamic Capabilities and Sustainability of Social Enterprises*

The problem of access to finance is prevalent in Kenya. A countrywide survey by the Kenya National Bureau of Statistics found that up to 29.6% of entrepreneurs close their businesses due to a lack of operating funds (KNBS, 2017). This stems from increased operating expenses, declining income, business losses and diversion of returns and operating capital to other uses. For SSEs that use the PAYG business model, taxes increase the need for working capital. For solar systems sold with a repayment plan spread over many months, the provider incurs the full cost of providing the system upfront but can only recover the revenue associated with that asset over time, meaning that they must cover this delay in cash flow through working capital loans. This need is increased where taxes are paid at the point of importation but only gradually recovered from the end-users (ACE TAF, 2021, p. 14).

Teece et al. (1997) conceptualize dynamic capabilities as an organization's capacity to integrate, build, and reconfigure both internal and external competencies in response to rapidly changing environments. This perspective is rooted in the resource-based view of the firm. Teece (2007) later elaborated this framework, characterizing dynamic capabilities as comprising three core activities: sensing, seizing, and transforming. Sensing involves identifying and generating new opportunities, seizing refers to capitalizing on these opportunities through the development of products, processes, or services, and transforming entails the ongoing realignment of the organization's tangible and intangible assets to maintain relevance and competitiveness.

Empirical studies have established a strong association between dynamic capabilities, competitive advantage and performance of multinational enterprises (Luo, 2009; Riviere et al., 2020; Teece, 2014), as well as small and medium-sized enterprises (Dejardin et al., 2022; Fabrizio et al., 2021; Hernández-Linares et al., 2020; Rashid & Ratten, 2021). Regarding social enterprises, Bhardwaj and Srivastava (2021) identified specific dynamic capabilities that support their growth and long-term sustainability. Furthermore, in the context of entrepreneurship ecosystems, Roundy and Fayard (2018) applied the dynamic capabilities framework to develop a

theoretical model that explains the mechanisms through which entrepreneurship ecosystems impact entrepreneurial processes.

### *Theoretical Integration*

Bhardwaj and Srivastava (2021) used the meta-synthesis approach to identify the dynamic capabilities that enable SEs to achieve continuous growth and attain financial sustainability. The study found bricolage, alliance building, government support, effectuation, and learning capability as some of the dynamic capabilities that drive the achievement of their social and financial mission. Moreover, Roundy and Fayard (2018), used the dynamic capabilities theory to identify the entrepreneurship ecosystem forces that influence entrepreneurship. First, an enterprise's sensing capabilities are influenced through searching and learning. This is achieved through activities such as observing best practices, joining professional associations, and gathering economic information on environments and operations. Second, an enterprise's sensing capabilities are influenced by support services and access to finance. Access to a pool of financiers and support services increases the ability of an enterprise to seize identified opportunities. Third, in thriving entrepreneurship ecosystems, there is timely market information, which improves an enterprise's ability to perceive the need to transform its business model, resources, routines and products, as the external environment changes. The theoretical approach espoused by Roundy and Fayard (2018) is used for this study.

The entrepreneurship ecosystem in Kenya has many actors, yet SEs in the country continue to face significant challenges. Moreover, studies on the entrepreneurship ecosystem in Kenya have mostly focused on the geographical location (Park et al., 2017). Other studies have also noted the scarcity of research on social enterprises and the entrepreneurship ecosystem in Kenya (Alvaden & Boschma, 2017; Littlewood & Khan, 2018; Sottini et al., 2020; Wurth et al., 2021). This study fills a contextual gap by expanding the understanding of how the financing domain of the entrepreneurship ecosystem and dynamic capabilities affect the sustainability of SSEs in Nairobi County, Kenya.

### **Methodology**

A qualitative case study was conducted to examine how financing and dynamic capabilities affect the long-term growth of SSEs in Nairobi County, Kenya. Using a case study helped to 'unpack the complex and institutional factors embedded in African entrepreneurship' (Mafimisebi & Asiamah, 2021). The research took place in Nairobi due to several factors. Firstly, Nairobi is the birthplace of the innovative PAYG business model used by many SSEs, which has now been scaled to other parts of the world, but there

is a lacuna on what makes this business model successful in some places and not in others (Adwek et al, 2019; Park, 2021). Secondly, Nairobi is regarded as having favorable economic policies and an established start-up ecosystem, earning the moniker *Silicon Savannah* (Chirchietti, 2017). Kenya is also identified as one of the biggest markets for solar in Africa (Cross & Murray, 2016). Thirdly, most SSEs in Kenya have their head office in Nairobi with branches in other parts of the country. The SSEs use Nairobi as a vantage point to access the resources in the entrepreneurship ecosystem (Asoko, 2020). Obtaining a better understanding of how SSEs identify and utilize financing for long-term growth is important for entrepreneurs, investors, support services providers and policy makers.

The grounded theory approach was used, given limited theory development on entrepreneurship in Africa and calls for research on entrepreneurship theories in context (Bruton et al., 2018; Shephard et al., 2020). The sample size was determined by theoretical sampling. Data was collected from SSE founders and managers using a semi-structured interview guide until saturation was reached at 20 interviews. Data from the interviews was triangulated with reports from company websites, news articles and industry reports.

### *Data analysis*

The data collected was analyzed using the Gioia methodology, which is suitable for inductive theory building and a narrative approach (Gioia et al., 2013). The structured approach to qualitative data analysis outlined by Gioia et al. (2013) was employed. Initially, first-order categories were developed based on information gathered from interview participants. During this stage, the collected data were annotated, and preliminary labels were assigned to transcribed interview material (Corbin & Strauss, 2015). Concurrently, data from annual reports and websites were used to corroborate findings from the interview data. Over time, these preliminary labels were consolidated into first-order categories.

In the second step, second-order themes were developed based on theory and through an iterative process comparing the first-order categories with relevant literature. The first-order categories were grouped and consolidated into second-order themes. This process included a systematic comparison of emerging constructs with existing concepts in the literature, with labels adjusted as needed. Ultimately, these labels were merged into second-order themes (Gioia et al., 2013; Strauss & Corbin, 1998). For instance, codes such as ‘funding generally available’ ‘unfavourable financing options’ ‘perceived bias towards certain enterprises’ ‘banks are averse’ and ‘rigorous requirements’ were combined under ‘difficulties accessing financing.’ In the third step, connecting the second-order themes provided an

overall framework derived from the data. For example, themes like ‘networking’ and ‘diversification’ were consolidated into ‘entrepreneurial alertness.’

### *Trustworthiness*

Trustworthiness in this study was systematically achieved through a combination of pre-testing, validity, reliability, and reflexivity. First, the research instrument-the semi-structured interview guide – was pre-tested. Two managers from separate SSEs, participated in pilot interviews. Their feedback was instrumental in refining the interview questions, ensuring clarity, and highlighting any gaps that could reveal critical insights relevant to the research topic. This process also strengthened the dependability of the instrument.

To enhance validity, the study employed triangulation by collecting data from multiple sources: in-depth interviews with SSE managers, analysis of business documents such as annual reports, and review of publicly available information, including news articles and websites. This triangulation ensured a more comprehensive understanding of the entrepreneurship ecosystem and allowed for meaningful and credible inferences to be drawn from the data. A detailed audit trail was maintained, documenting each step from data collection to analysis, further supporting the transparency and traceability of the findings.

Reliability was reinforced through several measures. The pre-tested interview guide promoted consistency in data collection, while meticulous transcript review during data cleaning minimized transcription errors. During the coding phase, particular attention was paid to maintaining consistent definitions for codes, with cross-checks conducted by another researcher to ensure agreement and prevent coding drift. The use of NVivo software facilitated uniform coding practices and enabled systematic data management throughout the analysis process.

Reflexivity played a crucial role in safeguarding objectivity and minimizing bias. The researcher consciously reflected on personal, cultural, and theoretical assumptions that could influence data interpretation. Reflexivity was particularly important when engaging with SSE managers of diverse backgrounds, enabling the researcher to remain sensitive to different perspectives and experiences. Overall, these strategies collectively ensured that the study’s findings were trustworthy, credible, and firmly grounded in the data collected.

## **Findings**

### ***Financing barriers***

Access to financing for social enterprises (SEs) remains a subject of considerable debate within Kenya, across Africa, and in broader international

discourse. To better understand the financing landscape, the study explored how SSE managers perceive the availability and accessibility of funding within Nairobi's entrepreneurial ecosystem. Among those interviewed, four founders expressed the view that financing opportunities were present, though not without certain obstacles. For instance, Founder (E11) explained, "Nairobi's financing landscape is better than most of Africa, but it is still hard to access anything more than seed capital." Founder (E13) further noted that, "There are more opportunities available today than ten years ago."

In addition, Founder (E4) highlighted the favorable funding environment for SHS companies in earlier years, remarking that, "The period between 2010–2017 was good for companies selling SHS. During this period, proof of concept funding was easily available from incubators and international donors. The global market had green funds for on-lending to the solar sector. The monies were usually channeled through banks and microfinance institutions" (August 21, 2024).

Together, these perspectives illustrate that while Nairobi offers relatively more financing options compared to other regions, SSEs continue to face significant challenges, particularly in securing capital beyond the seed stage. The evolution of the funding landscape - marked by periods of increased availability and targeted support for sectors such as renewable energy - has shaped the experiences and strategies of SSE founders operating in the city. Other managers had different opinions.

Twelve SSE managers described significant obstacles in accessing financiers or obtaining favorable financing terms. One founder (E2) remarked, "Accessing capital in Kenya is difficult. We do not know what opportunities are there or who to approach." This sentiment was echoed by another founder (E11), who stated, "Access to finance and the players is always difficult." Manager (E7) further substantiated these difficulties, noting, "Accessing financiers is a challenge due to the rigorous due diligence processes." Manager (E8) added that, "Approaching financiers can be somewhat difficult or problematic given that the market competition is rather stiff, coupled with requirements from most investors that are very demanding."

Concerns regarding nationality emerged as a recurrent theme. Founder (E12) observed, "It is hard to secure funding from outside Kenya if you do not have a co-founder from Europe or USA." This perspective was expanded upon by the founder (E13), who explained,

"It is easier for graduates from Western countries to attract funding than local founders. The process is complicated. Impact funders have a checklist – they ask for a pitch deck, financials that are presented in a specific way, and take a keen look at the management structure. That is the standard in the west where most impact investors come from. In fact, founders

from the West tick all the boxes on that checklist. However, for local founders, if you don't tick the first box, you are done. We need to be aware, learn and adapt (September 4, 2024).

The perception of difficulties in accessing financing mainly came from local founders and managers. In addition, most large SSEs that have foreign founders raise capital from international investors, who may or may not have offices in Nairobi. Managers also shared experiences with banks and venture capitalists.

### *Banks*

Managers further identified specific categories of financiers when discussing the landscape of funding for social enterprises in Nairobi. As Manager (E10) explained, "Accessing financing from banks is difficult because they prefer to lend to the government. Credit for small and medium enterprises in Kenya is expensive." This sentiment was echoed by Manager (E16), who noted, "the main challenge is high interest rates of above 15% on loans provided by banks." Similarly, Manager (E15) highlighted, "Conventional financial players like banks approach solar companies as inherently risky and hence numerous credit checks and expensive interest rates." The perspective of Manager (E6) reinforced this view: "Banks and microfinance institutions are a good source of scalable credit, though their criteria appear to be very selective."

Taken together, these findings indicate that banks and microfinance institutions remain the predominant sources of capital for enterprises across different sizes and industries in Kenya. Nonetheless, the accounts of managers reveal a consistent set of obstacles-namely elevated interest rates, stringent and selective lending criteria, as well as bureaucratic hurdles-that significantly impede access to financing. Beyond these institutional challenges, managers also highlighted notable difficulties in securing investment from venture capital firms. These insights underscore the persistent and multifaceted barriers within Kenya's financial ecosystem, which continue to constrain the growth and long-term sustainability of social enterprises.

### *Venture Capital*

Challenges in accessing venture capital were highlighted by several SSE founders and managers in Nairobi. Manager (E15) commented on the expectations set by venture capital firms, observing that, "Venture capitalists have high expectations for rapid growth and significant equity stakes which can be detrimental to long-term business control." The challenges have been compounded in recent years, as the manager (E19) explained, raising funds for business expansion has become increasingly difficult. Drawing on both investor conversations and direct experience, the manager (E19) reported that

funding rounds are taking considerably longer to complete than in the pre-pandemic period, with investors demonstrating greater reluctance to commit capital.

The preceding paragraphs reveal that managers and founders encountered complex barriers to accessing finance, with nationality emerging as a significant factor influencing investor confidence and funding opportunities. Respondents noted that investors-especially those from venture capital and impact funding circles-often favored enterprises led by founders from Europe or the USA and recognized qualifications from Western universities over those from local Kenyan institutions. These nationality-based advantages, in turn, shaped how local founders approached fundraising, prompting them to prioritize strategies such as cultivating warm introductions to international investors or acquiring accelerator credentials to bolster credibility. Additionally, these responses highlight that the broader funding landscape is characterized by rigorous due diligence, selective lending criteria, and high expectations from financiers, which collectively reinforce the need for local entrepreneurs to adapt their fundraising tactics to overcome both institutional and perceptual biases. Other responses focused on contextual factors.

### *Contextual factors*

Manager (E14) emphasized that access to financing is often contingent upon both the development stage of the enterprise and the stipulations set by financiers. Specifically, early-stage startups frequently encounter difficulties in securing loans from traditional banks due to rigorous collateral requirements. Complementing this view, Manager (E15) highlighted a pronounced scarcity of financial institutions possessing in-depth sectoral knowledge-particularly within the solar industry-which further complicates the process for social enterprises seeking growth capital. These perspectives collectively suggest that founders and managers of SSEs in Nairobi perceive notable biases and face significant obstacles in navigating the broader financing ecosystem. Against this backdrop, the current study explored how SSEs leverage dynamic capabilities to adapt and secure resources, despite the persistent barriers within the funding landscape.

### ***Deployment of Dynamic Capabilities***

Financing is critical for SSEs because they purchase inventory in advance and sell it through credit using the PAYG model. This means SSEs need much more working capital compared to businesses that sell products for cash. The financing frictions above, therefore, constrain inventory and ultimately affect the long-term growth of SSEs. Dynamic capabilities enable

SSEs to sense, seize and transform resources from financiers despite the challenges.

### *Networking*

In examining how SSE managers identify and pursue financing opportunities within Kenya's entrepreneurial ecosystem, a recurrent theme emerged around the strategic deployment of networks. These networks, encompassing those that facilitate information sharing, grant access to potential financiers, and support execution through partnerships, are instrumental in navigating financial constraints. As the Manager (E6) articulated, "Social capital comes in with money but also advice that helps in setting out strategies that support sustainability goals." Similarly, Founder (E11) emphasized, "Networking plays a big role. I research impact capital firms, their interests, and location. I then develop a plan on how to access them, either during events or through introduction by people who already know them." Such insights illustrate the deliberate efforts by SSE leaders to cultivate relationships that enhance credibility and open doors to capital, often by leveraging industry events or warm introductions.

Early engagement with financiers was also highlighted as a critical tactic, as Founder (E1) explained, "We build early relationships with financiers." Existing industry relationships provide further leverage, with Manager (E9) noting, "We leverage our existing relationships in the industry." The value of prior experience and robust connections was underscored by Manager (E8): "Prior successful experience and good connections go a long way in making the process easier." Founder (E12) further reflected on the importance of a strategic approach:

You need to be very strategic when fundraising by getting into a lot of local and international networks. For me I attend events where I can access financiers such as Sankalp. I also receive financing information from incubators (August 26, 2024).

Support organizations play a pivotal role in disseminating information about funding opportunities. According to Manager (E8), "We identify financing opportunities through market research, networking and updates from incubators." Founder (E1) similarly pointed to the utility of specialized organizations:

Organizations such as the Global Collective Distributors, Miller Center for Social Enterprises and the Global Off-Grid Lighting Association (GOGLA) have databases with funding opportunities which we look at from time to time. Approaching the financiers is usually the challenge because cold calling does not work. When you are introduced, it is easier (April 8, 2024).

Beyond informational networks, some managers described orchestrating partnerships to enhance access to capital and markets. As the Manager (E15) stated, “We focus more on private sector partnerships and international grants.” Founder (E2) added, “We have partnered with donors operating in the country to expand to the counties that they prioritize.” Manager (E8) also noted, “We also partner with local companies that have existing distribution networks in areas that we want to reach.” Nevertheless, the efficacy of networking is not guaranteed; as Manager E12 reflected, “You can spend a lot of time networking and have nothing to show for it even after two years.”

A total of ten SSE founders and managers acknowledged the essential role of networking, partnerships, and relationship-building in identifying potential funders, though one manager pointed to the limitations that arise when there is a misalignment between business needs and investor interests. The findings suggest that even with robust engagement in networks, SSEs must be strategic to maximize outcomes.

The various forms of networks identified-information networks (such as mailing lists, incubator newsletters, and membership databases), access networks (facilitating introductions and relationship-building), and partnership networks (enabling resource-sharing and market entry)-collectively serve as mechanisms for sensing and seizing financial opportunities. These approaches are central to securing the working capital necessary for SSEs to advance sustainability objectives. Notably, respondents emphasized the importance of agility and adaptability in seizing identified opportunities, underscoring the dynamic and strategic nature of resource mobilization within the SE sector.

### *Agility*

When examining how SSE managers capitalize on identified opportunities, several strategies emerged centered around operational enhancements, investor readiness, and the demonstration of organizational impact. Managers reported that these efforts enabled them to apply for and secure financial resources from a variety of sources, including banks, microfinance institutions, accelerators, impact funds, and venture capitalists. With respect to investor readiness, manager (E6) highlighted that this involves “continuous improvement of our business model, investing in new technologies, and building a strong track record of financial performance.” Echoing this, manager (E7) emphasized the importance of “preparing comprehensive business plans, financial projections and pitch decks.” Similarly, manager (E9) noted the value of preparing “financial models, present[ing] robust business cases and demonstrat[ing] impact,” while manager (E10) underscored the need to “demonstrate our previous

achievements and promising future.” Manager (E14) further elaborated that preparation includes compiling “comprehensive business plans, financial statements and projections,” and building “a strong portfolio that highlights the unique value proposition of our solar solutions.” Collectively, these perspectives suggest that investor readiness is multifaceted and demands agility, as SSEs must align with the varying expectations and requirements of diverse investors.

Beyond investor-facing activities, operational improvements were also identified as critical for seizing opportunities. Founder (E12) observed that, “When we get funding, we allocate some of it to improve our networks, contacts and pay for events etc.” Manager (E14) described their approach as “optimizing our operational processes and investing in capacity-building initiatives.” Manager (E16) added that regular “review[s] of risks and costs” are essential to ensure organizational efficiency and the capacity to “swiftly capitalize on exciting opportunities as they arise.” In addition, two respondents highlighted the strategic acquisition of expertise to enhance organizational capacity. Manager (E17) reported, “Hiring consultants to support in financial modelling,” while founder (E13) shared that they “participated in specific accelerator programs to improve their investor readiness.” Such operational improvements and investments in capacity building provide a foundation for enhanced efficiency and long-term adaptability, with capacity building reflecting a proactive-rather than reactive-form of agility.

A further dimension of agility relates to organizational structure. Manager (E8) described the benefit of maintaining “organization structures that are fluid so that we can easily adapt to the available opportunities.” In a similar vein, manager (E9) discussed the practice of “continually reviewing our business strategy in light of changing market conditions and financing opportunities.” Manager (E17) elaborated on the importance of monitoring the external environment by stating, “we stay ahead of the competition by monitoring market trends and piloting new products that meet the needs of our customers. Successful pilots result in realignment of our business strategy and create new fundraising opportunities.”

Despite these adaptive strategies, some managers pointed to significant challenges. Manager (E15) explained, “The reconfiguration and deployment of resources is hampered by rigid organizational structures and lack of strategic flexibility. Redeployment efforts are often undermined by insufficient financial reserves and limited access to external funding.” Manager (E12) echoed these barriers, noting, “It is expensive to mobilize resources to pursue financing opportunities; it can take even three to five years.”

The preceding responses illustrate that the nature of organizational structures-whether fluid or rigid-significantly influences agility, with flexible

structures being conducive to growth and adaptation, while rigid ones may lead to stagnation and reduced competitiveness, particularly in the rapidly evolving solar sector. Overall, agility emerges as a critical dynamic capability, conferring clear advantages for SSEs that successfully implement it. Nevertheless, as manager (E12) observed, limited financial resources may restrict the extent to which enterprises can exercise agility. A key driver for this necessity is the ongoing requirement for consumer finance, underscoring the importance of adaptive capabilities for sustained organizational success.

#### *Evolving consumer finance*

The mobilization of resources and the provision of consumer finance emerged as significant themes in the responses of nine participants. As Founder (E11) noted, “SSEs typically do retail business and provide consumer financing because they serve low-income households who can only afford products when they are sold through a lending model like PAYG.” The integration of consumer financing has been foundational to the PAYG business model adopted by many SSEs. Expanding on this, Founder (E3) explained,

“The cost of distribution in the PAYG business model is high, making the business capital intensive while it has low profit margins. That is why the first-generation SSEs (those that were set up by 2014) received a lot of patient capital but are yet to prove they are commercially sustainable despite raising nine figure amounts in funding. This is partly attributed to governance challenges. Most boards did not understand the long repayment periods for SHS and impact on the enterprise’s cashflow. They just encouraged more sales leading to high default rates.” (June 21, 2024).

The initial achievements of SSEs are largely attributed to their innovative approaches in addressing affordability barriers. Early SSEs undertook detailed analyses of the paraffin purchasing patterns among their target customers to determine optimal payment intervals-such as daily or weekly-for SHS. They further leveraged emerging technologies, including mobile phone networks and mobile money platforms, to facilitate incremental payments for SHS, thereby enabling low-income households to overcome the prohibitive upfront costs that previously hindered adoption. The PAYG consumer finance model not only accelerated the expansion of electricity access in rural and remote areas but also attracted significant investment in SSEs, especially between 2010 and 2018.

However, after 2019, there was a noticeable decline in the share of financing directed toward SSEs. At the height of PAYG-driven energy access initiatives, there was optimism that sub-Saharan Africa could achieve universal electricity coverage sooner. This optimism led SSEs to prioritize

scaling sales, often at the expense of assessing customers' ability to pay. Consequently, operational costs associated with distribution, logistics, and after-sales service increased, while default rates rose as some households struggled with repayments. As a result, the complexities of scaling the PAYG model became apparent, and investor confidence in SSEs began to wane. Despite these challenges, the need for consumer finance within SSEs remained strong, prompting organizations to explore alternative financing mechanisms. As founder (E11) observed,

“Private equity for SSEs started to dry up in 2016 after Mobisol declared bankruptcy bringing into focus the commercial sustainability of the PAYG business model. Consequently, the first-generation SSEs found a new way of raising consumer financing – securitization, to keep their businesses afloat.”  
(June 24, 2024)

According to Power Africa (2023), securitization refers to “The process of pooling contractual debt such as consumer loans and selling their related cash flows to third party investors as securities, which may be in the form of bonds or other instruments.” While securitization has long been a feature of the U.S. housing market since the 1960s, its application in the PAYG sector is relatively recent, first appearing in 2015 when Bboxx secured \$500,000 from Oikocredit (Clover, 2016). Other SSEs, such as d.light and Sunking, have also accessed financing through securitization. Notably, only first-generation SSEs have leveraged this approach to raise consumer finance. Simultaneously, consumer finance mechanisms have evolved in tandem with the diversification of solar products available in the market. This evolution has been driven by the necessity for SSEs to broaden their product portfolios in response to a contracting SHS market.

### *Diversification*

In examining how SSE managers approached the transformation, reconfiguration, and redeployment of resources to capitalize on future financing opportunities, a clear emphasis on experimentation and diversification emerged. Founders highlighted the underlying factors driving this shift. For example, Founder (E11) noted, “By 2020 the number of SSEs operating in Kenya was more than the addressable market. As a result, several enterprises exited the country, others were acquired and others closed.” Founder (E12) pointed to macroeconomic pressures, stating, “The Covid-19 pandemic, price hikes, inflation and instability of the Kenya currency have contributed to the reduction of SSEs in the country.” An analysis of the sector in Kenya further illustrates these trends: Mwezi and Pawame were acquired by Ignite Solar in 2023, Mobisol was acquired by Engie in 2019, and Sun

Transfer ceased operations. Founder (E3) provided additional context, explaining that,

“First-generation SSEs initially benefited from substantial concessional and commercial financing between 2010 and 2015, as off-grid energy access was prioritized by international development agencies. However, the landscape shifted as private equity investment declined after 2017, a trend partly attributed to Mobisol’s bankruptcy in 2015, which unsettled investors. The Covid-19 pandemic further redirected investor attention toward products with greater potential for carbon emissions reduction, such as electric motorcycles and electric vehicles” (June 21, 2024).

Larger SSEs-with staff numbers exceeding 200 and annual sales above Ksh 20 million-were particularly engaged in experimentation and diversification, responding to evolving market dynamics and broader ecosystem challenges. As manager (E9) observed, ‘We continually review our business strategy in light of changing market conditions and financing opportunities.’ Media analyses (from sources E17, E18, and E19) corroborate that these organizations expanded beyond solar home systems (SHS) to offer an array of new products and services. These included additional solar-powered items like televisions and water pumps, the provision of cash loans to existing customers, and the sale of smartphones and motorcycles via buy-now-pay-later lending models. By contrast, smaller SSEs have only recently begun to diversify, constrained by limited financial resources. Collectively, these findings indicate that diversification has become both a survival mechanism and a growth strategy, predominantly pursued by first-generation SSEs with robust financial and operational foundations.

### *Sustainability Outcomes*

Solar social enterprises highlighted five sustainability outcomes resulting from access to financing. Six managers reported increased sales, attributing growth to enhanced inventory and expanded marketing efforts. Manager (E18) emphasized, “The funds were used to purchase new inventory including SHS and essential appliances such as fridges and phones.” Manager (E14) reinforced this, stating, “By providing the capital needed for marketing and sales expansion, financiers have enabled us to reach a broader customer base and increase revenue.”

Financing also broadened reach to vulnerable populations; ten managers noted expanded access to underserved groups. As manager (E18) observed, “After raising a round of funding in 2022, 80% of the people we sold solar products to were in rural areas and majority were using torches, wood or kerosene, as their main source of lighting.” Similarly, manager (E20)

noted, “Our first local currency loan from a bank and guaranteed by an impact fund enabled us to bring low cost and safe energy to communities in remote parts of Kenya, working through the KOSAP program.” However, some concerns remain, with manager (E15) cautioning, “Financiers often prioritize profitable ventures over socially impactful ones, limiting outreach to vulnerable populations.”

Job creation was another prominent outcome, with eight managers citing expanded teams due to funding. Founder (E5) remarked, “Support from our investors has allowed us to expand our operations, leading to the creation of new jobs.”

Geographic expansion was facilitated by external capital, with eleven managers reporting entry into new regions in the country. Manager (E14) stated, “Investment from venture capitalists and impact investors has supported our entry into new geographic markets, allowing us to serve a wider market.” Nonetheless, some managers, like (E15), reported that “Geographic expansion has been hampered by inadequate funding and support.”

During the Covid-19 pandemic, eight SSEs received critical financial support, including grants and emergency funding. As founder (E1) shared, “We received grant and debt from international investors, without the funding our business would have been seriously affected.” This support was essential for operational continuity and adaptation during the crisis.

Access to financing enabled SSEs to increase sales, reach underserved rural populations, and create new jobs. External capital also facilitated geographic expansion, though some organizations faced funding-related challenges. Financial support during the Covid-19 pandemic was crucial for maintaining operations. However, concerns remain that financiers may prioritize profitability over social impact, limiting outreach to vulnerable groups.

## **Discussion**

The challenges associated with accessing financing, that is, perceived bias, banks’ aversion to lending to small businesses and rigorous requirements, affect the growth and sustainability of smaller enterprises that are mostly locally owned. Perceived bias, as described by SSE manager,s is a persistent challenge. Village Capital (2017) found that 90% of the investments in East Africa between 2015 and 2016 went to a small group of foreign-owned enterprises. This phenomenon has been discussed by other authors (Hain & Jurowetzki, 2018; Mungai & Peacock, 2019; Sanyal et al, 2020). Moreover, limited financing has been shown to constrain the growth and long-term survival of SEs (British Council, 2017; KNBS, 2017). Hain and Jurowetzki (2018), reveal that funding flow into Africa evolved from aid to foreign direct

investment and more recent venture capital. This evolution contributed to the ability of large SSEs to attract huge amounts of patient capital.

Banks' aversion to lending to smaller enterprises is not new. According to Manwari et al (2017), one of the widely documented challenges that businesses like SSEs face in accessing finance are being perceived as high-risk customers by banks. In fact, Bhamidipati et al., (2021) found that only three out of 15 Kenyan solar entrepreneurs they interviewed in Nairobi had accessed financing from banks or impact investors.

On rigorous due diligence, Hellqvist and Heubaum (2024) argue that the stringent requirements are in part due to the globalisation of renewable energy in Kenya. While the PAYG model attracted international funding which was instrumental in accelerating energy access, it was not adapted for local conditions. Therefore, adapting the current financing model to account for the nature of smaller locally owned enterprises could make a difference.

### *Practical Implications*

Bhardwaj and Srivastava (2021), in a meta-synthesis of the dynamic capabilities that enable SEs to achieve growth, found that networking enabled SEs to mobilize resources and overcome institutional constraints. However, Sanyal et al. (2020) observed that impact fund managers were mainly from western countries with limited knowledge of African markets and hence invested in entrepreneurs from their own social or business networks. This practice perpetuates perceived bias and, at the same time, isolates locally owned SSEs. Impact fund managers could employ Kenyans with knowledge of the local entrepreneurship dynamics to bridge knowledge gaps and level the playing field for locally owned SEEs. Networking and monitoring opportunities as described by the SSE managers, demonstrate entrepreneurial alertness (Tang et al., 2012).

Responses of SSE managers showed there was a difference between seizing agility and transforming agility. Seizing agility was required to take advantage of short-term opportunities like funding windows, while transforming agility was essential for long-term adaptability. The goal of seizing agility was to capture immediate gains from ecosystem opportunities while transforming agility sought to achieve sustainable growth and resilience. This underscores the need for seizing and transforming agility if SSEs are to achieve sustainability in dynamic solar markets. Seizing and transforming agility combined becomes strategic agility. Doz and Kosonen (2010) expanded the work on dynamic capabilities by Teece (2007) and identified strategic agility as one of the three meta-capabilities necessary for transformational change in enterprises.

Consumer finance lies in the broader area of resource orchestration. The PAYG business model relies heavily on capital to buy the solar products

that are paid for over several months by consumers (Adwek et al., 2019). Previous studies also found that resource constraints were more pronounced for smaller and locally founded SSEs (Busch & Barkema, 2019; Sanyal et al., 2016). In such resource-constrained settings, resource orchestration becomes paramount.

Diversification and experimentation are some of the strategies SE used to remain relevant even in adverse situations (Littlewood & Holt, 2017). The portfolio health of SSEs has been declining. According to ESMAP et al. (2024) the mean collection rate of SSEs dropped from 67% in 2019 to 62% in 2021. During the same period, the write-off ratio increased from 11% to 20%. This signals an increase in the number of customers who lost access to SHS due to defaults. According to one of the founders, the Covid-19 pandemic, prolonged drought and inflation affected customers' ability to make regular payments. Diversifying products to serve new market segments can help reduce the impact of write-offs on the overall growth of SSEs. Diversification reflects entrepreneurial alertness, as entrepreneurs actively scan for new opportunities.

### *Theoretical Implications*

The study extends the dynamic capabilities theory by Teece (2007) by showing how these capabilities are deployed by SEs in emerging economies characterized by constrained ecosystems. From the study, SEs need to balance social impact with financial performance hence the more nuanced application of dynamic capabilities leading to entrepreneurial dynamic capabilities. These are entrepreneurial alertness, resource orchestration, and strategic agility.

### **Conclusion**

This study highlights the persistent challenges that locally owned small solar enterprises (SSEs) face in accessing financing, including perceived bias, banks' risk aversion, and stringent due diligence requirements. These barriers not only constrain growth but also perpetuate inequalities in the distribution of capital, favoring foreign-owned and larger enterprises. The evolution of funding in Africa, while increasing overall investment, has not sufficiently addressed the unique needs of smaller, locally owned SSEs. The findings underscore the importance of adapting financing models to local contexts to foster equitable growth and sustainability. Furthermore, the declining portfolio health of SSEs, exacerbated by external shocks like economic instability, highlights the necessity for diversification and ongoing experimentation. Strategic agility, encompassing both seizing immediate opportunities and transforming long-term resilience, is essential for sustainable enterprise growth. The analysis of managerial responses reveals that the development of entrepreneurial dynamic capabilities—specifically entrepreneurial alertness,

resource orchestration, and strategic agility-is critical for SSEs to navigate complex entrepreneurial ecosystems. Furthermore, the study demonstrates that the effective deployment of entrepreneurial dynamic capabilities can facilitate positive outcomes, not only for the enterprises themselves but also for the broader communities they serve. Policy interventions and funding mechanisms that recognize and support these capabilities are vital for the sustained impact and scalability of locally owned SSEs in dynamic markets.

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## L'impact de l'information digitale sur le public marocain ayant un niveau d'études égal ou supérieur à BAC+5: cas de la guerre à Gaza

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### Résumé

Les contenus des plateformes numériques émergentes constituent un axe important de la recherche en Sciences de l'Information et de la Communication (SIC). A travers cet article, nous nous interrogeons sur la réception de ce type de contenus dans le contexte de la guerre de Gaza 2023-2025 qui a opposé le mouvement palestinien *Hamas* à Israël. Nous avons mené une enquête auprès d'un échantillon constitué de 101 Marocains ayant un niveau d'études égal ou supérieur à BAC+5. Nous avons tenté d'analyser leur perception de l'information numérique et d'explorer leurs tendances et préférences dans la réception des nouveaux processus médiatiques. Cette étude s'intéresse à l'impact des informations numériques présentées sous des formats hybrides sur la compréhension de l'actualité et sur les positions des internautes sur la question palestinienne, ainsi qu'aux effets psychologiques des informations liées au dossier en question. Par ailleurs, il est nécessaire d'élargir l'échantillon pour atteindre une meilleure représentativité et pouvoir généraliser les résultats.

**Mots clés :** Information digitale, réception, journalisme web, nouveaux médias, guerre à Gaza

## The Impact of Digital Information on Moroccans Holding a Master's Degree or Higher: A Case Study of Gaza War

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### Abstract

Content on emerging digital platforms is an important area of research in Information and Communication Sciences (ICS). In this article, we examine how this type of content was received during the 2023-2025 Gaza war between the Palestinian movement Hamas and Israel. We surveyed 101 Moroccans holding a master's degree or higher. We aimed to analyze their engagement with digital information and to explore the trends and preferences in their reception of new media processes. To this end, we carried out an exploratory survey involving 101 participants, based on a structured questionnaire. The survey sought to shed light on several aspects, including the impact of digital information presented in hybrid formats on news comprehension and on users' positions regarding the Palestinian cause, as well as the psychological effects of such information. While the findings are insightful, it is important to note that this study could be expanded to cover a more representative sample of the target population. This would enable us to generalize the results and provide a more comprehensive understanding of the subject matter.

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**Keywords:** Digital information, reception, web journalism, new media, Gaza war

### Introduction

De l'époque de la *seringue hypodermique* de Harold Lasswell (les années 1920) aux études récentes sur les *Media studies* (études des médias), l'influence des médias sur les publics est l'un des objets favoris de la recherche dans les Sciences de l'Information et de la Communication (SIC). En revanche, tous les médias n'influencent pas leurs publics (Vandenbosch et al., 2025) avec la même intensité et tous les publics ne reçoivent pas les messages de la même manière. La question de la réception et de l'interprétation des messages médiatiques est plus que jamais au centre du débat compte tenu de l'expansion des contenus digitaux. Sur les pas de la poste, du téléphone, de la photographie et du bélinographe (Zhan, 2024 & Attali, 2021), la presse écrite, la radio et la télévision ne sont plus ce qu'elles étaient il y a à peine une dizaine d'années. Nous vivons aujourd'hui l'ère des médias sociaux, du Podcast et de la Web TV. Ces plateformes qui constituent aujourd'hui l'une de nos

principales sources d'information ont donné naissance à de nouveaux métiers dans le cadre de ce qu'on appelle « le journalisme web ». Ce métier en pleine expansion nécessite de nouveaux savoir-faire et de nouvelles compétences. Plusieurs entreprises médiatiques de renom ont déjà fait leur transformation numérique, d'autres sont en cours de transformation selon leurs moyens et leurs ambitions. Toutefois, qui dit transformation numérique ne dit pas forcément rupture avec le modèle traditionnel des médias. D'ailleurs, les chiffres liés à la consommation de la télévision en Afrique en témoignent. Selon *Africascope*, une mesure d'audience africaine, **90% des Africains ont regardé la télévision quotidiennement entre 2024 et 2025**, soit plus de 22,4 millions de téléspectateurs avec une durée moyenne de 3h44 par individu (Kantar,2024-2025), contre 89,9% de la population du continent entre 2021 et 2022, soit 18,6 millions de téléspectateurs chaque jour avec une durée moyenne de 3h44 par individu (Kantar,2021-2022). Ainsi, le petit écran résiste encore face aux nouvelles plateformes en Afrique. Autrement dit, l'ère du journalisme unique est révolue ; il n'existe plus un seul journalisme, mais plusieurs journalismes qui peuvent être classiques, semi-classiques ou entièrement numériques (sites web, réseaux sociaux, plateformes de streaming...).

Nous parlons aujourd'hui du « journalisme classique », du « journalisme web » et du « journalisme interactif ». Toutes ces appellations renvoient à un métier d'origine qui s'est transformé à travers le temps et qui continue d'évoluer. La théorie de la réception (Courbet et al., 2009) est au centre des préoccupations des professionnels des médias et des chercheurs en SIC, situés entre le marteau des médias qui se considèrent ultra-modernes et influents et l'enclume de publics de plus en plus conscients des manœuvres et des stratégies des nouvelles plateformes.

Quelle est l'influence des médias digitaux sur le public marocain d'un niveau d'études égal ou supérieur à BAC+5 au sujet de la guerre à Gaza ? Il s'agit de la problématique de ce travail de recherche. Dans une perspective ouverte par des travaux préliminaires, cet article se propose, d'abord, de souligner les concepts de base dont dépendent le fonctionnement et le développement des nouveaux médias, puis, d'explorer l'impact de ces plateformes sur le public. Après la présentation du cadre théorique et des choix méthodologiques, cet article discute les principaux résultats qui ressortent de cette étude.

## **Cadre théorique et conceptuel**

### **Le journalisme numérique, digital et mobile**

Le journalisme numérique, la nouvelle forme d'un métier qui consiste à chercher, remodeler et diffuser l'information via la rencontre entre l'informatique et les télécommunications (Charon, 2011), est l'un des

domaines qui connaissent un développement exponentiel au XXI<sup>ème</sup> siècle. Si nous assistons à un pic d'évolution digitale en journalisme, ce processus de numérisation est engagé depuis une cinquantaine d'années. Il concerne à la fois le processus de collecte et de fabrication de l'information, sa digitalisation textuelle, visuelle et sonore et les outils de son enrichissement et de sa présentation. Il est important de souligner que le journalisme numérique et celui digital évoquent souvent aujourd'hui la même chose, même si « le digital » renvoie généralement aux utilisateurs des nouveaux médias alors que le « numérique » désigne l'industrie de l'information de manière générale.

Aucun secteur faisant appel aux technologies numériques n'échappe aux changements de l'ère que nous sommes en train de vivre, d'où la qualification de notre époque de celle du « *darwinisme numérique* » (Briggs, 2012, p.5). L'étape actuelle de ce processus est celle du « journalisme mobile » exercé et consommé sur téléphone, tablette ou ordinateur portable. Le journaliste mobile est un journaliste entièrement autonome ; il est à la fois journaliste de Desk (rédacteur), présentateur ; capable de faire des plateaux en cas de nécessité, Journaliste Reporter d'Images (JRI) et chroniqueur quand l'analyse ou l'explication s'impose. Le journaliste mobile est aussi un monteur professionnel disposant d'un niveau correct de compétences techniques pour livrer des produits de qualité PAD (Prêts A Diffuser).

Si le journalisme mobile permet des facilités remarquables aussi bien au niveau de la production que de la diffusion des informations, il impose des contraintes considérables aux professionnels des médias et aux publics. N'importe qui peut publier en ligne mettant ainsi sur le devant de la scène « le journalisme citoyen » étant une forme non contrôlée d'exercice du métier par des internautes qui se mettent dans la peau du journaliste professionnel. Les internautes peuvent produire et diffuser une information à grande échelle, souvent, sans aucune vérification. Les contenus circulant sur les réseaux sociaux prouvent que la recherche et le partage de l'information ne sont plus propres aux rédactions des journaux, des chaînes de télévision et de radios. Cette forte dynamique que connaît le monde des médias impacte non seulement les rédactions et leurs journalistes, mais aussi les publics (Vandenbosch et al., 2025). Cette réalité soulève les questions majeures de la réception et de l'influence des nouveaux médias sur les récepteurs.

### **La réception et l'influence des médias digitaux**

L'étude de l'influence des médias a parcouru un long chemin dès la moitié du 20<sup>ème</sup> siècle. Du courant empiriste américain avec Harold Laswell et Paul Lazarsfeld qui met l'accent sur les effets indirects et limités des médias en passant par le courant critique (Adorno, Horkheimer...) qui stipule que les médias influencent considérablement les attitudes des récepteurs, en arrivant à l'analyse de la réception dès les années 1980 (Rieffel, 2015), l'influence des

moyens de communication ne cesse de retenir l'attention. Selon les études de la réception, « *la compréhension du comportement du public repose aujourd'hui sur l'idée que ce qui peut être doté d'effets, ce n'est pas simplement le message conçu, ni le message diffusé : c'est le message effectivement reçu* » (Rémy Rieffel, 2015, p.179). Ce processus interprétatif a migré des médias traditionnels (presse écrite, télévision et radio) aux nouveaux médias et médias digitaux. Ces derniers ont démontré plus que leurs ancêtres la non-coïncidence entre l'encodage et le décodage des messages (Cervulle, 2022) comme le stipule les *cultural studies*. Nous ne donnons pas forcément à ce qu'on lit, écoute ou visionne sur nos écrans portables la signification exacte que nous propose les auteurs (journalistes, chroniqueurs, bloggers...) selon « le modèle texte-lecteur » résumé par Daniel Dayan (Rémy Rieffel, 2015). Les commentaires des internautes sur les réseaux sociaux en sont la preuve ; la véracité des faits, l'adhésion aux idéologies, la confiance accordée aux sources et à leurs intentions n'ont jamais été aussi contestées par les récepteurs.

### **Le journalisme participatif à l'ère du digital**

Rien ne semble plus facile aujourd'hui que de participer à un débat médiatique qu'il soit politique, social, économique, culturel ou autre. Le pouvoir du « clic » (Pignard-Cheynel & Standaert, 2023) est plus que jamais puissant ; des actualités suscitent de houleux débats à travers le monde grâce aux internautes ou à cause d'eux. Si vers la fin du siècle dernier on disait que le web faisait de notre monde « un petit village », le monde est devenu encore plus petit à l'ère de l'expansion du digital. Tout internaute peut commenter n'importe quelle publication d'un média, la rapporter, voire même en faire un événement. Il est même en mesure de créer sa propre plateforme numérique et de publier son propre contenu en transgressant les règles du journalisme (Croissant, 2022). « *Les lecteurs peuvent donner le « quoi » et les journalistes se charger ensuite du « pourquoi »* » (Briggs, 2021). C'est ainsi que l'on peut expliquer le journalisme participatif en tant que nouveau métier qui vient appuyer le journalisme « institutionnalisé » qui ne peut tout dire et tout accomplir. Dans plusieurs pays, certains internautes actifs, notamment sur *Tik Tok*, *Facebook* et *Twitter*, sont devenus des sources de plusieurs médias qui prennent au sérieux leurs publications.

Le journalisme participatif ou « citoyen » est aujourd'hui en plein essor. La chaîne de télévision *France 24* donne la possibilité à ses téléspectateurs d'exercer le métier de journaliste ou du moins d'en assurer certaines tâches. La chaîne a lancé des émissions d'actualité internationale réalisées à partir d'images envoyées par des *observateurs* amateurs et vérifiées par des journalistes. Depuis 2006, *CNN* dispose de la plateforme *iReport* qui

compte plus d'un million de contributeurs représentant pratiquement toutes les régions du monde (Briggs, 2021).

Cette nouvelle forme de journalisme (Assogba, 2020) est une arme à double tranchant. Elle permet, certes, aux rédactions de diversifier leurs sources et d'accéder à des informations dont les journalistes ne disposent pas, mais les médias se retrouvent en même temps submergés par des flux d'informations non vérifiées et difficilement contrôlables (Bogui & Agbobli, 2021). C'est ce qui souligne la nécessité d'une prise de conscience de la délicatesse de la situation par les nouvelles générations de journalistes.

## **Choix méthodologiques**

### **Approche quantitative**

Nous avons opté pour l'approche quantitative qui mobilise des données structurées sur un nombre important d'individus, de préférence supérieur à 100, dans l'objectif de mesurer des phénomènes et de quantifier des liens variables (Coron, 2020). Dans le cas de cette étude, nous avons interrogé la perception du public marocain d'un niveau d'études égal ou supérieur à BAC+5 des contenus digitaux sur la guerre opposant Israël au Hamas. L'adoption de l'approche quantitative, permettant de « *constater l'ampleur d'un phénomène social à un moment donné, dans un contexte donné* » (Hamisultane, 2019, p.415), nous a permis d'identifier les plateformes privilégiées par les interviewés pour s'informer sur la guerre à Gaza ainsi que la durée d'exposition aux contenus numériques. Elle nous a également donné la possibilité d'avoir l'avis des participants sur l'éventuelle influence des productions digitales sur les décisions internationales portant sur la guerre en question.

### **Outils et échantillon**

Nous avons mené une enquête à travers un questionnaire destiné à un public supposé être conscient de l'importance de la recherche et mieux outillé que d'autres catégories de publics pour répondre attentivement aux questions. L'outil de collecte de données que nous avons choisi permet de réduire « *les erreurs éventuelles des données déclaratives* » (Proulx & Rueff, 2018, p. 35). Notre questionnaire propose des questions fermées permettant aux participants de faire un choix parmi une liste prédéfinies d'options. Contrairement aux questions ouvertes favorisant l'exploration et la subjectivité, celles fermées présentent une facilité de réponse et permettent de collecter des données statistiquement significatives (Survey Monkey).

Notre échantillon est aléatoire simple. Ce type d'échantillonnage « *accorde à chaque individu une chance connue, égale et non nulle d'être choisi* » (Gauthier & Bourgeois, 2016, p.272). Il fait partie des techniques probabilistes qui « *sont les seules qui offrent au chercheur une certaine*

*garantie lors du processus de généralisation* » (Gauthier & Bourgeois, 2016, p.271).

### **Présentation de l'échantillon**

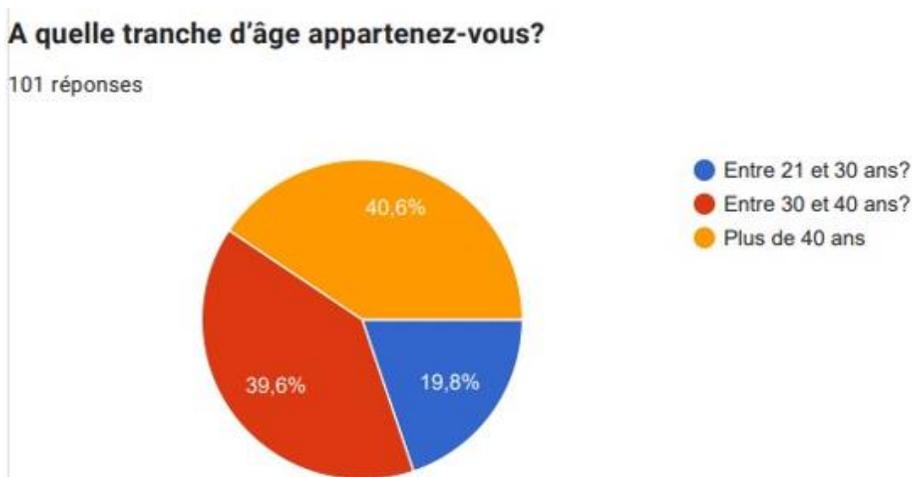
Notre échantillon est constitué de cent Marocains et Marocaines ayant un niveau d'études égal ou supérieur à BAC+5 et ayant obtenu leurs diplômes d'établissements d'enseignement supérieur marocains ou étrangers. Ils sont journalistes de profession exerçant au Maroc et à l'étranger, universitaires, enseignant le journalisme, la communication ou des disciplines liées aux médias, cadres diplômés d'établissements supérieurs marocains de journalisme, médias et communication et ingénieurs maîtrisant le fonctionnement technique des plateformes numériques. Le choix de ces catégories repose sur l'intérêt qu'elles portent pour la recherche dans ce domaine et sur leur initiation aux nouvelles technologies. Les résultats de cette enquête portent sur la période allant du 07 octobre 2023 à fin du mois de novembre de la même année. Cette intervalle a été marquée par une violence inouïe au proche orient et par un intérêt particulier accordé par les médias à la guerre à Gaza.

Nous notons que nous n'avons pas pris en considération le sexe des répondants lors de l'envoi du questionnaire ; la nationalité et le niveau d'études sont les deux principaux éléments de sélection. L'objectif de cette recherche est de confirmer ou d'infirmer quatre hypothèses :

- Les Marocains disposant d'un niveau d'études égal ou supérieur à BAC+5 ne sont pas forcément influencés par l'information digitale sur la guerre à Gaza.
- Le public cible privilégie les plateformes digitales étrangères pour s'informer sur la guerre à Gaza.
- Le public en question fait attention aux sources des contenus auxquels il s'expose.
- La position des Marocains qui font l'objet de cette recherche vis-à-vis de la guerre à Gaza n'est pas influencée par les contenus digitaux.

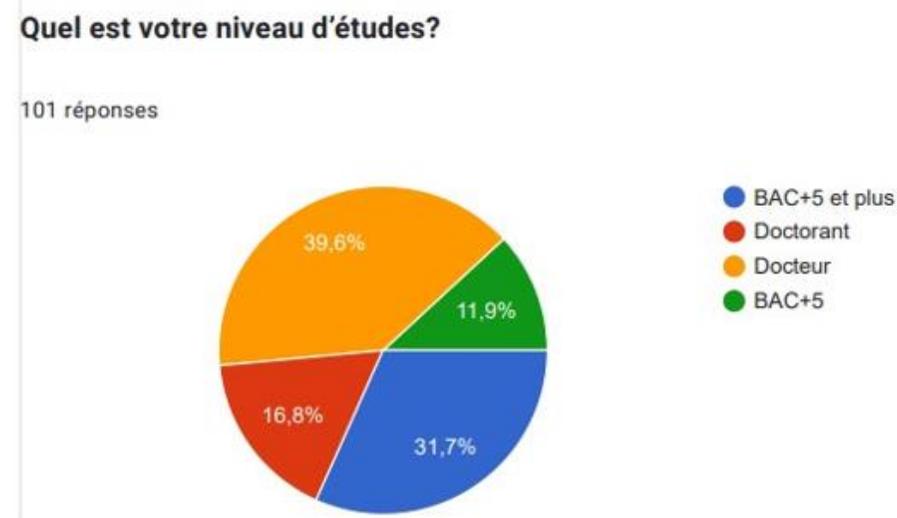
### **Résultats**

Sur les 110 Marocains interviewés, 101 ont accepté de répondre au questionnaire, soit un taux de participation de 91,8%. Dans notre étude, 40,6% des participants ont plus de 40 ans, 39,6% ont entre 30 et 40 ans alors que 19,8% ont entre 21 et 30 ans comme l'indique le camembert 1.



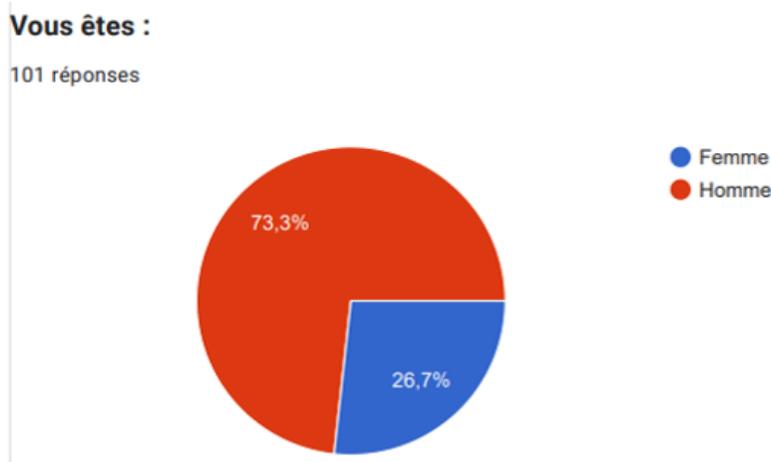
**Figure1** : l'âge des participants

Nous soulignons que 39,6% des répondants ont un diplôme de doctorat obtenu au Maroc ou à l'étranger, 31,7% ont un niveau d'études supérieur à BAC+5, 16,8% préparent un doctorat et 11,9% ont fait 5 ans d'études ou plus après le baccalauréat.



**Figure 2** : le niveau d'études des participants

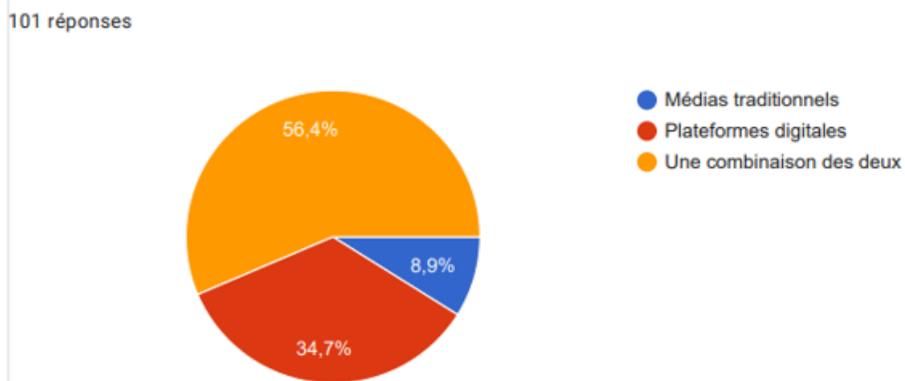
La majorité des participants à cette étude sont des hommes avec un taux de 73,3% alors que les femmes représentent 26,7%. Nous tenons à préciser que le questionnaire a été envoyé sans la prise en compte du sexe des destinataires ; ils étaient femmes et hommes. Les pourcentages collectés dans le cadre de ce travail soulèvent trois questions: la disponibilité, la motivation et l'intérêt accordé à une étude qui porte sur l'impact des informations traitant de la guerre à Gaza.



**Figure 3 :** le sexe des participants

La majorité des répondants à notre questionnaire préfère s’informer sur la guerre à Gaza via des médias traditionnels et des plateformes digitales. 56,4% des participants lisent la presse écrite, regardent la télévision traditionnelle ou écoutent la radio pour avoir les dernières informations sur la situation à Gaza. 34,7% des répondants optent, eux, pour les plateformes digitales alors que seulement 8,9% sont entièrement fidèles aux médias traditionnels.

**Quels médias privilégiez-vous pour vous informer sur la guerre à Gaza ?**

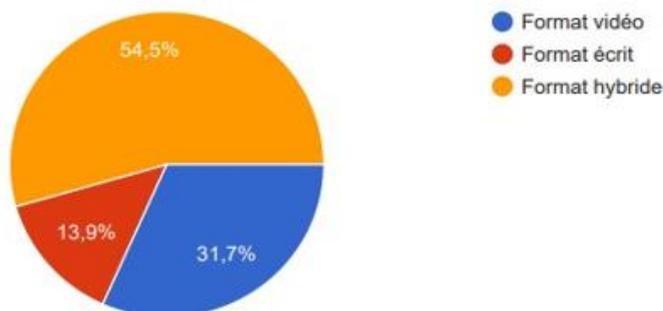


**Figure4 :** les médias privilégiés pour s’informer sur la guerre à Gaza

Par ailleurs, plus de la moitié des participants opte pour le format hybride afin de s’informer sur les plateformes digitales. 54,5% des répondants consultent à la fois les vidéos, les audios et les textes écrits, 31,7% consultent uniquement les vidéos et 13,9% lisent seulement le contenu écrit.

### Préférez-vous le format vidéo ou le format écrit sur les plateformes digitales?

101 réponses



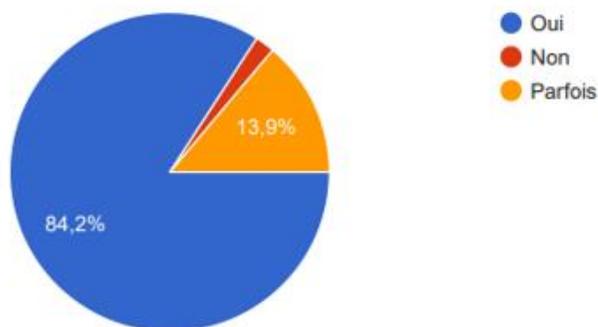
**Figure 5 :** le format privilégié sur les plateformes digitales pour s'informer sur la guerre à Gaza

Les participants à cette étude disent faire attention aux sources originales des productions digitales traitant de la guerre à Gaza à hauteur de 84,2%.

13,9% des répondants au questionnaire s'assurent parfois des sources tandis que 1,9% ne font pas attention aux sources originales des contenus consultés sur les plateformes digitales.

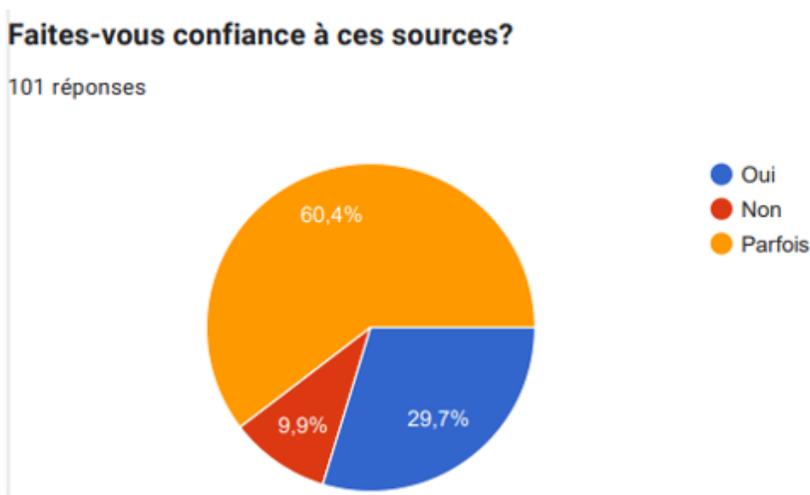
### Faites-vous attention aux sources originales de ces contenus ?

101 réponses



**Figure 6 :** l'attention accordée par les participants aux sources originales

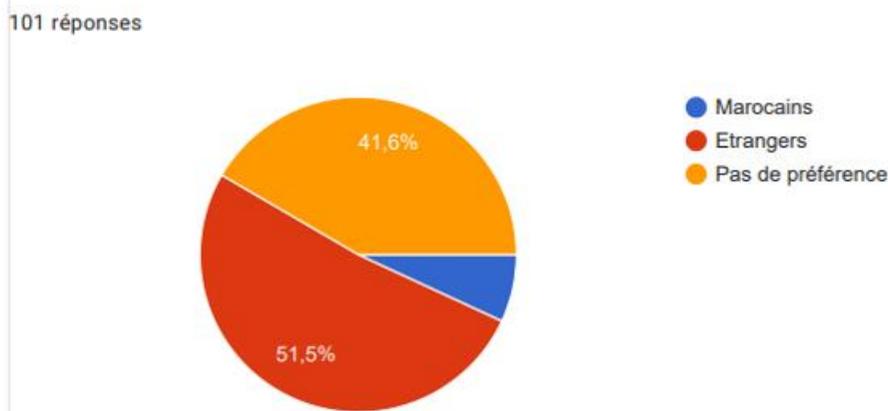
Les sources abordées dans le cadre de ce travail n'inspirent pas toutes confiance aux participants. 60,4% des Marocains ayant pris part à cette étude sont réticents. 29,7% font confiance aux sources des productions consommées sur les plateformes numériques et 9,9% ne leur font pas confiance.



**Figure 7 :** la confiance accordée par les participants aux sources des contenus digitaux

Plus de la moitié des répondants, soit 51,5% des participants à cette étude, préfère s’informer sur la guerre à Gaza via les médias étrangers. 41,6% n’ont pas de préférence quant à la nationalité des plateformes digitales et 6,9% optent plutôt pour les médias digitaux marocains.

**Préférez-vous des médias digitaux marocains ou étrangers pour vous informer sur la situation à Gaza ?**



**Figure 8 :** le type de médias privilégiés pour s’informer sur la guerre à Gaza

Parmi les médias marocains, 36,6% des participants optent pour les plateformes de service public dont *SNRT News*, *my2M* et *Medi1news*, alors que 40,6% préfèrent d’autres plateformes. Nous précisons aussi que 22,8% des répondants ne préfèrent aucune plateforme marocaine pour s’informer sur la situation à Gaza.

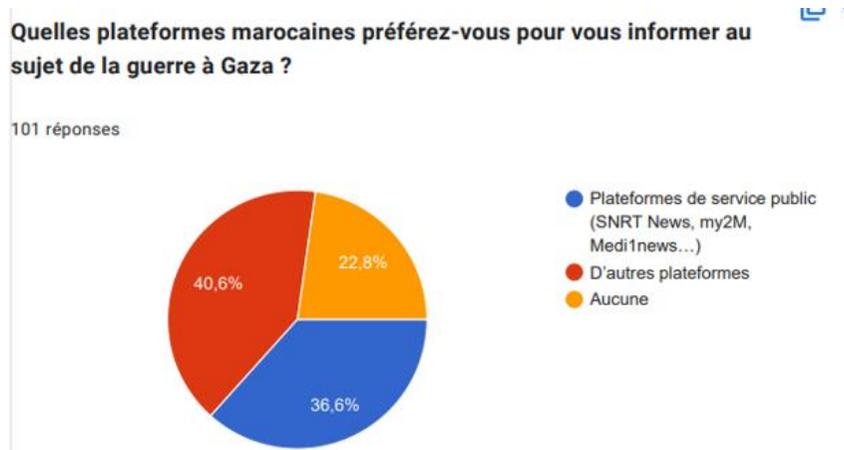


Figure 9 : les plateformes marocaines préférées pour s'informer sur la guerre à Gaza

Les résultats de cette étude témoignent d'une préférence remarquable accordée par les Marocains interrogés pour Al Jazeera, puisque 80,2% des répondants disent s'informer au sujet de la guerre à Gaza sur les plateformes digitales de la chaîne qatarie. D'autres supports digitaux, principalement ceux de la *BBC* (37,6%), de *Sky News* (31,7%) et d'*Al Arabiya* (26,7%), font également partie des plateformes préférées. Les plateformes de *France Télévisions* (14,9%) et de *CBS* (8,9%) semblent peu intéresser le public interrogé. En outre, seulement 3% des participants ne font confiance à aucune plateforme étrangère.

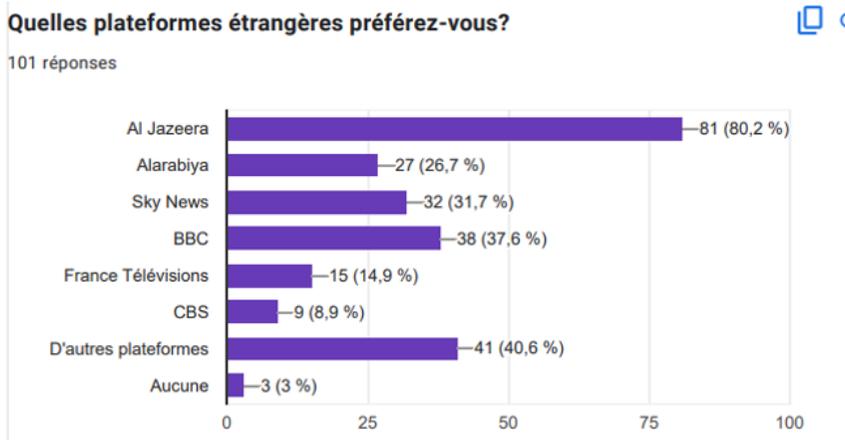
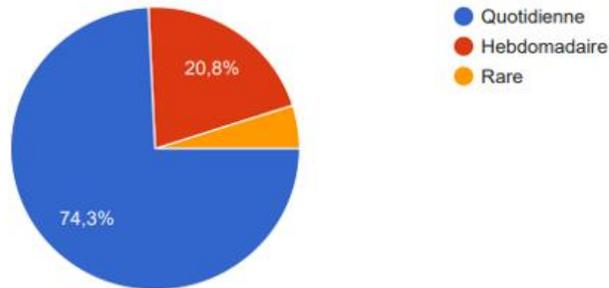


Figure 10 : les plateformes étrangères privilégiées pour s'informer sur la guerre à Gaza

La majorité du public interrogé s'expose quotidiennement aux contenus traitant de la situation à Gaza, soit 74,3% des participants. 20,8% des répondants s'informent sur la question de manière hebdomadaire alors que seulement 4,9% assurent s'exposer rarement à des contenus digitaux traitant de la guerre à Gaza.

### Quelle est la fréquence de votre exposition aux contenus digitaux sur la guerre à Gaza ?

101 réponses

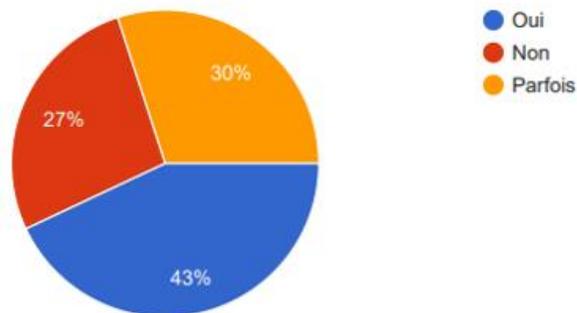


**Figure 11** : la fréquence d'exposition aux contenus digitaux

Concernant la fréquence d'exposition à ces contenus, 43% des personnes interrogées affirment arriver à se maîtriser face aux flux d'informations tandis que 30% y arrivent parfois. 27% des répondants disent, eux, ne pas réussir à contrôler la fréquence de leur exposition aux informations digitales sur la guerre à Gaza.

### Arrivez-vous à maîtriser la fréquence de votre exposition ?

100 réponses

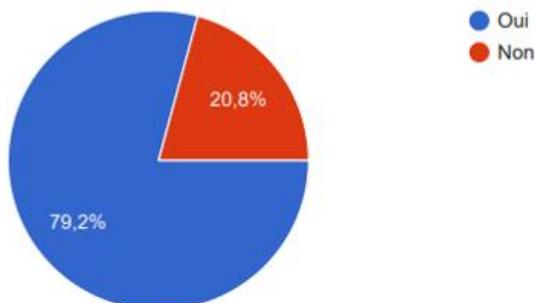


**Figure 12** : la capacité des participants à maîtriser la fréquence de leur exposition aux contenus digitaux

L'exposition aux contenus traitant de la guerre à Gaza impacte la psychologie des internautes s'informant sur les plateformes digitales. 79,2% des Marocains interrogés confirment cette assertion, alors que seulement 20,8% pensent que leur psychologie n'est pas impactée par ces informations.

### Pensez-vous que ces contenus impactent votre psychologie ?

101 réponses

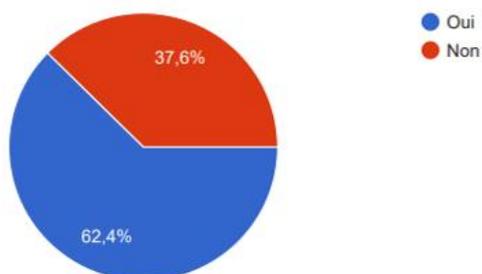


**Figure 13 :** la prise de conscience par les participants de l'impact des contenus numériques sur leur psychologie

La psychologie des participants à ce travail de recherche n'est pas la seule à être impactée, mais également leur position vis-à-vis de la question palestinienne. De leur côté, 62,4% des répondants affirment que les contenus numériques influencent leur position concernant la question contre 37,6% qui estiment ne subir aucune influence à ce propos.

### Pensez-vous que ces contenus influencent votre position vis-à-vis de la question palestinienne ?

101 réponses

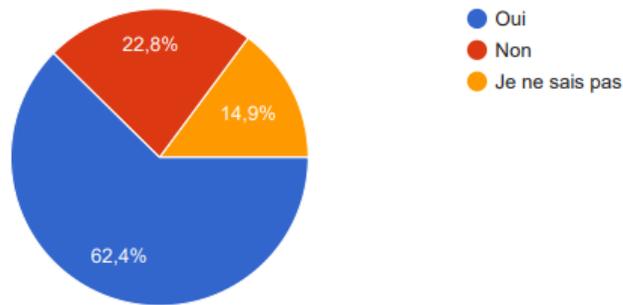


**Figure 14 :** la prise de conscience des participants de l'influence des contenus numériques sur leur position vis-à-vis de la question palestinienne

Par ailleurs, 62,4% des répondants pensent que les contenus numériques diffusés à grande échelle influencent les décisions prises à l'échelle internationale au sujet de la question palestinienne. 22,8% estiment, pour leur part, que les contenus en question n'influencent pas les décisions de la communauté internationale, alors que 14,9% ignorent si les contenus numériques impactent ces décisions.

**Pensez-vous que les contenus digitaux diffusés à grande échelle influencent les décisions prises à l'international au sujet de la question palestinienne ?**

101 réponses



**Figure 15** : l'avis des participants sur l'éventuelle influence des contenus digitaux sur les décisions internationales

## Discussion

Nous constatons à travers les réponses des participants que le public cible, constitué de Marocains ayant un niveau d'études égal ou supérieur à BAC+5, que nous estimons en mesure de porter un regard critique sur la réception des messages médiatiques, a une préférence pour une combinaison des médias nouveaux et traditionnels pour s'informer sur la guerre à Gaza. L'absence de la démocratisation de l'accès aux nouvelles technologies ainsi que la réticence des anciennes générations et leur attachement à leurs habitudes de consommation des médias expliquent cette conclusion.

En outre, les Marocains ayant pris part à cette étude s'informent sur les plateformes digitales en privilégiant le format hybride alliant les vidéos et les textes écrits. Ce choix exprimé par 54,5% des répondants s'explique par la tendance du public à diversifier les formats des contenus consultés pour ne pas s'ennuyer, d'une part, et pour avoir une idée générale sur l'objet de l'information en faisant appel à plus d'un sens, la vue et l'ouïe en particulier, d'autre part. Dans ce sens, le public interrogé favorise le journalisme multimédia étant « pluriel » (Allard, 2012, p.11) et « auto-organisé » (Rieffel, 2015, p.212).

Par ailleurs, les plateformes multimédias compliquent le processus de validation des sources. « *L'effet de vérité crée une adhésion à ce qui peut être jugé vrai ou à une opinion partagée par plusieurs d'autres personnes. Autrement dit, ce qui est recherché n'est pas la vérité en soi mais la crédibilité aux yeux des récepteurs du message* » (Manal El Akhdari, 2022, p. 78). A ce propos, beaucoup reste à faire par les médias digitaux marocains pour

améliorer la qualité de leur image (Zhan, 2024) auprès du public; seulement 6,9% des Marocains interrogés disent préférer les plateformes nationales pour s'informer sur la guerre à Gaza. En revanche, les participants favorisent les médias digitaux étrangers en accordant une confiance remarquable à *Al Jazeera*, à la *BBC*, à *Sky News* et à *Al Arabiya*. Nous nous retrouvons à ce niveau appelés à évoquer les études de la réception de manière générale et celles portant sur les nouveaux médias en particulier. Le modèle unidirectionnel qui est encore adopté par certains médias est révolu ; « le modèle conversationnel » (Rieffel, 2015, p.179) de la communication est celui d'actualité. Le public n'est plus dans une posture verticale de réception ; il favorise les médias qui interagissent de manière remarquable avec lui, dont ceux cités supra. Cependant, les études de la réception ne se penchent pas uniquement sur les modèles adoptés par les médias, mais sur l'expérience médiatique dans son ensemble.

Sur une autre échelle, 43% des participants disent maîtriser la fréquence de leur exposition aux contenus digitaux, mais 74,3% assurent s'informer sur ces plateformes quotidiennement. La question de l'influence se pose ici avec acuité. Quel est l'effet psychologique de ces objets médiatiques ? Quelle est leur influence sur la position du public vis-à-vis de la question palestinienne? Influencent-ils les décisions prises à l'échelle internationale concernant la question palestinienne? Les réponses des participants au questionnaire témoignent d'une forte influence psychologique des plateformes digitales dans la mesure où 79,2% des interviewés la reconnaissent. Par ailleurs, 62,4% des répondants disent que leur position vis-à-vis de la question palestinienne est impactée par le type de contenus traité dans ce travail. Cela rejoint la réflexion de Rémy Rieffel qui stipule que « *le récepteur est un individu actif. Sa latitude d'interprétation est plus ou moins forte selon les circonstances (il peut retirer du texte des satisfactions inattendues, rejeter ou subvertir les significations qu'il lui propose)* » (2015, p. 180). Nous soulignons également l'importance de la symbolique des événements dans le décodage et dans la réception d'un objet médiatique, car « les ressources d'interprétation » (El Akhdari, 2022) mobilisées lors de la réception d'une information en relation avec l'appartenance idéologique, religieuse, nationale ou culturelle dépassent celles activées pendant le décodage des messages en relation avec des sujets moins importants aux yeux des récepteurs-internautes. Ce travail de recherche nous a permis de confirmer des hypothèses de recherche et d'infirmer d'autres. Notre échantillon, représentant les Marocains disposant d'un niveau d'études égal ou supérieur à Bac +5, est influencé par l'information digitale sur la guerre à Gaza. Les participants à l'étude privilégient les plateformes digitales étrangères pour s'informer au sujet du dossier en question et font attention aux sources des contenus auxquels ils s'exposent. En outre, la position des Marocains qui font l'objet de cette

recherche vis-à-vis de la guerre à Gaza est influencée par les contenus digitaux consommés.

## Conclusion

Ce travail de recherche met en lumière la préférence du public cible de la combinaison des nouvelles plateformes numériques et des médias classiques dans la consommation de l'information traitant de la guerre à Gaza. Le format hybride, qui recourt à la fois à la vidéo, au son et au texte, et le journalisme multimédia et transmédia dominant ainsi les tendances de la catégorie sur laquelle nous avons jeté la lumière dans cette recherche. Le défi actuel est de fluidifier les actions des différents acteurs médiatiques marocains durant la période transitoire que nous sommes en train de vivre, car elle pourrait précéder une rupture avec les pratiques journalistiques traditionnelles dans l'avenir. Il est également primordial de consolider la confiance du public cible dans les nouveaux médias marocains en renforçant la transparence du discours médiatique et en diversifiant les sources et les intervenants dans un souci de pluralisme idéologique, politique et culturel.

Afin que les résultats de cette étude soient plus représentatifs, le questionnaire devrait couvrir un échantillon plus large représentant le public cible. Il serait également intéressant d'adapter cette étude à d'autres dossiers d'actualité et à d'autres catégories de publics pour tirer des conclusions plus généralisables.

**Conflit d'intérêts :** L'auteur n'a déclaré aucun conflit d'intérêts.

**Disponibilité des données :** Toutes les données sont incluses dans le contenu de l'article.

**Déclaration de financement :** L'auteur n'a obtenu aucun financement pour cette recherche.

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## Sustainability Accounting and Financial Performance of Commercial Banks in Cameroon

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### Abstract

This study empirically examined the effect of sustainability accounting on the financial performance of commercial banks in Cameroon from 2018 to 2023. The study focused on how economic, environmental, and social sustainability accounting dimensions influence key financial indicators (Return on Assets and Net Interest Margin). The study employed an ex post facto research design and purposive sampling to select 10 of 19 commercial banks. Purposive sampling was used to select commercial banks that had complete financial statement data for the six (06) years, ranging from 2018 to 2023, consistently filed their annual reports, embraced sustainability accounting in line with global best practice, and integrated sustainability information into their annual reports. Sustainability accounting indicators were obtained from the Global Reporting Initiative. The economic, environmental, and social dimensions were used as independent variables. They were measured using a scoring index derived from previous studies, while Return on Assets and Net Interest Margin served as the financial performance metrics. Data from the selected banks were obtained from secondary sources (Audited financial statements). The analysis involved panel regression and descriptive analyses using E-Views 2025. Results indicated a significant relationship between sustainability accounting dimensions and

Return on Assets and Net Interest Margin. The findings suggest that the economic, environmental, and social sustainability accounting dimensions have a notable impact on the Return on Assets and Net Interest Margin of commercial banks in Cameroon. The study recommends that commercial banks in Cameroon should formally integrate economic frameworks into their accounting and reporting systems to monitor their sustainability impact and financial performance continuously.

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**Keywords:** Sustainability accounting, financial performance, Return on Assets, Net Interest Margin

### **Introduction**

The financial performance of banks plays a crucial role in the economic stability and growth of emerging economies (Dagunduro et al.; Oluwagbade et al., 2023). Financial performance is also crucial in enhancing a company's market value (Maryam et al., 2021). This is mainly because shareholders are highly focused on a firm's financial performance, as it helps them make informed investment and financial choices to maximise their wealth. With increasing globalisation and complexity of the financial system in recent times, there is a need for careful and adequate supervision of the banking sector (Menyi et al., 2024). This supervision is essential for ensuring that banks act ethically, safeguard customer interests, and make a positive contribution to sustainable development objectives. Commercial banks in Cameroon operate within a tightly regulated environment primarily under the jurisdiction of COBAC (Commission Bancaire de l'Afrique Centrale), BEAC (Banque des Etats de l'Afrique Centrale), national Financial Institutions Acts, including the OHADA Uniform Acts (accounting laws and corporate law), BASEL III regulations, applied with varying degrees of localisation, environmental and social regulations imposed indirectly through financial sector reforms (ESG-related prudential norms, climate risk disclosures under sustainable finance taxonomies). These institutions set prudential regulations, accounting standards, and guidelines for risk management, liquidity, solvency, internal controls, and governance. Sustainability accounting in commercial banks involves incorporating environmental, economic, and social factors into financial reporting and decision-making (Adur et al., 2023).

Sustainability accounting, according to the Global Reporting Initiative (GRI) 2013, is the practice of measuring, disclosing, and holding an organisation accountable for its performance in achieving sustainable development goals to both internal and external stakeholders. Sustainability accounting involves disclosing Environmental, Economic, and Social (EES) factors and their impacts on financial performance.

The incorporation of Sustainability Accounting (SA) practices within the banking industry has attracted considerable global interest, as these practices enhance both the long-term viability of banks and environmental health. Nevertheless, in Cameroon, the use of SA practices by commercial banks is limited. Despite the growing banking sector in Cameroon, traditional financial service providers face significant challenges from intense competition from credit unions, microfinance institutions, and telecommunications firms that offer tailored financial services. The recent entry of churches into financial services poses an additional threat as they attract customer deposits away from banks. This competition strains commercial banks, risking their capital sources and liquidity, ultimately affecting their profitability and financial performance. As they grapple with these challenges, it remains uncertain whether they can enhance their results through non-financial reporting while maintaining their market position (Dagunduro et al., 2024).

The banking sector in Cameroon plays a vital role in promoting economic growth and development. However, the sector's financial performance measured using Return on Assets (ROA) and Net Interest Margin (NIM) (Bui et al., 2024), have seen significant changes over the years with ROA having dropped from 1.32% in the year 2000 to 1.1% in 2019, while Net Interest Margin dropped from 3.9% in the year 2000 to 3.13 in 2019 (World Bank, 2020). With the banking sector facing challenges in improving its financial performance metrics, specifically ROA and NIM, and also putting efforts to enhance operational efficiency, reduce costs and increase revenue, many banks are struggling to achieve a satisfactory level of ROA and NIM. Empirical studies assessing the impact of sustainability accounting on the financial performance of commercial banks in Cameroon are scarce. This study sought to fill this research gap by empirically measuring the impact of sustainability accounting disclosures on key financial indicators such as Return on Assets and Net Interest Margin. It focuses on how sustainability accounting-related disclosures influence financial performance. This research contributes to the understanding of sustainability accounting as a tool for enhancing financial outcomes and provides insights for policymakers, regulators, and bank managers in Cameroon.

## **Literature review**

### **Conceptual Review**

#### **Sustainability accounting**

Ozili (2021) defined sustainability accounting as the branch of accounting that requires organisations to pay attention to environmental, social, and governance matters by disclosing non-financial information. Sustainability accounting is the process of collecting, analysing, and reporting

information on an organisation's environmental, social, and governance (ESG) performance, alongside traditional financial data, to inform stakeholder decision-making and promote transparency (GRI, 2021). Sustainability accounting refers to the deliberate choice corporations make to disclose and convey their economic, social, environmental, and corporate governance objectives, along with the organisation's approach to disclosing them (Zobolotnyy & Wasilewski, 2019). Sustainability accounting is the practice of integrating non-financial sustainability indicators into corporate reports, allowing stakeholders to assess an organisation's contributions to sustainable development and its management of ESG risks (KPMG, 2022). It contributes to integrating reporting by linking financial and non-financial information, showing how organisations create value over time through environmental stewardship, social responsibility, and governance practices (IIRC, 2021). It is also a strategic management tool that supports internal decision-making by providing data on ecological footprint, social impacts, and ethical practices, facilitating the pursuit of long-term sustainable goals (van Zyl, 2023). Sustainability accounting is the systematic process of disclosing material sustainability-related risks and opportunities that could affect enterprise value, in accordance with emerging global sustainability disclosure standards (IFRS Foundation, 2023). Almansoori and Nobanee (2019) define sustainability accounting as the collection of data on the social, economic, governance, and environmental aspects of banking management.

From the above definitions, Sustainability Accounting is a specialised area of accounting focused on the systematic gathering, analysis, and reporting of non-financial information, including economic, environmental, and social disclosures, alongside conventional financial data. This practice allows organisations to openly communicate their sustainability efforts and goals, support stakeholder decision-making, and incorporate these findings into corporate reports to illustrate long-term value creation and the management of sustainability-related risks and opportunities.

### **Financial Performance**

Dagunduro et al. (2024) explain that financial performance pertains to an organisation's economic viability and Sustainability, evaluating its ability to transform economic resources into value-added outputs while remaining solvent and maintaining a competitive edge over the long term. Odugbemi et al. (2022) defined financial performance as the broad measurement of a company's economic well-being and overall financial health over a period of time. Dada et al. (2023) define financial performance as the outcome of an entity's financial activities during a specific period, reported in accordance with International Financial Reporting Standards (IFRS), which serves as a foundation for stakeholder comparability and decision-making. Financial

performance is a company's achievement in terms of revenue generation, profit-making, and wealth maximisation (Dagunduro et al., 2022). It is measured by market-based indicators such as stock price, earnings per share (EPS), price-to-earnings ratio (P/E), and market capitalisation, reflecting how the market perceives the firm's financial health and prospects (Awotomilusi et al., 2025). Aluko et al. (2022) define financial performance as an organisation's capacity to efficiently utilise its assets to generate revenue and profit, as evidenced by financial statements like the income statement, balance sheet, and cash flow statement. It assesses profitability, liquidity, leverage, and efficiency through key ratios such as Return on Assets (ROA), Return on Equity (ROE), and Net Profit Margin. Adewara et al. (2023) define financial performance as a measure of a company's ability to yield returns for investors, whether through dividends, capital gains, or increases in share price, and as an evaluation of the firm's potential to build shareholder wealth over time. Asubiojo et al. (2023) argue that financial performance encompasses achieving strategic financial objectives, such as revenue growth, cost management, asset utilisation, and profitability. It acts as a feedback mechanism for evaluating operational efficiency and the effectiveness of strategies (Raji & Dagunduro, 2024; Oluwagbade et al., 2023). Awotomilusi et al. (2023) characterise financial performance as the ability of a borrower to fulfil financial obligations using internal cash flows, assessed through liquidity, solvency, profitability, and coverage ratios.

### **Sustainability Accounting and Financial Performance**

Sustainability accounting integrates economic, social and environmental factors into traditional financial accounting. It aims to provide a comprehensive view of an organisation's performance, reflecting its impact on society, the environment and financial metrics. A growing body of knowledge suggests a positive relationship between sustainability practices and the financial performance of commercial banks (Awadzie et al., 2022; Hamad & Osman, 2025). Some of the factors often cited include enhanced reputation, improved risk management, and increased customer loyalty (Awadzie et al., 2022; Rarang, 2023).

Rarang (2023) explores the relationship between sustainability reporting and the financial performance of selected universal and commercial banks in the Philippines for 2017, utilising the Global Reporting Initiative (GRI) guidelines to assess sustainability disclosures across governance, economic, environmental, and social aspects. Financial performance is evaluated through Return on equity (ROE), return on assets (ROA), and net interest margin (NIM). Employing a correlational research design, the study found a significant positive relationship between sustainability reporting disclosure and ROE, but no significant correlations with ROA or NIM. The

findings suggest that regulators should establish standardised reporting frameworks and penalties for non-compliance. Further research is recommended to support business leaders' decision-making.

Jasim (2025) examined the impact of sustainability accounting on the financial performance of Iraqi banks, focusing on how ESG-related disclosures affect Return on Assets (ROA). Using an ex-post facto research design, the study analysed data from 10 selected banks over the years 2015 to 2024, employing panel regression to combine cross-sectional and time-series data. The findings revealed a positive and significant relationship between sustainability accounting initiatives, including environmental, social, and governance factors, and ROA. This suggests that banks investing in sustainable practices are likely to enhance profitability. The study recommends that Iraqi banks integrate ESG frameworks into their accounting systems to better assess sustainability impacts and financial performance.

Ramesh & Amitava (2025) studied the influence of Environmental, Social, and Governance (ESG) practices on the performance of Indian banks, focusing on market and operational metrics. Analysing data from 28 banks (12 public and 16 private) between 2021 and 2023, the researchers employed multiple regression models and robust generalised least squares (GLS) estimation, using Tobin's Q (TQ) and Return on Assets (ROA) as dependent variables. The results indicate that current ESG activities significantly impact financial performance, while the effects of past ESG efforts diminish over time. Furthermore, private banks demonstrated greater initiative in ESG implementation compared to public banks. This study provides insights into sustainable banking practices in India, particularly in light of the Reserve Bank of India's 2020 circular on mandatory ESG disclosures.

Eriqat et al. (2025) explored the effect of corporate governance on the financial performance of banks in the MENA region, analysing a sample of 37 banks listed in Jordan, Palestine, Qatar, and Kuwait from 2016 to 2020. Using static panel estimation methods, the study finds that board size, CEO duality, and transparency positively influence banks' financial performance. Conversely, the presence of women directors on the board and insider ownership negatively affect financial performance. The results support a multi-theory perspective on corporate governance and provide insights for managers, regulators, and policymakers to enhance bank performance through effective governance practices.

### **Theoretical review and development of hypothesis**

This study is grounded in stakeholder and legitimacy theory. Introduced by Freeman (1984), stakeholder theory emphasises that organisations must consider all stakeholders-customers, employees, and communities-beyond just shareholders (Dagunduro et al., 2022).

Sustainability accounting enhances this accountability, fostering stakeholder relationships, mitigating risks, and improving financial performance (Boluwaji et al., 2024). It aligns with the need to engage stakeholders effectively (Dagunduro et al., 2024). Firms have a duty to create value for all stakeholders (Nnadi & Mutyaba, 2023; Ferrell et al., 2010). Engaging in sustainability accounting is crucial for managing and disclosing sustainability strategies (McElroy & van Engelen, 2012) and for promoting the maximisation of sustainability value (Martirosyan & Vashakmadze, 2013).

Legitimacy theory, developed by Pfeffer and Dowling (1975), posits that organisations must legitimise their existence to society to survive. Sustainability accounting facilitates this legitimacy by aligning disclosures with community expectations. The theory, based on a 'social contract' (Deegan, 2002), suggests that companies must operate within societal norms to be perceived as legitimate. By using disclosure strategies, organisations can shape perceptions and ensure they meet ethical standards. If they fail to justify sustainable practices, it may result in reduced consumer demand and regulatory penalties (Deegan, 2014). Ultimately, businesses must consider the rights of the broader community, not just investors.

According to stakeholder theory, the primary objective of a bank's sustainability accounting is to enhance information availability in its accountability to stakeholders. This responsibility, as outlined by Legitimacy theory, stems from the social contract, which requires that a bank's activities be deemed legitimate by external parties. Sustainability accounting measures the extent to which stakeholders and economic systems at local, national, and global levels are affected by an organisation's activities. Sustainability accounting encompasses economic, social, and environmental aspects. Most of the studies (Bui et al., 2024; Raveena & Deergha, 2014; Caesaria & Basuki, 2017; Nnamani et al., 2017; Aggarwal, 2013; Al-Hasnawi, 2024; Amrigan et al., 2023; Othman & Mo'taz, 2019) concluded that sustainability accounting disclosure led to an improvement in the organisation's financial performance by improving confidence of potential investors and creditors, thereby enhancing the image of the organisation. Based on the literature review and study objectives, the hypothesis for this study is as follows:

H<sub>0</sub>: Sustainability accounting has no significant effect on the financial performance of commercial banks in Cameroon.

## **Methodology**

### **Definitions and Operationalisation of Variables**

The independent variable measures were built on measurements published by the Global Reporting Initiative (GRI), as shown in Tables 1, 2 and 3.

**Table 1:** Economic Sustainability Accounting Indicators

<b>Variables</b>	<b>Selected Indicators</b>	<b>Operationalisation (Content Analysis)</b>	<b>References</b>
Economic sustainability accounting	(EC1)	Customers in terms of monetary flow, are measured by their net sales	GRI, (2013); Bui et al., (2024); Natasha & Putu, (2020); Othman & Mo'taz, (2019).
	(EC2)	Suppliers are broken down in terms of the total purchases in the reporting period	
	(EC3)	Obligations relating to payroll, defined benefit plans and different retirement programs: (Employee benefit plans, that is, pension contributions, retirement plans).	
	(EC4)	Distributions to providers of capital broken down by interest on debt and borrowings, and dividends on all classes of shares, with any arrears of preferred dividends to be disclosed. This includes all forms of debt and borrowings, not only long-term debt	

Source: Extracted from GRI, standards 2013

Table 1 provides information on the variables used to calculate the economic sustainability dimension, which is the ratio of economic disclosure to the total disclosures required.

**Table 2:** Environmental Sustainability Accounting Indicators

<b>Variables</b>	<b>Selected Indicators</b>	<b>Operationalisation (Content Analysis)</b>	<b>References</b>
Environmental sustainability accounting	(EN1)	Materials used according to volume or weight: (non-renewable materials used, renewable materials used, recycling, waste management system).	GRI, (2013); Bui et al. (2024); Natasha & Putu (2020); Othman & Mo'taz (2019).
	(EN2)	Energy: (Energy saving initiatives for renewable energy, consumption). Or report on electricity	
	(EN3)	Water: (Water saving initiatives; water and noise pollution; recycling water; compensation for air.).	
	(EN4)	Significant environmental impacts of principal products and services	

Source: Extracted from GRI, standards 2013

Table 2 provides information on the variables used to calculate the environmental sustainability dimension, which is the ratio of environmental disclosure to the total disclosures required.

**Table 3:** Social Sustainability Accounting Indicators

Variables	Selected Indicators	Operationalisation (Content Analysis)	References
Social sustainability accounting	(SO1)	Employment: Breakdown of work force where possible by regions, employment type (full time or part time)	GRI (2013); Bui et al. (2024); Natasha & Putu (2020); Othman & Mo'taz (2019).
	(SO2)	Human Right: (orientation, gender, marital status bias No age, religion)	
	(SO3)	Education and training – average hours of training of each category of employee	
	(SO4)	Advertisement – description of policies, procedures/management systems, and compliance mechanisms for adherence to standards and voluntary codes related to advertising	

Source: Extracted from GRI, standards 2013

Table 3 provides information about the variables used to calculate social sustainability dimension which is the ratio of social disclosure to the total disclosures that must be disclosed.

**Table 4:** Dependent variables

Variable	Aspect	Measures
ROA	Return on Assets	$\frac{\text{Net Income}}{\text{Total Assets}}$
NIM	Net Income Margin	$\frac{\text{Net Interest Income}}{\text{Total Interest Earning Assets}}$

Table 4 gives information about the dependent variables (ROA and NIM). Return on Assets ratio indicates how profitable a firm is relative to its total assets and illustrates how well management employs the bank's total assets to make a profit. Net Interest Margin indicates bank profitability by showing the interest income it generates from its assets and the interest it pays on its liabilities.

**Table 5:** Control Variables

Variable	Aspect	Measures
NPL	Non-performing loan	$\frac{\text{Non – performing loans}}{\text{Total loans}}$
DAR	Debt to Asset ratio	$\frac{\text{Total Equity}}{\text{Total Assets}}$
SIZE	Size	$\text{Total income}$

Table 5 presents the control variables, which are held constant to ensure they don't influence the results. NPL which measures the ratio of total unpaid loans to the total loans granted, DAR which measures the proportion of a bank's assets that are financed by debt and SIZE which is measured by Total income and not total asset because it is considered a more reliable, cash-flow metric that directly reflects a bank's volume of activity and market presence and is independent of capital structure. Total asset was not used because they can suffer from significant valuation problems and do not always reflect a bank's business model.

This study, uses the 4<sup>th</sup> version of GRI guidelines which were obtained in 2013. There are a total of 91 items that must be disclosed, out of which 9 items are economic sustainability accounting measures, 34 items are social sustainability accounting measures and 48 items are sustainability accounting measures. These three variables in the sustainability report were measured through the Sustainability Disclosure Index (SDI). The calculation is carried out using a dummy variable, which is assigned a value of 1 if an item is disclosed and zero (0) if it remains undisclosed. Once all items in the sustainability report have been scored, the scores are aggregated to derive the bank's total score. The SDI calculation formula for each dimension of the sustainability accounting is:

$$SDI = \frac{\text{The amount of items disclosed}}{\text{The amount of items must be disclosed}} \text{ or } \frac{\text{Yes}}{\text{Yes+No}}$$

SDI calculation formula for each aspect of sustainability accounting, which contains economic disclosure (EcDI), environmental disclosure (EnDI) and social disclosure (SoDI):

$$EcDI = V_{ECDI}/M_{EC};$$

$$EnDI = V_{ENDI}/M_{EN};$$

$$SoDI = V_{SODI}/M_{SO}$$

V is number of items disclosed of every aspect, and M is the number of items stated in GRI. Data collection procedures used are documentation and literature study.

The tables above show the measurability of independent variables which include economic sustainability accounting disclosures (Economic disclosure index), environmental sustainability accounting disclosures (Environmental disclosure) and social sustainability accounting disclosures (Social disclosure index) which have been adopted based on measurements published by Global Reporting Initiative (GRI, 2002).

### Sampling procedures and sampling size

Due to incomplete data available for some banks, the purposive sampling technique was employed to select ten (10) commercial banks for this study. Purposive sampling is one of the methods used in determining sample size, where specific elements that satisfy some predetermined criteria are selected. Care was taken to select those banks that had complete data from the financial statements for the six (06) year period ranging from 2018 – 2023; banks that consistently filed their annual report for the study period have embraced Sustainability accounting in line with global best practices and have integrated sustainability information in their annual reports. The banks excluded from the study are those banks whose financial data were not available at the time of the research.

### Sources of Data and instruments

Secondary data were obtained from the audited financial statements of commercial banks in Cameroon which form the main source of data used in the study. The secondary data specifically relates to both the dependent and independent variables. Secondary data for the dependent variable, financial performance as proxy by Return on Asset (ROA) and Net Interest Margin (NIM) were generated from audited statements of comprehensive income and statement of financial position obtained from the Directorate of taxation, Cameroon. Data for the independent variables, economic sustainability accounting, social sustainability accounting and environmental sustainability accounting were obtained from the audited financial statements by using the Global Reporting Initiative (GRI, checklist 2021), which empirically has been adopted by Ramesh & Amitava (2025), Bui et al. (2024, Nathasha & Putu, (2020).

### Model specification and instruments of data analysis

To examine the impact of sustainability accounting disclosures on the financial performance of commercial banks in Cameroon, the following models was developed.

$$ROA_{it} = \beta_0 + \beta_1 EcDi_{it} + \beta_2 SoDi_{it} + \beta_3 EnDi_{it} + \beta_4 DAR_{it} + \beta_5 NPL_{it} + \beta_6 SIZE_{it} + \varepsilon_{it} \dots\dots\dots 1$$

$$NIM_{it} = \beta_0 + \beta_1 EcDi_{it} + \beta_2 SoDi_{it} + \beta_3 EnDi_{it} + \beta_4 DAR_{it} + \beta_5 NPL_{it} + \beta_6 SIZE_{it} + \varepsilon_{it} \dots\dots\dots 2$$

Where, ROA<sub>it</sub> = represents Return on Assets of Commercial banks, i = entity, t= time, EcDi<sub>it</sub> = Economic sustainability disclosure, SoDi<sub>it</sub> = Social sustainability disclosure, EnDi<sub>it</sub> = Environmental sustainability disclosure,

$DAR_{it}$  = Debt to Asset ratio of the banks,  $NPL_{it}$  = Non-Performing loans of the banks,  $SIZE_{it}$  = level of income of the banks,  $\beta_0$  is the constant term,  $\beta_1$ ,  $\beta_2$ ,  $\beta_3$ , and  $\beta_4$  = Beta Coefficients,  $\epsilon$  = Error term. The dependent variables are ROA and NIM while the independent variables are Economic sustainability accounting (Economic disclosures), Social sustainability accounting (social disclosures) and Environmental sustainability accounting (Environmental disclosures). Control variables are Non-Performing loans, debt to asset ratio and size of the banks

## Data analysis and hypothesis testing

### Descriptive statistics

**Table 6:** Descriptive Statistics

Name	Mean	Median	Standard deviation	Excess kurtosis	Skewness
<b>ROA</b>	0.052	0.107	0.405	0.285	1.945
<b>NIM</b>	0.028	0.212	0.373	0.897	1.565
<b>EcDi</b>	0.189	0.716	0.721	0.201	1.825
<b>EnDi</b>	0.125	0.016	0.751	0.914	1.707
<b>SoDi</b>	0.261	0.226	0.791	0.126	1.212
<b>DAR</b>	0.208	0.509	0.132	0.424	1.754
<b>BSIZE</b>	0.416	0.163	0.138	0.658	1.202
<b>NPL</b>	0.623	0.213	1.607	0.555	1.416

Source: Author's computation using E-views (2025)

Table 6 shows a mean value of 0.052 and 0.028 for return on assets and net interest margin, respectively. The Table 6 standard deviation indicates acceptable variation from the mean and also acceptable heterogeneity in the data collection. The normality test values for all variables met the test of normality as all the critical ratios of both kurtosis and skewness fell within the bench mark of -1 to +1, and -2 to +2 for both skewness and kurtosis, respectively (Hair et al, 2022: p66).

### Model 1: Effect of Sustainability Accounting on Return on Assets

**Table 7:** Effect of Sustainability Accounting on Return on Assets

Fixed effect

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.057554	0.012888	4.465704	0.0000
EcDi	0.032222	0.006677	4.825819	0.0000
SoDi	0.033452	0.009501	3.520892	0.0000
EnDi	0.035455	0.014733	2.402914	0.0000
DAR	0.036987	0.016472	2.245447	0.0000
NPL	0.038878	0.017422	2.231546	0.0000
SIZE	0.038899	0.016811	2.313902	0.0000
Effects Specification				
Cross-section fixed (dummy variables)				
R-squared	0.443928	Mean dependent var		0.024611

Adjusted R-squared	0.383674	S.D. dependent var	0.045012
S.E. of regression	0.037911	Akaike info criterion	-3.641361
Sum squared resid	0.298822	Schwarz criterion	-3.426084
Log likelihood	416.3677	Hannan-Quinn criter.	-3.554359
F-statistic	17.55445	Durbin-Watson stat	1.843023
Prob(F-statistic)	0.000000		

<b>Hausman test</b>			
Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	8.721304	1	0.0122

Source: Author’s computation (2025) E-View output extracted from Appendix

To enable the study, choose between the fixed effect model and the random effect model; a Hausman test is conducted, with the comparable results placed in Appendix A. The result of the Hausman correlation test in Table 7 shows a cross-sectional random probability value of 0.0122 with a Chi-square statistic of 8.721304 which is significant, thus informing the study decision to choose the fixed effect model, given that there’s proof that variations in the explained variable are accounted for by the explanatory variable sustainability accounting.

The fixed effect result, in Table 7, presents the regression result on the effect of sustainability accounting on return on assets. From the model summary table above, the following information can be extracted. The  $R^2$  which measures the level of variation of the dependent variable caused by the independent variables, stood at 0.443928. The  $R^2$ , otherwise known as the coefficient of determination shows the percentage of the total variation of the dependent variable that can be explained by the independent or explanatory variable sustainability accounting. Thus, the  $R^2$  value of approximately 0.444 indicates that 44 per cent of the variation in the ROA of banks can be explained by a variation in auditor’s independence, sustainability accounting, while the remaining 56 per cent could be accounted for by other factors not included in this model. The adjusted  $R^2$  of approximately 0.384 indicates that if other factors are considered in the model, this result will deviate from it by only 0.060 (i.e., 0.444 – 0.384). This result shows that there will be a further deviation of the variation caused by the independent factors to be included by 0.060 (6 per cent).

Fisher’s statistics 17.55445 at a probability value of 0.000 means the model as a whole is statistically significant at a 5 percent level ( $P = 0.000 < 0.05$ ). This implies that sustainability accounting has a significant effect on return on assets. To test for autocorrelation, the Durbin Watson statistic value of 1.843023 falls within the acceptable range of 1.50 to 2.5, meaning there is no autocorrelation.

## Model 2: Effect of Sustainability Accounting on Net Interest Margin

**Table 8:** Effect of sustainability accounting on net interest margin  
Fixed effect

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.047077	0.009700	4.853127	0.0000
EcDi	0.035161	0.014104	2.492981	0.0123
SoDi	0.056174	0.024524	2.290572	0.0168
EnDi	0.033323	0.011987	2.779928	0.0027
DAR	0.036167	0.015109	2.393765	0.0122
NPL	0.048444	0.022289	2.173449	0.0232
SIZE	0.046167	0.015109	3.055596	0.0011
Effects Specification				
Cross-section fixed (dummy variables)				
R-squared	0.324754	Mean dependent var	0.024677	
Adjusted R-squared	0.265987	S.D. dependent var	0.045021	
S.E. of regression	0.037985	Akaike info criterion	-3.641316	
Sum squared resid	0.298877	Schwarz criterion	-3.426048	
Log likelihood	416.3655	Hannan-Quinn criter.	-3.554395	
F-statistic	16.84311	Durbin-Watson stat	1.930324	
Prob(F-statistic)	0.000000			

Hausman test			
Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	7.233442	1	0.0327

Source: Author's computation (2025) E-View output extracted from Appendix

To enable the study to choose between the fixed effect model and the random effect model, a Hausman test is conducted with the comparable results placed in Appendix A. The result of the Hausman correlation test in Table 8 shows a cross-sectional random probability value of 0.0327 with a Chi-square statistic of 7.233442, which is significant, thus informing the study decision to choose the fixed effect model, given that there's proof that variations in the explained variable are accounted for by the explanatory variable sustainability accounting.

The fixed effect result, in Table 8, presents the regression result on the effect of sustainability accounting on net interest margin. From the model summary table above, the following information can be extracted. The  $R^2$  which measures the level of variation of the dependent variable caused by the independent variables, stood at 0.324754. The  $R^2$ , otherwise known as the coefficient of determination shows the per cent of the total variation of the dependent variable that can be explained by the independent or explanatory variable sustainability accounting. Thus, the  $R^2$  value of approximately 0.325 indicates that 32.5 per cent of the variation in the ROA of banks can be explained by a variation in auditor's independence, sustainability accounting, while the remaining 67.5 per cent could be accounted for by other factors not

included in this model. The adjusted  $R^2$  of approximately 0.266 indicates that if other factors are considered in the model, this result will deviate from it by only 0.059 (i.e.,  $0.325 - 0.266$ ). This result shows that there will be a further deviation of the variation caused by the independent factors to be included by 0.059 (5.9 per cent).

Fisher's statistics 16.84311 at a probability value of 0.000 means the model as a whole is statistically significant at 5per percent level ( $P = 0.000 < 0.05$ ). This implies that sustainability accounting does have a significant effect on net interest margin. To test for autocorrelation, the Durbin Watson statistic value of 1.930324 falls within the acceptable range of 1.50 to 2.5, meaning there is no autocorrelation.

### Test of Hypotheses

#### Effect of sustainability accounting on return on assets and net interest margin banks: Hypothesis 1a

**H<sub>0</sub>:** Sustainability accounting has no significant effect on the return on assets of banks in Cameroon.

**H<sub>A</sub>:** Sustainability accounting has a significant effect on the return on assets of banks in Cameroon.

**Table 9:** Sustainability accounting and ROA

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.057554	0.012888	4.465704	0.0000
EcDi	0.032222	0.006677	4.825819	0.0000
SoDi	0.033452	0.009501	3.520892	0.0000
EnDi	0.035455	0.014733	2.402914	0.0000
DAR	0.036987	0.016472	2.245447	0.0000
NPL	0.038878	0.017422	2.231546	0.0000
SIZE	0.038899	0.016811	2.313902	0.0000

Source: Extracted from table 7 above

Results in Table 9 indicate that the t-statistic for dependent and control variables of  $EcDi = 4.8258$ ,  $SoDi = 3.5209$ ,  $EnDi = 2.4029$ ,  $DAR = 2.2454$ ,  $NPL = 2.2315$  and  $SIZE = 2.314$  is statistically significant at a 5 percent level ( $P = 0.0000 < 0.05$ ). This result signifies that the null hypothesis ( $H_0$ ) is rejected and the alternative ( $H_A$ ) is accepted and therefore concludes that sustainability accounting has a significant effect on return on assets of banks in Cameroon.

### Hypothesis 1b

**H<sub>0</sub>:** Sustainability accounting has no significant effect on the net interest margin of banks in Cameroon.

**H<sub>A</sub>:** Sustainability accounting has a significant effect on the net interest margin of banks in Cameroon.

**Table 10:** Sustainability accounting and NIM

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.047077	0.009700	4.853127	0.0000
EcDi	0.035161	0.014104	2.492981	0.0123
SoDi	0.056174	0.024524	2.290572	0.0168
EnDi	0.033323	0.011987	2.779928	0.0027
DAR	0.036167	0.015109	2.393765	0.0122
NPL	0.048444	0.022289	2.173449	0.0232
SIZE	0.046167	0.015109	3.055596	0.0011

Source: Extracted from table 8

Results in Table 10 indicate that the t-statistic for EcDi = 2.4929, SoDi = 2.2906, EnDi = 2.7799, DAR = 2.3938, NPL = 2.1734 and SIZE = 3.0556 is statistically significant at 5 percent level ( $P = 0.0123, 0.0168, 0.0027, 0.0122, 0.0232, 0.0011 < 0.05$ ). This result signifies that the null hypothesis ( $H_0$ ) is rejected and the alternative ( $H_A$ ) is accepted and it is concluded that sustainability accounting has a significant effect on net interest margin of banks in Cameroon.

The analysis of the effects of sustainability accounting and financial performance (ROA and NIM) revealed positive and significant impacts, consistent with findings from previous studies (Jasim, 2025; Bui et al., 2024; Raveena & Deergha, 2014; Caesaria & Basuki, 2017; nnamani et al., 2017; Aggarwal 2013; AI-Hasnawi, 2024; Amrigan et al., 2023; Othman & Mo'taz, 2019). The research hypothesis, which posited that sustainability accounting positively and significantly influences financial performance, is supported by sufficient evidence. Disclosing sustainability accounting enhances the organization's financial performance by boosting the confidence of potential investors and creditors, thereby improving the bank's image.

## Conclusion

The study's findings indicate that sustainability accounting significantly impacts the financial performance of banks in Cameroon. Economic dimensions tend to attract more investment, as investors are more likely to allocate their capital to companies engaging in such disclosures, thereby enhancing financial performance. The research shows that sustainability accounting in economic, environmental and social aspects positively affects the financial performance of commercial banks from 2018 to 2023. This aligns with stakeholder theory, which views the disclosure of financial, social, and environmental information as a dialogue between companies and stakeholders, aimed at satisfying information needs to improve company performance and achieve anticipated profits.

Overall, the results confirm that EcDi has a significant positive coefficient and this indicates that economic disclosures are associated with

substantial improvements in performance metrics. This highlights the need for clear and open financial reporting. Also, SoDi has a positive and significant effect and this suggests that social responsibility initiatives play a crucial role in enhancing financial performance. As such, they highlight the impact of corporate social responsibility. EnDi contributes positively to performance, reinforcing the notion that environmental initiatives are vital for financial success. DAR has a positive relationship, indicating that higher leverage may be associated with improved performance, suggesting that banks can effectively utilise debt to enhance returns. NPL shows that an increase in non-performing loans correlates positively with the dependent variable (ROA and NIM), which may imply that banks might have intentionally pursued higher interest income by lending to riskier borrowers, which can increase the NIM, even if the loan becomes non-performing, they can still boost profitability.

To conclude, these findings suggest that banks focusing on economic, social, and environmental disclosures, while managing their asset structures effectively, are likely to see improvements in financial performance. The statistical significance of all variables reinforces the importance of integrating sustainability accounting into banking practices to drive positive outcomes.

This will only add value to the banking operations of those financial institutions, given the competition from most informal financial houses.

The study focused on banks in Cameroon, which may limit the generalization of the findings to other regions or countries. Results may differ significantly in other contexts due to differences in the regulatory landscape, cultural factors and economic conditions. In addition, the timeframe covers a relatively short period (2018 – 2023), where economic and environmental conditions evolve and a longer time frame might yield more comprehensive insights into the long-term effects of sustainability accounting on financial performance. Future research could compare the impact of sustainability accounting across different countries or regions to identify contextual factors that influence financial performance. This could involve cross-country analysis or regional studies within Africa.

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## **Effets du programme de formation et d'insertion des jeunes ruraux piloté par le RESOPP sur les conditions socio-économiques des bénéficiaires et la performance de leurs exploitations familiales dans les régions de Thiès et Louga**

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### **Résumé**

Cet article analyse les effets du programme de formation et d'insertion des jeunes ruraux, mis en œuvre par le RESOPP entre 2016 et 2024, sur les bénéficiaires et leurs exploitations dans les régions de Thiès et de Louga. Pour cette analyse, la méthode des statistiques descriptives a été utilisée sur un échantillon de 80 jeunes ruraux, comprenant 40 bénéficiaires du programme et 40 témoins. Les données ont été collectées à l'aide d'un questionnaire administré via l'application Kobotoolbox. Les résultats montrent que le programme a eu un effet globalement positif sur les jeunes bénéficiaires et leurs exploitations. Sur le plan économique, il a favorisé une meilleure insertion professionnelle, les participants étant devenus majoritairement

entrepreneurs (61,40 %) dans les secteurs de l'agriculture et de l'élevage. Ces dynamiques entrepreneuriales ont contribué à l'augmentation de leur revenu moyen passant de 67 487 FCFA à 109 243 FCFA sur la période 2016 – 2024. Sur le plan social, le programme a permis de réduire le chômage de 76,25 % des enquêtés surtout chez les bénéficiaires. Ceci a permis d'améliorer leur accès à une alimentation suffisante et nutritive, grâce aux activités productives qu'ils ont développées. Au niveau des exploitations, des améliorations notables ont été constatées : les rendements agricoles se sont accrus grâce au renforcement des compétences techniques des jeunes agriculteurs, tandis que dans le domaine de l'élevage, une meilleure gestion des exploitations a été observée.

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**Mots clés :** Effets, formation et insertion, jeunes ruraux, emplois agricoles, exploitations familiales, entrepreneuriat agricole

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## **Effects of the Training and Integration Program for Rural Youth Led by RESOPP on the Socio-Economic Conditions of Beneficiaries and the Performance of Their Family Farms in the Regions of Thiès and Louga**

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### **Abstract**

This article analyzes the impacts of the training and integration program for rural youth, implemented by RESOPP between 2016 and 2024, on the beneficiaries and their farms in the regions of Thiès and Louga. For this analysis, descriptive statistical methods were applied to a sample of 80 rural youth, consisting of 40 program beneficiaries and 40 control participants. Data were collected through a questionnaire administered via the Kobotoolbox application. The findings indicate that the program had an overall positive

effect on both the beneficiaries and their farming activities. Economically, it facilitated better professional integration, with most participants becoming entrepreneurs (61,40 %) in the agriculture and livestock sectors. These entrepreneurial dynamics contributed to an increase in their average income. These entrepreneurial dynamics contributed to an increase in their average income from 67,487 CFA francs to 109,243 CFA francs over the period 2016–2024. On the social level, the program has reduced unemployment by 76.25% among those surveyed, especially among beneficiaries. This has enabled them to improve their access to sufficient and nutritious food, thanks to the productive activities they have developed. At the farm level, significant improvements were observed: agricultural yields increased due to enhanced technical skills among young farmers, while in the livestock sector, better farm management practices were recorded.

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**Keywords:** Effects, training and integration, family farms, young rural people, agricultural jobs, agricultural entrepreneurship

## Introduction

La population sénégalaise se caractérise par sa forte proportion de jeunes, avec un âge moyen de 24 ans (ANSD, 2025), tandis que le taux de chômage élargi était estimé à 20 % au quatrième trimestre de 2024 (ANSD, 2025). Malgré l'importance du secteur agricole dans l'économie nationale, ce dernier n'échappe pas aux difficultés structurelles : chômage et sous-emploi élevés, exode rural croissant, vieillissement et féminisation de plus en plus marqués de la main-d'œuvre, manque de professionnalisme, autant de facteurs qui freinent le développement équilibré des régions (PRACAS, 2014). À ces contraintes s'ajoutent des pressions environnementales majeures : dégradation des sols, pollution des eaux, perte de biodiversité et effets du changement climatique, compromettant la sécurité alimentaire (AMC, 2015, cité par RESOPP, 2016). Par ailleurs, l'urbanisation rapide et non maîtrisée constitue un défi supplémentaire.

Face à ces enjeux, le Sénégal a engagé, depuis 2004, une série de stratégies de modernisation agricole et de promotion de l'agro-industrie. Parmi les initiatives phares figurent la Loi d'Orientation Agro-Sylvo-Pastorale (LOASP), le Plan de Retour Vers l'Agriculture (REVA), la Grande Offensive pour la Nourriture et l'Abondance (GOANA), le Programme d'Amélioration de la Sécurité Alimentaire (PASA) ainsi que le Programme de Relance et d'Accélération de la Cadence de l'Agriculture Sénégalaise (PRACAS) (RESOPP, 2016). Ces dispositifs traduisent la volonté de l'État de positionner l'agriculture comme moteur du développement socio-économique national. Dans cette perspective, plusieurs programmes d'insertion des jeunes dans le secteur agricole ont été lancés, tels que le Programme national des Domaines

Agricoles Communautaires (PRODAC), le Projet Agri jeunes « Tekki Ndawñi », ou encore le Programme d'Accélération du Modèle d'Insertion des Jeunes en Agriculture (PA-MIJA).

C'est dans ce cadre que s'inscrit le programme de formation et d'insertion des jeunes ruraux initié par le Réseau des Organisations Paysannes et Pastorales (RESOPP). Mis en œuvre entre 2016 et 2024, il vise le renforcement des capacités techniques, entrepreneuriales et environnementales des jeunes âgés de 15 ans à 40 ans. L'intervention a concerné, par cohortes successives de 100 à 200 participants, des jeunes membres du RESOPP ainsi que 255 autres bénéficiaires appuyés dans les filières agro-sylvo-pastorales, répartis dans les régions de Thiès, Louga, Saint-Louis, Sédhiou, Kaffrine, Tambacounda, Fatick et Kaolack. L'objectif central est de promouvoir l'entrepreneuriat agricole, de dynamiser les exploitations familiales et de contribuer à la réduction du chômage, à la maîtrise de l'exode rural et à l'amélioration de la sécurité alimentaire. Ainsi, le présent travail se propose d'analyser les effets de ce programme sur les conditions socioéconomiques des bénéficiaires et sur la performance de leurs exploitations dans les régions de Thiès et de Louga.

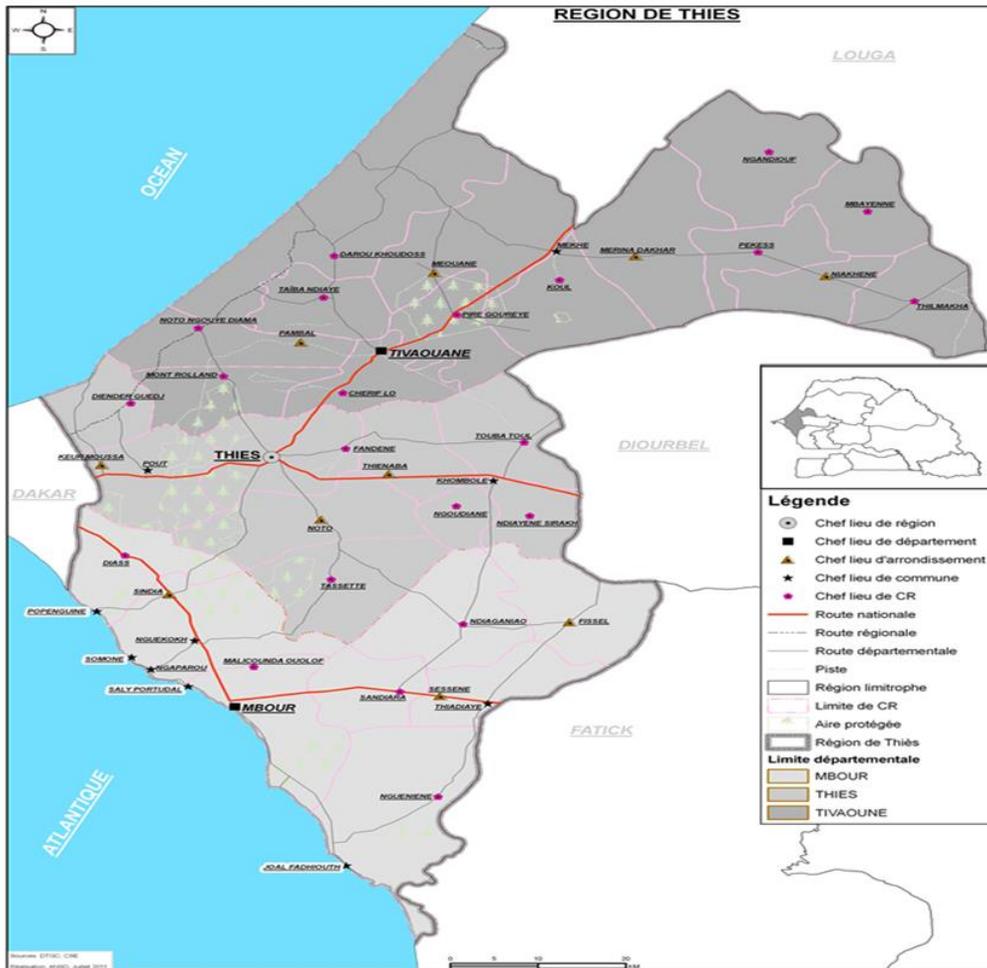
## **Matériel et méthodes**

### **Zones de l'étude**

Cette étude porte sur deux régions du Sénégal : Thiès (figure 1) et Louga (figure 2).

La région de Thiès couvre une superficie de 6 601 km<sup>2</sup>. Elle est délimitée au Nord par Louga, au Sud par Fatick, à l'Ouest par Dakar et l'océan Atlantique, et à l'Est par Diourbel et une partie de Fatick. Avec une population de 2 463 677 habitants, dont 43 % résident en milieu rural, elle constitue la deuxième région la plus peuplée du pays après Dakar (ANSD, 2025c). L'agriculture y occupe une place prépondérante, notamment l'horticulture, le manioc (premiers rangs nationaux) et l'arboriculture fruitière (deuxième rang). L'élevage représente également un pilier de l'économie régionale, contribuant de manière significative à la sécurité alimentaire, en particulier dans les zones rurales (ANSD, 2025c). La région est subdivisée en trois départements : Tivaouane, Mbour et Thiès.

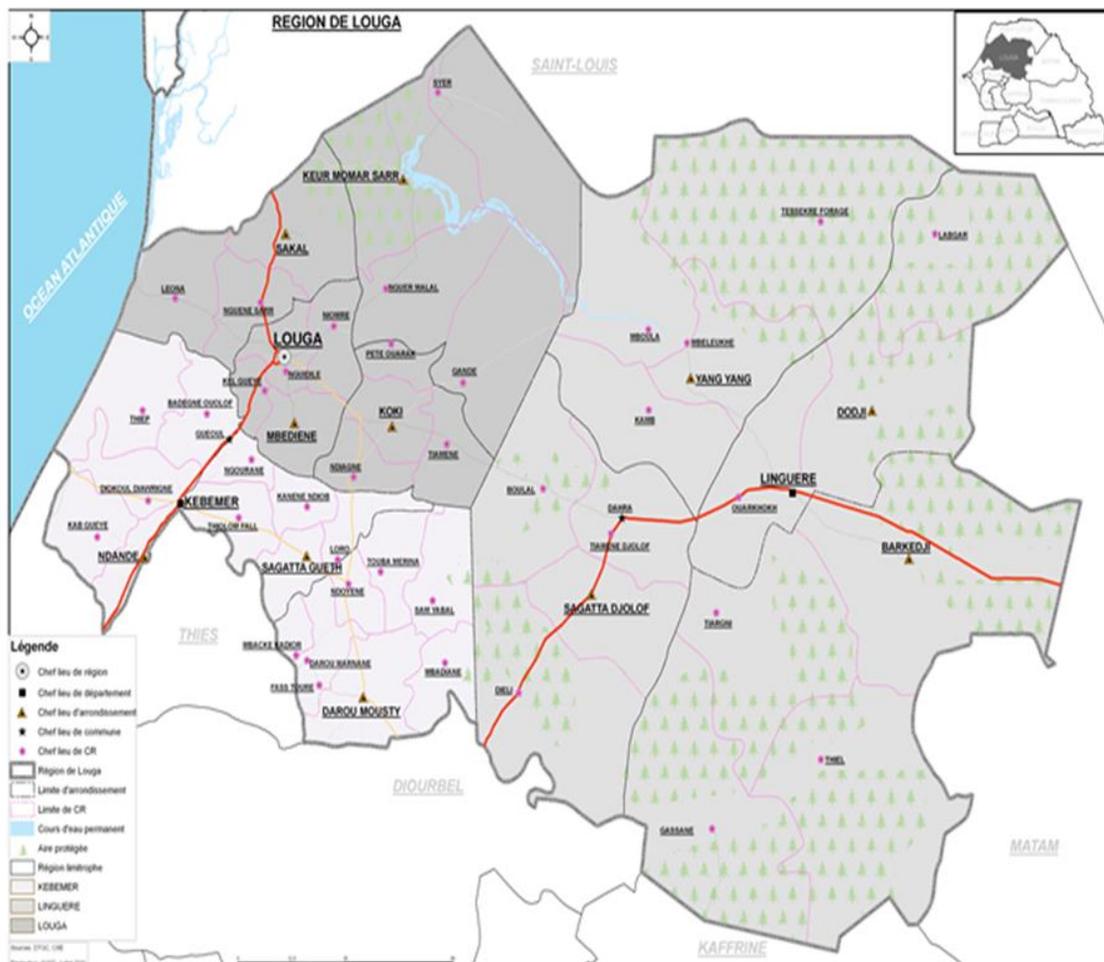
**Figure 1 : Carte de la région de Thiès**



Source : ANSD, 2023

La région de Louga, quant à elle, s'étend sur 24 847 km<sup>2</sup>. Elle est bordée au Nord par Saint-Louis, à l'Est par Matam, et au Sud par Thiès, Diourbel et Kaffrine. Elle compte 1 125 908 habitants (ANSD, 2025b) et se compose de trois départements : Kébémér, Linguère et Louga. De vocation agropastorale, son économie repose principalement sur l'agriculture et l'élevage. L'agriculture y est essentiellement pluviale et saisonnière, dominée par l'arachide et les cultures vivrières de subsistance. La région dispose également d'importantes ressources forestières, comprenant le bois de chauffe, des fruits forestiers (jujube, « soumpe », « nep nep », pain de singe) ainsi que des gommés (arabique et « mbep ») (ANSD, 2025b). Louga abrite par ailleurs le plus vaste ranch du Sénégal, situé dans le département de Linguère, ce qui illustre l'importance de l'élevage dans l'économie régionale.

Figure 2 : Carte de la région de Louga



Source : ANDS, 2023

### Méthode d'échantillonnage de la population enquêtée

Pour conduire cette étude de manière rigoureuse, nous avons adopté la méthode d'échantillonnage aléatoire. La population a été divisée en groupes homogènes appelés strates au sein desquels des échantillons indépendants ont été sélectionnés aléatoirement. Sur un total de 66 bénéficiaires répartis dans les départements de Louga, Mbour, Thiès et Tivaouane, 40 ont été retenus. Un échantillon de taille identique (40) a également été constitué pour le groupe témoin, soit un effectif total de 80 individus (voir Tableau 1). Précisons que le groupe témoin représente les individus qui n'ont jamais bénéficié d'un programme de formation/insertion. Leur choix est fait sur la base de la liste des non bénéficiaires donnée par les responsables des coopératives de chaque département.

La formule suivante a permis de déterminer la taille de l'échantillon :

$$nf = \frac{n}{1 + \left(\frac{n}{N}\right)}$$

N : le nombre total de bénéficiaire dans les deux régions ; N=66 n : le degré de représentativité de l'échantillon ;  $n = 1/d^2$ ,  
d : le degré d'erreur choisi : 10% d'où  $n = 100$   
nf : la taille de l'échantillon ;  $nf = 40$

Chaque département est représenté proportionnellement dans la population suivant la formule : Taille de l'échantillon par département =  $(nf / N) \times$  Taille des bénéficiaires dans le département.

**Tableau 1** : Taille de l'échantillon par département

Départements	Taille des bénéficiaires	Echantillons		
		Bénéficiaires	Témoins	Total
Louga	25	15	15	30
Mbour	14	9	9	18
Thiès	15	9	9	18
Tivaouane	12	7	7	14
<b>Total</b>	<b>60</b>	<b>40</b>	<b>40</b>	<b>80</b>

Source : Nos enquêtes, 2025

### Méthode de collecte de données

La collecte des données a été réalisée à l'aide d'un **questionnaire** et d'un **guide d'entretien** administrés via l'application KoboToolbox auprès des différentes parties prenantes. Cette plateforme nous a permis de concevoir le questionnaire et le guide d'entretien. Le questionnaire a été adressé aux bénéficiaires du programme de formation/insertion ainsi qu'au groupe témoin, tandis que le guide d'entretien a été utilisé auprès des chefs de ménage, des responsables de coopératives et de l'équipe des formateurs. Afin d'assurer la fiabilité et l'authenticité des informations recueillies, les enquêtes ont été menées de manière individuelle. Par ailleurs, les chefs de ménage ont participé à des focus groups, tandis que les responsables de coopératives et les formateurs ont été interrogés lors d'entretiens individuels. À l'issue de la collecte, un travail de dépouillement a permis d'identifier et de corriger les données aberrantes, assurant ainsi la fiabilité de la base de données. Les informations recueillies via l'application KoboCollect ont ensuite été exportées vers Excel, puis analysées avec le logiciel SPSS. L'analyse a combiné des statistiques descriptives et des approches qualitatives, en mobilisant des indicateurs économiques et sociaux spécifiquement définis pour l'étude.

Le consentement éclairé des participants a été obtenu verbalement lors de la collecte des données. La démarche suivante a été utilisée :

- d'abord, ils ont été informés de façon détaillée sur l'objectif de ces enquêtes,
- ensuite, nous leur avons indiqués qu'ils ne sont pas contraints de répondre aux questions et qu'ils pouvaient à tout moment se retirer pour n'importe quelle raison sans conséquences négatives,
- enfin, ils sont informés qu'aucune indemnisation n'est prévue pour les participants.

### Choix des indicateurs

L'analyse des effets socio-économiques en milieu rural repose sur une approche multidimensionnelle, combinant des indicateurs économiques et sociaux. Des études comme celles de Kamchie et Totouom (2025) utilisent l'emploi et le revenu des bénéficiaires pour montrer l'effet de l'acquisition d'une formation professionnelle ou de l'apprentissage sur les jeunes au Cameroun (Kamchie et Totouom, 2025). La FAO (2010) insiste sur l'importance des revenus, de l'occupation, de la productivité et de la sécurité alimentaire. Diawara et *al.* (2013) quant à lui confirme la pertinence de ces indicateurs en y ajoutant des dimensions comme le capital social et l'exode rural (Diawara et *al.* 2013). Sur la base de ces travaux et des objectifs du programme concerné, la présente étude retient les indicateurs suivants (Voir tableau 2) :

**Tableau 2** : Les indicateurs de l'étude

Variables	Indicateurs
Economiques	<ul style="list-style-type: none"> <li>- occupation professionnelle</li> <li>- revenus des bénéficiaires,</li> <li>- rendements des exploitations,</li> <li>- revenu global des ménages générés à partir des activités agricoles</li> <li>- niveau de compétences technique</li> <li>- entrepreneuriat agricole</li> </ul>
Sociaux	<ul style="list-style-type: none"> <li>- le chômage</li> <li>- l'exode rural</li> <li>- l'accès à l'alimentation des ménages</li> </ul>

### Résultats

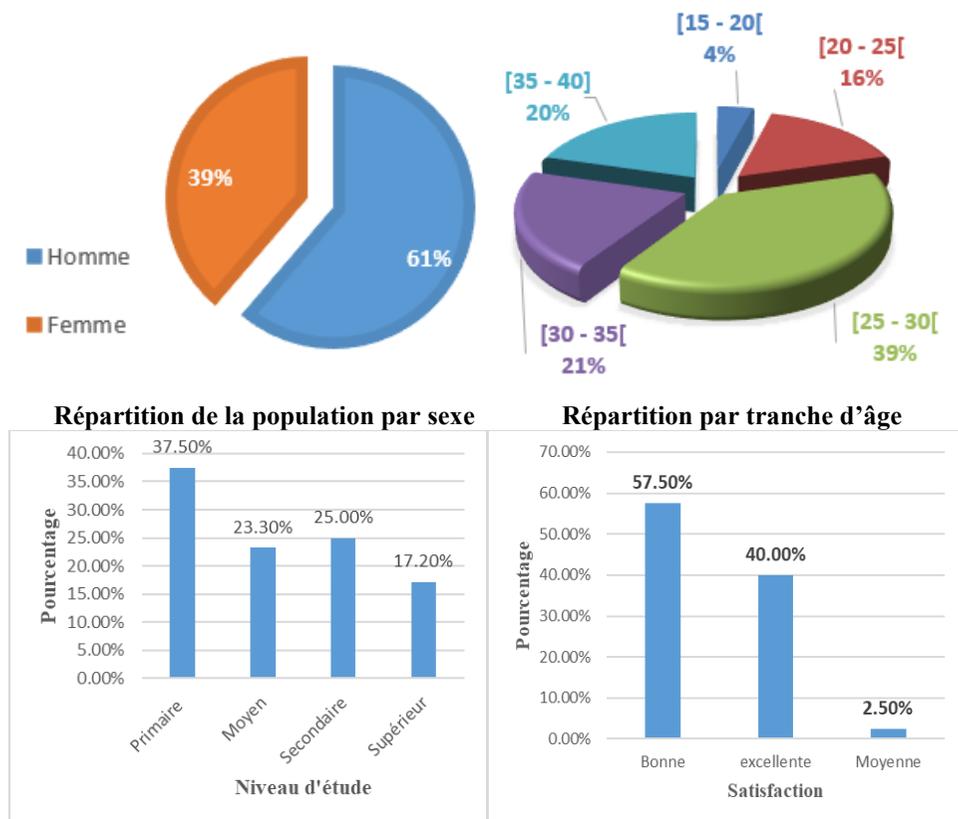
#### Caractéristiques socio-économiques des enquêtés

Les enquêtés sont majoritairement de sexe masculin (61 % hommes contre 39 % femmes) (figure 3a). Ceci s'explique par la structure sociale des zones rurales où les hommes occupent le plus souvent les fonctions de responsables agricoles. Les femmes contribuent à la stabilité financière des ménages avec des responsabilités dans la gestion des ressources familiales. La moyenne d'âge est de 28 ans et les personnes âgées entre 25 ans et 30 ans représentent 39% de la population totale, 21% sont entre 30 ans et 35 ans, 20%

entre 35 ans et 40 ans. Les deux groupes d'âge les moins représentés sont l'intervalle 20 ans à 25 ans avec 16% et 15 ans à 20 ans avec 4% (figure 3b). Ces résultats montrent que la population cible est en potentielle croissance et normalement active.

Sur le plan éducatif, 80 % des enquêtés ont fréquenté l'école française, avec des niveaux de scolarisation allant du primaire (37,5 %) au supérieur (17,2 %). Les autres niveaux sont représentés par le moyen (20,3 %) et le secondaire (25 %) (figure 3c). Par ailleurs, l'ensemble des personnes interrogées (100 %) sont affiliées à des coopératives, ce qui souligne l'importance de l'ancrage organisationnel dans le milieu rural. Concernant la satisfaction vis-à-vis de la formation, les résultats montrent un taux globalement élevé (97,5 %) (figure 3d). Plus précisément, 40 % des bénéficiaires l'ont jugée « excellente », 57,5 % « bonne » et seulement 2,5 % « moyenne ». Ces résultats traduisent une perception largement positive de la formation par la quasi-totalité des participants.

**Figure 3:** Caractéristiques sociodémographiques des enquêtés

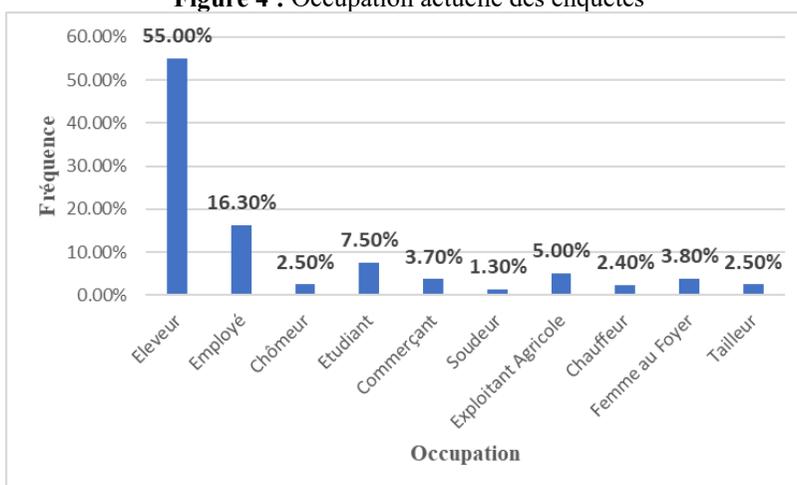


Source : Nos enquêtes, 2025

## Effets économiques

Concernant l'occupation professionnelle les enquêtes ont révélé que 92,5 % des interrogés ont accédé à une activité professionnelle suite à l'intervention, tandis que 7,5 % n'en ont pas trouvé. En effet (figure 4), plus de 55 % de la population sont des entrepreneurs parmi lesquels 61,4 % de bénéficiaires et 38,6 % de non bénéficiaires. Par ailleurs, 16,3 % occupent des postes d'employés et 7,5 % sont des étudiants. Les 18,8 % restants s'activent dans divers domaines comme l'agriculture, le commerce, la couture, le transport et la soudure, incluant également les femmes au foyer. Les personnes en situation de chômage représentent 2,5 % comme illustré par la figure ci-dessous.

Figure 4 : Occupation actuelle des enquêtés



Source : nos enquêtes, 2025

Le tableau 3 ci-dessous indique que **67,5 % des bénéficiaires** exercent une activité entrepreneuriale, contre **42,5 %** dans le groupe témoin. Ces résultats suggèrent que la formation a favorisé l'émergence d'initiatives entrepreneuriales chez les jeunes bénéficiaires, leur permettant de développer leurs propres activités, souvent en lien avec le plan d'affaires élaboré durant les sessions de formation avec l'appui des encadrants. Comme le souligne Sépényon (2022), l'intervention a ainsi permis à un grand nombre de jeunes formés de s'installer à leur propre compte. Un **dynamisme entrepreneurial notable** est observé chez ces jeunes, accompagné de la création d'emplois induits par les nouvelles opportunités économiques dans les zones d'intervention. Les principales activités concernent l'**élevage (70,3 %)** et l'**agriculture (24,3 %)**, tandis que la **transformation** demeure marginale avec seulement **5,4 %** (figure 5). Ces résultats mettent en évidence l'impact positif du programme sur le développement de l'entrepreneuriat agricole et

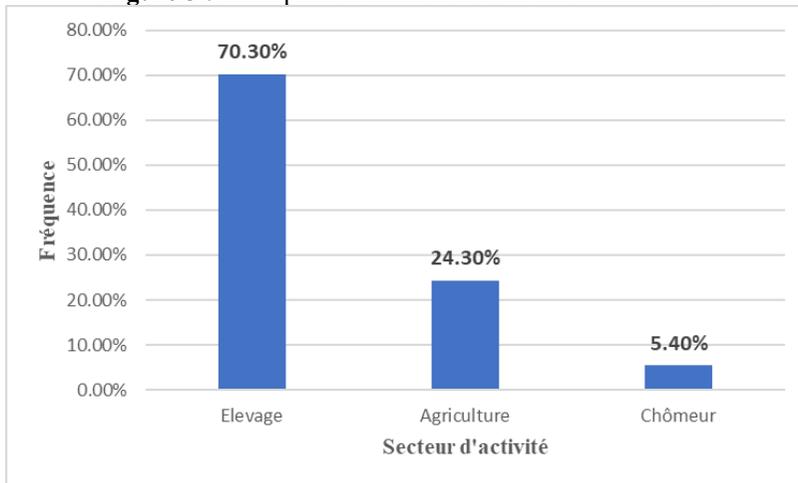
pastoral, en soutenant directement la consolidation des exploitations familiales et en contribuant au développement économique local.

**Tableau 3** : Occupation professionnelle des jeunes

	Situation actuelle					Total
	Autre à préciser	Chômeurs	Employés	Entrepreneurs	Etudiants	
<b>Témoins</b>	25 %	5 %	17,5 %	42,5 %	10 %	100 %
<b>Bénéficiaire</b>	12,5 %	00,0 %	15 %	67,5 %	5 %	100 %

Sources : Nos enquêtes, 2025

**Figure 5** : Principaux secteurs d'activité des bénéficiaires



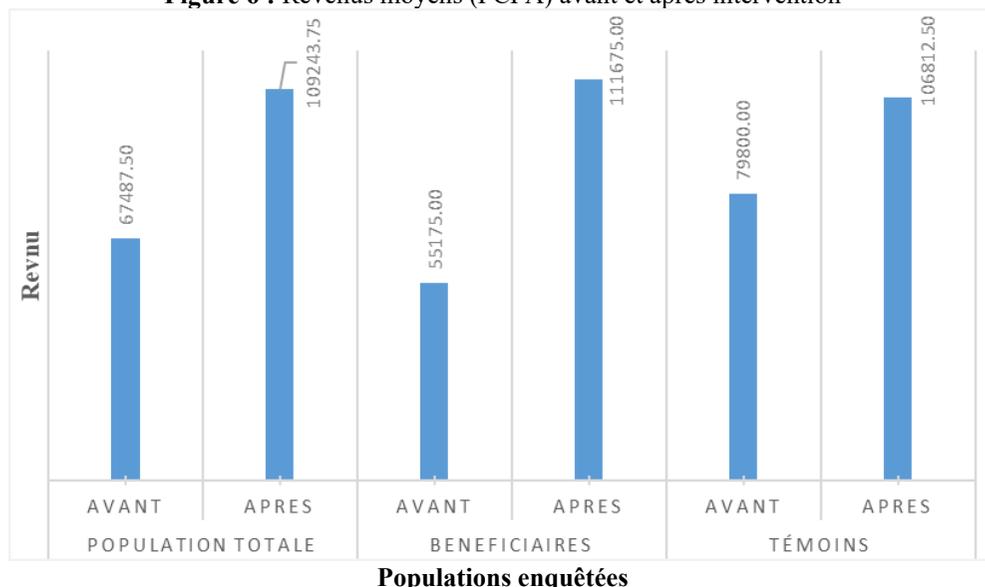
Source : Nos enquêtes, 2025

Cependant, d'après nos enquêtes et entretiens, plusieurs projets n'ont pas connu une réussite dès le premier investissement, surtout ceux qui évoluent dans l'aviculture. Certains se sont juste limités à la première activité suite à laquelle ils n'ont pas réinvesti au profit d'une autre activité, d'autres ont été atteints par des maladies et n'ont pas pu se relever. Mais d'une manière globale, nous notons un effet bénéfique de l'intervention sur les jeunes dans le cadre de leur travail surtout en entrepreneuriat.

Les interviewés ont déclaré une augmentation du revenu moyen mensuel global passant de 67 487,50 FCFA à 109 243,75 FCFA. Cette hausse est due par une augmentation des revenus de certains jeunes et une diminution de la proportion de jeunes sans revenu mensuel qui passe de 23,75 % à 8,75 %. Cette réduction est causée par une multiplication du nombre d'entrepreneurs et l'amélioration des rendements agricoles. De plus, l'amélioration des activités d'élevage constitue une source de revenu supplémentaire. L'analyse spécifique selon le groupe d'appartenance décèle une amélioration plus pointue chez les bénéficiaires. En effet, chez ces derniers, l'évolution du revenu moyen mensuel passe de 55 175 FCFA à 111 675 FCFA soit un taux

de croissance de 102,4 %. En comparaison, les témoins ont connu une évolution plus modérée de 33,85% passant de 79 800 à 106 812,5 FCFA. Cette différence du taux de croissance selon le groupe d'appartenance s'explique en partie par une diminution significative de la part des bénéficiaires sans revenu passant de 22,5 % à 2,5 % contre 25 % à 15 % pour les témoins. En plus, l'évolution des revenus mensuels est plus marquée chez un certain nombre de bénéficiaires que chez les témoins (voir figure 6).

**Figure 6 : Revenus moyens (FCFA) avant et après intervention**



**Populations enquêtées**

Source : Nos enquêtes, 2025

Le test de khi-deux effectué sur l'évolution du revenu affiche une signification asymptotique de 1,1 % inférieure au seuil de significativité (5%) alors qu'il y a une dépendance entre l'évolution des revenus et le fait d'être bénéficiaire du programme (voir tableau 4).

**Tableau 4 : Tests du Khi-deux**

	Valeur	Ddl	Signification asymptotique (bilatérale)
Khi-deux de Pearson	11,227 <sup>a</sup>	3	,011
Rapport de vraisemblance	12,945	3	,005
Nombre d'observations valides	80		

Source : Nos enquêtes, 2025

Par ailleurs, les activités de certains entrepreneurs n'ont pas encore commencé à générer des bénéfices et également le revenu minimum de 10 000 FCFA recueilli lors des enquêtes reste encore très faible par rapport au Salaire Minimum Agricole Garanti (SMAG) fixé à 58 900 FCFA en 2021 (SAV, 2025<sup>1</sup>). Néanmoins, l'analyse des informations sur les revenus a montré

<sup>1</sup> <https://senassurancevie.sn/actualite/les-salaires-au-senegal-informations-et-grille-salariale-pdf/> (Consulté le 21 aout 2025 à 17h45)

globalement que le programme de formation et d'insertion des jeunes ruraux a permis d'augmenter les revenus des bénéficiaires. Les avancées du renforcement des capacités se sont donc traduites par une augmentation des revenus selon Dietsch et Sexton (2021). Selon les auteurs les jeunes de Madagascar, du Maroc, du Bénin et du Cameroun ont constaté une augmentation de leurs revenus après les formations suivies dans les MFR. C'est seulement au Mali où la tendance positive n'a pu être établie du fait qu'il y a un problème de compilation des données sur l'évolution des revenus au cours des parcours, qui n'ont pas toujours été remplies. Ceci est en conformité avec les résultats qui informent que certaines contraintes ont été soulignées par les bénéficiaires ainsi que par les responsables de coopératives, notamment une insuffisance des financements qui occasionne parfois un échec des investissements.

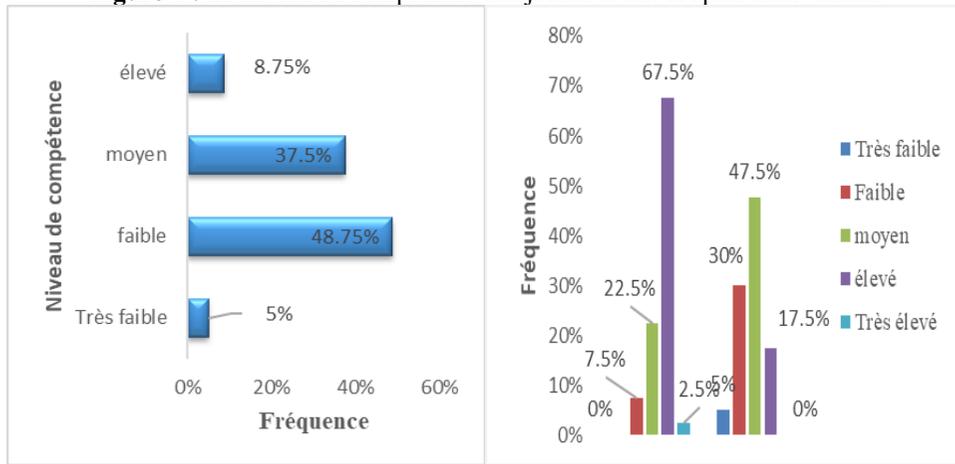
### **Effets sur les exploitations familiales**

Les exploitations sont sous la responsabilité des chefs de ménage mais la plupart des tâches sont gérées par les jeunes. Elles se spécialisent selon les zones. Les producteurs de la région de Louga se spécialisent sur les cultures d'hivernage particulièrement l'arachide, le maïs, le niébé et le mil. Ceux de Thiès, en plus des cultures d'hivernage, pratiquent du maraîchage. L'élevage est pratiqué dans toutes les exploitations, majoritairement, ils font l'aviculture et l'embouche ovine et/ou bovine.

Les jeunes acteurs dans les exploitations familiales ont développé des compétences suites aux formations suivies dans le cadre du programme. En effet, l'analyse des données sur la compétence des jeunes avant l'intervention (figure 7a) révèle que 48,75 % avaient un niveau de compétence faible, 37,5 % étaient moyens et seulement 8,75 % ont jugé leur niveau de technicité élevé. Ceci montre globalement la nécessité de la mise en œuvre de la formation en ce sens.

Après un renforcement de capacités des jeunes ruraux une comparaison est effectuée entre les bénéficiaires et les témoins. Les résultats ont montré qu'il y a une progression plus significative chez les bénéficiaires (figure 7b). En effet, 67,5 % d'entre eux ont développé leurs compétences jusqu'à atteindre le niveau élevé contre 17,5 % dans le groupe témoin. De surcroît, 2,5 % des bénéficiaires ont dépassé le niveau élevé ce qui n'existe pas chez les non-bénéficiaires. Par contre, le groupe témoin présente toujours 5 % d'individus avec un niveau de compétence très faible.

**Figure 7 : Le niveau de compétence des jeunes avant et après intervention**



Niveau de compétence technique des jeunes avant l'intervention

Source : Nos enquêtes, 2025

Niveau de compétence technique des jeunes après l'intervention

Le test de Khi-deux effectué pour l'évolution des compétences techniques des jeunes qui est l'un des objectifs majeurs des formations affiche une signification asymptotique de 0,0001 inférieure au seuil de significativité (0,01). Donc l'amélioration des compétences pratiques des jeunes dépend du fait qu'ils soient bénéficiaires du programme. Ces résultats remarquables entre les deux groupes mettent en lumière l'efficacité de l'intervention et l'effet positif qu'elle a sur les jeunes et les exploitations en termes de compétences pratiques.

**Tableau 5 : Tests de Khi-deux**

	Valeur	Ddl	Signification asymptotique (bilatérale)
Khi-deux de Pearson	23,736 <sup>a</sup>	4	,000
Rapport de vraisemblance	26,152	4	,000
Nombre d'observations valides	80		

Source : Nos enquêtes, 2025

Les compétences techniques sont des facteurs clés pour la bonne gestion d'une exploitation agricole. Elles sont améliorées dans le but d'accroître la productivité des exploitations se traduisant ainsi par une augmentation des rendements. Effectivement, cette amélioration s'est répercutée sur les rendements générés. Selon nos enquêtes, 70 % des bénéficiaires affirment avoir constaté une amélioration de la production dans leur exploitation familiale et 57,5 % d'entre eux ont commencé à mettre en œuvre les compétences techniques acquises. Concernant l'élevage, la presque totalité des enquêtés formés en élevage affirme avoir une maîtrise de la construction des poulaillers ou enclos traditionnels, des techniques d'élevage

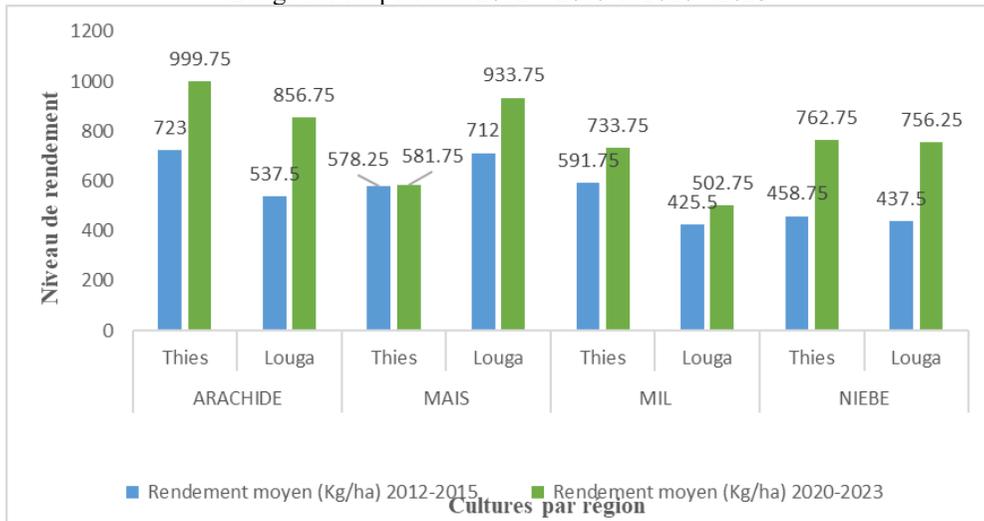
(prophylaxie, entretien et alimentation) et l'interaction entre système de culture et le système d'élevage. Selon eux, tous ces acquis aident à la bonne gestion des exploitations. On peut en déduire que sur le plan technique, le programme a eu une bonne influence sur les exploitations familiales.

Pour suivre l'évolution des rendements nous nous sommes basés sur les données de la Direction de l'Analyse de la Prévision et des Statistiques Agricoles (DAPSA) enregistrées dans les régions de Thiès et Louga sur les quatre années précédant respectivement le début et la fin du programme. Car, il a été très difficile ou impossible de collecter les informations sur les rendements. Ceci est dû au fait que les enquêtés n'ont pas enregistré les rendements obtenus.

La figure 8 présente la variation des rendements moyens des cultures d'arachide, de mil, de maïs et de niébé dans les régions de Thiès et de Louga sur les périodes de 2012-2015 et 2020-2023. Indépendamment de la spéculation et de la région, les rendements moyens ont connu une évolution grandissante dans le temps. Les cultures d'arachide et de niébé présentent les meilleures performances avec une augmentation importante de plus de 275 kg/ha entre le début et la fin du programme. Les rendements du mil ont augmenté de façon plus modérée avec une hausse de moins de 150 kg/ha. Quant au maïs, il a atteint 221 kg/ha de plus sur le rendement moyen à Louga et une stagnation dans la région de Thiès.

Les variations des rendements agricoles dans ces zones peuvent être attribuées à différents facteurs en particulier la fertilité des sols, les conditions climatiques, une amélioration des pratiques culturales et l'adoption de nouvelles technologies ou de nouvelles variétés. Ces améliorations peuvent ne pas être rattachées directement aux effets de l'intervention mais pourraient faire partie des facteurs d'influence. En effet, les pratiques agricoles comme l'utilisation de semences améliorées, l'adoption de nouvelles techniques et une meilleure gestion des ressources sont une partie des enseignements partagés lors des formations. D'après les entretiens, les 3/4 des gérants de coopératives indiquent que les jeunes ont effectué un partage de connaissances dans leurs localités respectives créant ainsi un effet multiplicateur.

**Figure 8 :** Dynamique des rendements moyens des cultures dans les régions de Thiès et Louga sur les périodes 2012 – 2015 et 2020 - 2023



Source : DAPSA, 2024

### Effets sociaux

Le programme de formation a ciblé principalement l’agriculture, l’élevage et la transformation. Les résultats de nos enquêtes révèlent que 76,25 % des enquêtés ont observé une réduction du chômage chez les jeunes ayant suivi la formation du programme. Ces résultats se traduisent par l’exercice d’une activité dans leur domaine d’intérêt. Par ailleurs, ces observations sont confirmées par des études de l’ANSD, de 2023 et de 2024, qui ont montré un taux de chômage décroissant en milieu rural depuis 2022. En effet, entre 2022 et 2024, le taux de chômage en milieu rural a connu une baisse continue passant de 25 % en 2022 (ANSD, 2023) à 24,3 % en 2023 (ANSD, 2024) pour atteindre 19,9 % en 2024 (ANSD, 2025) soit une diminution globale de 5,1% en trois ans. Le partage de connaissances par les bénéficiaires a eu un effet multiplicateur et a contribué à la réduction du taux de chômage dans ces régions. Ceci est confirmé par les 3/4 des responsables de coopérative. La réduction du chômage est l’un des résultats majeurs de ce programme. Car l’acquisition des compétences, l’appui technique et financier ont permis aux jeunes d’entreprendre en Agriculture et/ou de rejoindre leur exploitation familiale avec plus d’efficacité, contribuant ainsi au développement économique et social dans les zones rurales. Ceci est en conformité avec les travaux de Dietsch et Sexton (2021). Ils nous informent que les données sur l’augmentation du nombre de jeunes actifs montrent que les formations ont contribué à diminuer le chômage des jeunes et le nombre d’inactifs favorisant leur insertion sociale sur leur territoire. Les résultats de leurs enquêtes révèlent aussi que les services de formation des Maisons

Familiales Rurales (MFR) ont contribué à diminuer l'oisiveté des jeunes, et à réduire ses effets néfastes sur les jeunes déscolarisés comme le banditisme, la délinquance juvénile, etc.

L'exode rural est très présent dans le monde rural du fait du manque d'opportunités d'emplois dans le milieu rural et il entrave le développement local occasionnant ainsi une perte de main d'œuvre. Cependant, 73,75 % des enquêtés constatent une tendance inverse dans certaines zones. Malgré ce constat, les jeunes continuent de migrer vers les villes pour diverses raisons : les financements ne permettent pas de combler le fossé entre les revenus ruraux et urbains mais également l'accès limité aux terres dû à une expansion des exploitations minières à laquelle s'ajoute la construction d'infrastructures comme l'autoroute à péage qui participe à la réduction des terres arables dans la région de Thiès.

L'accès à une alimentation suffisante et nutritive était problématique dans ces zones. Cependant une avancée notoire a été observée sur l'amélioration de l'accès à l'alimentation grâce aux efforts fournis par les jeunes dans la production et l'élevage. En effet 95 % des bénéficiaires affirment avoir une amélioration de l'accès à l'alimentation au sein de leur ménage. Ces résultats sont confirmés par les informations collectées lors des entretiens avec les responsables des coopératives. Ils affirment à l'unanimité avoir une meilleure disponibilité de certains aliments issus des activités des jeunes dans les villages. Cette amélioration est le résultat des efforts fournis pour renforcer les aptitudes productives locales. Les jeunes ont participé activement à la satisfaction des besoins alimentaires de leurs villages montrant ainsi l'effet positif de l'intervention par rapport à l'accès à l'alimentation des ménages dans l'objectif d'atteindre la sécurité alimentaire dans les zones rurales.

## **Conclusion**

Cet article s'est intéressé à l'analyse des effets socio-économiques du programme de formation et d'insertion des jeunes ruraux sur les conditions de vie des bénéficiaires ainsi que sur la performance de leurs exploitations familiales dans les régions de Thiès et de Louga. Les résultats obtenus indiquent que la majorité des jeunes bénéficiaires se sont engagés dans l'entrepreneuriat à l'issue de leur participation au programme, lequel a contribué de manière significative au renforcement de leurs compétences professionnelles et à leur accompagnement, notamment à travers des appuis financiers, en numéraire ou en nature.

L'examen des différentes variables mobilisées dans le cadre de l'étude met en évidence un effet globalement positif de l'intervention sur les conditions socio-économiques des jeunes et sur la performance de leurs exploitations. La comparaison des taux de croissance des revenus mensuels

moyens entre 2016 et 2024 révèle en effet une amélioration plus marquée chez les bénéficiaires que chez le groupe témoin. Cette progression s'explique principalement par la diminution du nombre de jeunes inactifs et l'accroissement du nombre d'entrepreneurs. Par ailleurs, les résultats du test du chi-deux confirment que cette amélioration des revenus est statistiquement liée à la mise en œuvre du programme.

Concernant les exploitations familiales, les analyses statistiques montrent que l'évolution des compétences techniques des jeunes dépend étroitement de leur participation au programme. Cette amélioration des compétences s'est traduite par une hausse de la productivité agricole, perceptible à travers l'augmentation des rendements.

Sur le plan social, l'étude met également en évidence une amélioration de l'accès à l'alimentation au sein des ménages bénéficiaires. L'appui technique et financier octroyé aux jeunes a permis de réduire le chômage, même si celui-ci demeure difficile à résorber complètement. Enfin, bien que des progrès aient été constatés en matière de réduction de l'exode rural, ce phénomène persiste dans les zones étudiées et continue de constituer un facteur limitant la disponibilité de la main-d'œuvre agricole.

#### Recommandations

Au regard des résultats obtenus, les recommandations présentées ci-après, d'ordre institutionnel et opérationnel, visent à renforcer l'efficacité et la durabilité du programme. Elles ont pour objectif de consolider les acquis, de remédier aux insuffisances constatées et d'accroître l'impact socio-économique des interventions en faveur des jeunes ruraux.

#### Au niveau institutionnel

- **Renforcer la pérennité du programme** en inscrivant la formation et l'insertion des jeunes dans une politique publique durable, avec des mécanismes de suivi et d'évaluation continue pour mesurer les impacts à long terme.
- **Améliorer la coordination interinstitutionnelle** entre les ministères, les collectivités territoriales et les organismes de formation professionnelle afin d'assurer une meilleure cohérence des interventions dans les zones rurales.
- **Accroître les ressources financières et matérielles allouées** aux programmes d'insertion afin de garantir leur extension à d'autres localités et de toucher un plus grand nombre de jeunes.
- **Institutionnaliser des partenariats public-privé** permettant de relier la formation professionnelle aux besoins réels du marché du travail et de l'économie locale.

### **Au niveau opérationnel**

- **Adapter les modules de formation** aux spécificités des filières agricoles locales, en intégrant des volets pratiques sur la gestion d'entreprise, l'innovation technologique et la durabilité environnementale.
- **Renforcer le dispositif d'accompagnement post-formation**, notamment à travers des cellules locales de conseil, de suivi technique et de mentorat pour les jeunes entrepreneurs.
- **Faciliter l'accès au financement**, en mettant en place des mécanismes de microcrédit adaptés aux jeunes ruraux et en simplifiant les procédures d'accès aux subventions.
- **Promouvoir la mutualisation des ressources**, par la création de coopératives ou de groupements d'intérêt économique (GIE) permettant aux jeunes d'améliorer leur pouvoir de négociation et leur accès aux marchés.
- **Encourager la digitalisation du suivi**, à travers la mise en place de plateformes numériques permettant de collecter, centraliser et actualiser les données relatives à l'évolution des bénéficiaires.

**Conflit d'intérêts :** Les auteurs n'ont signalé aucun conflit d'intérêts.

**Disponibilité des données :** Toutes les données sont incluses dans le contenu de l'article.

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## **Systèmes de Mesure de la Performance dans les Pays en Développement : La Gouvernance Prophylactique comme Réponse au Découplage Institutionnel**

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### **Résumé**

La modernisation du secteur public dans les Pays en Voie de Développement (PVD) par les Systèmes de Mesure de la Performance (SMP) amplifie le risque de découplage institutionnel (DiMaggio & Powell, 1983) en raison des défis structurels locaux. Cet article construit un cadre théorique intégrateur pour adapter les SMP aux spécificités des PVD. L'étude, de nature qualitative, inductive et comparative (Yin, 2018; Yin, 1994), s'appuie sur une revue de littérature systématique (collecte via Scopus/WoS, analyse par confrontation critique des travaux). Les résultats confirment l'efficacité contingente des SMP (Chenhall, 2003; Henri, 2006) et identifient la cause critique du découplage dans la gestion non-prophylactique des tensions de gouvernance (Mazouz et al., 2012; Khenniche & Henriot, 2021). Nous proposons le Modèle Hybride et Contextuel (MHCP/SMP-PVD), faisant de la Gouvernance Prophylactique le pilier central pour assurer l'appropriation locale des SMP.

**Mots-clés :** Performance publique, Systèmes de mesure de la performance (SMP), Pays en voie de développement (PVD), Gouvernance Prophylactique,

Découplage institutionnel, Maroc

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## **Performance Measurement Systems in Developing Countries: Prophylactic Governance as a Response to Institutional Decoupling**

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### **Abstract**

The modernization of the public sector in Developing Countries (DCs) through Performance Measurement Systems (PMS) increases the risk of institutional decoupling (DiMaggio & Powell, 1983) due to context-specific structural constraints. This article proposes an integrative theoretical framework aimed at adapting PMS to the specificities of DCs. The study, which is qualitative, inductive, and comparative in nature (Yin, 1994; Yin, 2018), is based on a systematic literature review (data collected through Scopus and Web of Science, and analyzed via critical comparative assessment of existing works). The findings confirm the contingent effectiveness of PMS (Chenhall, 2003; Henri, 2006) and identify the main source of decoupling in the non-prophylactic management of governance tensions (Mazouz et al., 2012; Khenniche & Henriot, 2021). We introduce the Hybrid and Contextual Model (HCMP/PMS-DC), positioning Prophylactic Governance as the central pillar to ensure the local appropriation of PMS.

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**Keywords:** Public performance; Performance Measurement Systems (PMS); Developing Countries (DCs); Prophylactic Governance; Institutional Decoupling; Morocco

### **Introduction**

#### **Contexte et Problématique**

La mesure de la performance s'est imposée comme un paradigme central dans la modernisation des administrations publiques, portée par le courant du Nouveau Management Public (NMP) (Hood, 1991). Cette quête d'optimisation est critique pour les Pays en Voie de Développement (PVD). Néanmoins, la transposition des Systèmes de Mesure de la Performance

(SMP), incluant la Gestion Axée sur les Résultats (GAR) et le Balanced Scorecard (BSC) (Kaplan & Norton, 1992), rencontre des obstacles structurels spécifiques aux PVD. Ces contraintes comprennent la faiblesse chronique des systèmes d'information (Tichout & Cherqaoui, 2025), une culture administrative peu orientée vers les résultats (Tenakwah et al., 2023), et l'instabilité institutionnelle.

Ces défis engendrent un risque majeur : celui du découplage institutionnel (DiMaggio & Powell, 1983). L'adoption formelle des SMP est souvent un acte de conformité rituelle pour obtenir la légitimité externe (Polzer et al., 2023), sans transformer les pratiques réelles de pilotage interne (Hairout, 2023). Face à ces enjeux de transférabilité, la problématique centrale de cet article est de savoir comment les systèmes de mesure de la performance peuvent être efficacement adaptés et mis en œuvre dans les entités publiques des PVD, en tenant compte des facteurs contingents spécifiques et des enjeux de gouvernance locale.

### **Contribution Scientifique**

La Gouvernance Prophylactique La littérature a largement documenté l'échec du transfert des SMP dans les PVD en se basant sur la théorie de la contingence (Chenhall, 2003) et le manque de culture de performance (Henri, 2006). La principale contribution de cet article est de dépasser le seul cadre de contingence pour affirmer que la réussite d'un SMP est avant tout une affaire de gestion du sens et de la légitimité interne. Le vide scientifique comblé réside dans la compréhension des mécanismes micro-politiques qui transforment le SMP d'outil stratégique en simple artéfact de conformité.

Nous proposons que la clé pour surmonter le découplage est l'adoption d'une approche de gestion prophylactique des tensions de gouvernance (Mazouz et al., 2012; Khenniche & Henriot, 2021). Cette gestion prophylactique est le processus managérial actif qui vise à prévenir la dénaturation des objectifs initiaux (la "perte de sens"). Cet article se positionne ainsi comme une avancée théorique en intégrant directement la perte de sens de l'action publique dans la modélisation des SMP en contexte PVD.

### **Méthodologie**

L'étude est fondée sur une revue de littérature systématique narrative et comparative. L'approche adoptée est qualitative, inductive et comparative.

### **Justification de l'approche**

L'objectif principal de cette recherche est intégrateur et constructif: il ne s'agit pas de réaliser un bilan quantitatif exhaustif, mais de synthétiser de manière critique les concepts, d'identifier les lacunes théoriques (le gap de la gouvernance prophylactique), et de construire un cadre conceptuel hybride

(MHCP/SMP-PVD) adapté aux PVD. Cette méthodologie qualitative permet d'évaluer la transférabilité des modèles et d'assurer la rigueur de l'analyse thématique pour identifier les facteurs contingents.

### **Population et techniques de collecte des données**

Le corpus documentaire constitue la "population" de cette recherche qualitative.

- Période d'Étude et Bases de Données : La recherche a couvert la littérature fondatrice (depuis l'émergence du NMP et du BSC, début des années 1990) jusqu'aux travaux de 2025. Les bases de données académiques consultées incluent Scopus et Web of Science (pour la littérature internationale) ainsi que Cairn.info (pour les contributions francophones).
- Corpus de Références : Le corpus final s'est appuyé sur 49 références scientifiques de base, augmentées par des contributions académiques récentes jugées pertinentes. Une attention particulière a été portée aux études empiriques spécifiques au contexte des PVD, notamment les Établissements et Entreprises Publics Marocains (EPPM).

### **Méthode d'analyse des données**

L'analyse a procédé par une confrontation critique des travaux. La démarche a consisté à examiner les facteurs modérateurs du succès validés empiriquement dans les PVD (Hairout, 2023) et à modéliser les enjeux de gouvernance (Khenniche & Henriot, 2021) menant à l'élaboration du modèle hybride. L'analyse s'est articulée autour de la chaîne de valeur publique (Ata & Carassus, 2023) pour évaluer l'efficacité réelle (outcomes).

### **Résultats**

#### **Proposition du Modèle et des Liens Causaux**

Les résultats de la revue de littérature systématique se matérialisent par l'élaboration du Modèle Hybride et Contextuel de Performance (MHCP/SMP-PVD) et de quatre propositions théoriques clés.

#### **Le Modèle Hybride et Contextuel de Performance (MHCP/SMP-PVD)**

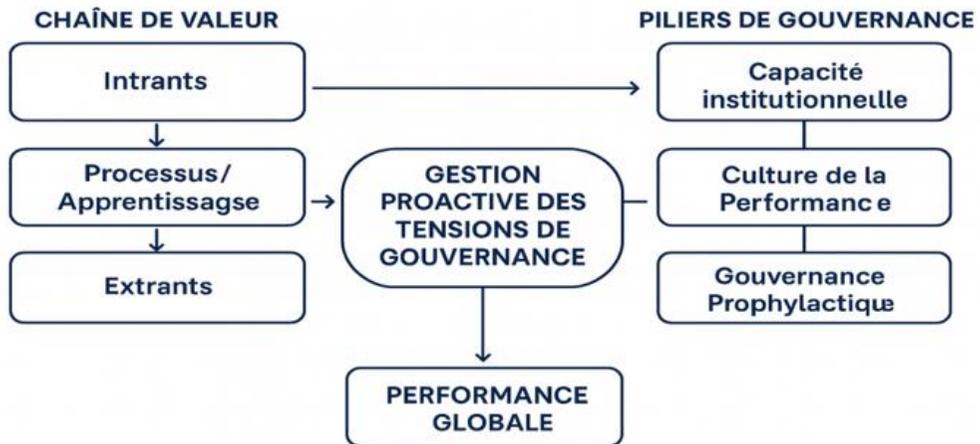
Le MHCP est un cadre d'hypothèses centré sur la gestion des conditions de succès spécifiques aux PVD. Il combine la rigueur de la chaîne de valeur publique (GAR) et la multidimensionnalité du Balanced Scorecard (BSC) adapté, en introduisant la Gouvernance Prophylactique comme pilier central de régulation des tensions et de prévention du découplage institutionnel.

Le modèle formalise que la Performance Globale est fonction de l'alignement stratégique des SMP (BSC adapté/GAR). Cependant, cet

alignement n'est converti en résultats réels (*outcomes*) que s'il est soutenu et régulé par quatre piliers contextuels critiques : la Culture de la Performance, la Décentralisation, la Fiabilité des Systèmes d'Information, et surtout la Gouvernance Prophylactique.

- Structure Intégrée : Le modèle articule la chaîne classique (Intrants → Processus → Extrants → Effets/Résultats.) en intégrant les perspectives du BSC dans chaque étape. Par exemple, la perspective Processus Internes du BSC est intégrée à l'étape Processus, et la Performance Globale (Stiglitz et al., 2009) est mesurée au niveau des Effets/Résultats.
- Pilier Central : La Gouvernance Prophylactique est la condition nécessaire pour éviter la perte de sens et le découplage institutionnel.

**Figure 1** : Modèle Hybride et Contextuel de Performance (MHCP/SMP-PVD) :  
Représentation Structurelle



Source : Elaboré par les auteurs

La figure 1 illustre la chaîne de valeur conditionnée par les Piliers de gouvernance, notamment la gestion proactive des tensions. Le Modèle Hybride et Contextuel de Performance (MHCP/SMP-PVD), qui articule la chaîne classique de la performance publique (intrants–processus–extrants–effets) avec des facteurs modérateurs propres aux PVD, notamment la gouvernance prophylactique, la culture de la performance et la capacité institutionnelle. Ce modèle met en évidence un système de performance fondé sur l'apprentissage organisationnel et l'ajustement stratégique permanent. L'intégration des perspectives du *Balanced Scorecard* adapté dans chaque étape de la Chaîne de Valeur (GAR) est conditionnée par les Piliers Contextuels. La Gouvernance Prophylactique est la condition nécessaire pour éviter la perte de sens et le découplage institutionnel.

Il met en lumière la gestion proactive des tensions de gouvernance comme levier central pour renforcer la performance globale et la création de valeur publique dans un contexte institutionnel hybride.

Cette figure approfondit la logique du MHCP en articulant la chaîne de valeur publique et les facteurs contextuels de gouvernance. Elle met en évidence deux dynamiques :

- Gouvernance prophylactique : prévention des dérives structurelles et réduction du découplage.
- Gouvernance participative : renforcement de l'appropriation et de la durabilité de la performance

### Propositions de recherche (Liens causaux)

Quatre propositions (P) résument les mécanismes d'influence identifiés par la revue critique de la littérature :

**Taleau 1** : Légende des Liens Causaux (Rôles de Modération/Médiation)

Facteur de Gouvernance/Contingence	Relation Analytique Clé	Proposition (P)	Rôle dans le MHCP
Gouvernance Prophylactique	Négativement le risque de Découplage Institutionnel.	P2	Pilier central (Régulation des Tensions de Sens).
Culture de la Performance	Modère Positivement la relation SMP $\rightarrow$ Outcomes.	P1	Assure l'usage interactif et l'Apprentissage.
Décentralisation Structurelle	Modère Positivement l'équilibre des perspectives non financières. Conditionne	P3	Catalyseur contre la dominance financière.
Fiabilité des SI/Capacité	Directement la capacité à mesurer l'efficacité (Outcomes).	P4	Prérequis technique et informationnel.

Source : Elaboré par les auteurs

Ce tableau structurel est essentiel pour clarifier le mécanisme de contingence défendu par le MHCP. Il montre que, si les propositions P1, P3 et P4 sont des prérequis structurels et comportementaux classiques, seule la Proposition P2 (Gouvernance Prophylactique) adresse la cause critique du découplage : la non-gestion des tensions. L'efficacité des SMP dépend de la capacité des gestionnaires à utiliser ces systèmes de manière interactive (P1) dans une structure adaptée (P3), mais leur pertinence (non-découplage) repose sur P2.

Les résultats théoriques sont les suivants :

- P1 : L'utilisation des SMP comme outils de contrôle interactif (Speklé & Verbeeten, 2013) est positivement médiatisée par l'existence d'une culture organisationnelle de la performance (Henri, 2006; Hairout, 2023), facteur le plus déterminant de l'efficacité des SMP dans les PVD.
- P2 : L'intégration explicite d'un mécanisme de gestion prophylactique des tensions de gouvernance (Mazouz et al., 2012; Khenniche & Henriot, 2021) réduit significativement la probabilité de découplage institutionnel des SMP au sein des entités publiques des PVD.
- P3 : La décentralisation de la structure organisationnelle modère positivement la relation entre la mise en œuvre du SMP et l'équilibre des perspectives non financières (Client/Usager, Apprentissage), permettant de dépasser la dominance du contrôle financier classique dans les PVD.
- P4 : La capacité à mesurer l'efficacité réelle (*outcomes*) et la Performance Globale (Stiglitz et al., 2009) est positivement conditionnée par la fiabilité des Systèmes d'Information (SI) (Tichout & Cherqaoui, 2025).

## **Discussion**

### **Analyse, Confrontation Théorique et Implication du Découplage**

Cette section relie les propositions théoriques (Résultats) à la critique contextualisée de la littérature (Méthodologie) pour défendre la Gouvernance Prophylactique comme le facteur critique de succès des SMP en PVD.

**La Persistance du Découplage Institutionnel :** Le phénomène de découplage (DiMaggio & Powell, 1983) est une menace constante, amplifiée dans les PVD. L'adoption formelle des SMP sert la légitimité externe, mais le SMP devient souvent un instrument de contrôle diagnostique stérile (Kaplan, 2009). La revue de littérature a permis de confirmer la persistance de cette myopie managériale, où, malgré l'adoption de la GAR (LOF n°130-13 au Maroc), l'approche financière classique demeure dominante chez les EEPM marocains (Hairout, 2023; Ibrahimy & Naym, 2018). Ce déséquilibre est renforcé par la politisation des indicateurs (Guillaume, 2009), où la pression pour les résultats quantitatifs (efficacité) mène au "jeu" stratégique, au détriment des valeurs publiques (Badil et al., 2025).

**Le Rôle Central de la Gouvernance Prophylactique (P2) :** L'inefficacité des SMP est due à la non-gestion des tensions de gouvernance, notamment les tensions éthiques entre le Politique (le sens de l'action) et l'Objectivante (les résultats). L'analyse critique soutient que l'inefficacité des SMP s'explique fondamentalement par la perte de sens de l'action publique (Khenniche & Henriot, 2021), causée par la myopie des acteurs. Pour éviter

cette dérive, il est impératif, comme le stipule la Proposition 2 (P2), de mettre en place une gestion prophylactique de ces tensions (Mazouz et al., 2012). Ce processus managérial actif régule les tensions et réduit significativement la probabilité de découplage institutionnel.

**Les Conditions de Succès Contextuelles (P1, P3, P4)** L'efficacité des SMP est hautement contingente (Chenhall, 2003; Fisher, 1998). Les Propositions 1, 3 et 4, issues de la confrontation de la littérature, soulignent que la Gouvernance Prophylactique doit être accompagnée de prérequis structurels et comportementaux pour être efficace.

La Culture de la Performance (P1) institutionnalisée est le facteur le plus déterminant pour un SMP équilibré (Hairout, 2023).

- La Décentralisation Structurelle (P3) modère positivement l'équilibre des perspectives non financières, catalysant l'apprentissage et l'orientation client.
- Les Défis Informationnels (P4) et la faiblesse des SI dans les PVD (Tichout & Cherqaoui, 2025) modèrent négativement l'utilisation stratégique des informations et la capacité à mesurer l'efficacité réelle.

**Comparaison des Modèles et Apport du MHCP/SMP-PVD :** Cette sous-section présente la synthèse comparative qui met en lumière la contribution distincte du Modèle Hybride et Contextuel. L'approche qualitative et comparative a permis de positionner le MHCP face aux cadres existants (GAR, BSC, Contingence).

Le Tableau 2 ci-dessous synthétise les forces et les limites des approches courantes appliquées aux PVD et souligne comment notre modèle comble les lacunes identifiées.

**Tableau 2 :** Comparaison des Modèles de Performance et du MHCP/SMP-PVD

Modèle/Approche	Dimensions Clés	Application en PVD (Exemple Maroc)	Facteurs de Limite / Écart Critique	Apport du MHCP/SMP-PVD
GAR / Chaîne de Valeur (Mazouz & Leclerc, 2008)	Intrants, Extrants, Effets ( <i>Outcomes</i> )	Cadre théorique pour la LOF n°130-13.	Difficulté à remonter les effets finaux (efficacité).	Fournit la structure logique (Alignement Stratégique).
BSC (Kaplan & Norton, 1992)	Financier, Client, Processus, Apprentissage	Dominance de la perspective financière chez les EEPM (Hairout, 2023).	Forte dominance financière, absence d'indicateurs d'apprentissage.	Fournit la multidimensionnalité (BSC Adapté).
Théorie de la Contingence (Chenhall, 2003)	Structure, Incertitude, Culture	Culture et décentralisation sont déterminantes de l'équilibre SMP.	N'explique pas pourquoi le découplage persiste malgré la bonne structure.	Fournit les Piliers Contextuels (Culture, Décentralisation).

MHCP/SMP-PVD (Proposé)	Alignement GAR/BSC + Gouvernance Prophylactique	S'appuie sur le contexte EPPM/DGAPR comme laboratoire de contingence.	Pilier central : Gestion proactive des tensions pour réduire le découplage (P2).
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Source : Elaboré par les auteurs

Le Tableau 2 met en évidence le vide que le MHCP/SMP-PVD vise à combler. Alors que la GAR fournit la logique de la chaîne de valeur publique et que le BSC enrichit cette structure par sa multidimensionnalité, ces modèles sont intrinsèquement faibles face au découplage dans le contexte PVD. La Théorie de la Contingence explique pourquoi les PVD ont des difficultés (culture, structure) mais n'offre pas de solution de gestion proactive face à la dérive du sens. L'apport fondamental du MHCP est donc l'intégration de la Gouvernance Prophylactique comme pilier central, une solution managériale au problème critique du découplage institutionnel.

## Conclusion et Perspectives de recherche

### 1. Synthèse et Implications Théoriques

La mesure de la performance dans le secteur public des PVD est un exercice complexe entre l'idéal de la rationalité managériale (BSC, GAR) et les réalités socio-institutionnelles locales. L'analyse a confirmé que, malgré les réformes inspirées du NMP, la pratique tend à se replier sur le contrôle financier (Hairout, 2023), démontrant un risque élevé de découplage (Modell, 2009). Le succès est avant tout contingent, dépendant fondamentalement de l'institutionnalisation d'une culture de performance et de l'adoption de structures décentralisées.

### 2. Perspectives de Recherche

Le Modèle Hybride SMP-PVD proposé exige l'intégration de la Gouvernance Prophylactique (Mazouz et al., 2012) pour gérer les tensions inhérentes à la nature multidimensionnelle de l'action publique (Khenniche & Henriot, 2021). Ce cadre assure l'appropriation locale, la co-construction de la légitimité et l'intégration des exigences de Performance Globale (Stiglitz et al., 2009), essentielles pour l'efficacité des SMP en contexte PVD.

L'évolution des systèmes d'évaluation de la performance est un processus ininterrompu, façonné par les progrès technologiques, les transformations sociales et les réglementations récentes (El Fkihi et al., 2024). Il est également crucial de concevoir des méthodes solides pour juger de l'efficacité de divers systèmes d'évaluation et déterminer les meilleures méthodes (El Fkihi et al., 2024).

Plusieurs avenues de recherche sont jugées cruciales pour valider le cadre analytique MHCP proposé :

- Gestion des Tensions et Appropriation (P2) : Poursuivre les études qualitatives et les recherches-interventions pour analyser l'appropriation des SMP et la gestion des tensions de gouvernance au niveau local (Mnguni, 2024; Anh et al., 2022).
- Rôle des TIC et de l'IA (P4) : Examiner comment les technologies émergentes peuvent pallier les problèmes de fiabilité des SI dans les PVD (Tichout & Cherqaoui, 2025).
- Performance et Valeurs Publiques : Développer des cadres d'indicateurs qualitatifs, comme suggéré pour les universités marocaines (Badil et al., 2025), pour mieux intégrer les valeurs publiques non quantifiables et quantifiables et examiner en profondeur les relations entre la mesure de la performance durable et la génération de valeur sur le long terme (El Fkihi et al., 2024).

**Conflit d'intérêts :** Les auteurs n'ont signalé aucun conflit d'intérêts.

**Disponibilité des données :** Toutes les données sont incluses dans le contenu de l'article.

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