DEVELOPING INTERNATIONAL PUBLISHING CAPACITY FOR PRIVATE UNIVERSITIES IN VIETNAM:

OPTIMIZE THE MANAGEMENT SYSTEM, QUALITY ASSURANCE AND RESEARCH INTEGRATION STRATEGY IN THE DIGITAL TRANSFORMATION ERA

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In the context of global higher education shifting strongly towards digitalization and increasing academic competition, international publishing capacity has become an important indicator reflecting the quality of research and the level of integration of higher education institutions. However, the non-public university sector in Vietnam still faces many challenges in terms of resources, digital infrastructure, research culture and quality assurance systems, leading to limited international publishing capacity and lack of sustainability. This article aims to analyze in depth the core factors affecting the publishing capacity of non-public universities through an integrated approach framework consisting of three pillars:

(1) Research governance and operating mechanism;
(2) Quality assurance and academic integrity;
(3) Digital transformation strategy and international research integration.

A mixed research method was used, combining large-scale surveys, expert interviews, SEM/PLS structural model analysis and comparison with the experiences of countries in the region. The results show that international publishing capacity strongly depends on the level of optimization of the governance system and the effectiveness of the quality assurance mechanism, while digital transformation and international cooperation play a catalytic role in increasing the efficiency and quality of publications. Based on these findings, the paper proposes a model of "3 pillars – 9 components – 27 solutions" to comprehensively upgrade the research ecosystem of non-public universities in the period 2025–2035. Policy implications and implementation strategies are presented to support Vietnamese private universities to gradually integrate, improve their publishing capacity and contribute more effectively to global scientific knowledge.

Keywords: *International Publishing Capacity; Non-Public Higher Education; Digital Research Governance; Quality Assurance in Research; Digital Transformation in Academia; Global Research Integration; Scholarly Ecosystem Optimization; Research Performance Enhancement.*

1. Introduction

1.1. Global Context

1.1.1. International Publishing Trends in Higher Education

In the context of the increasing globalization of knowledge, international publishing has become central to the academic ecosystem and a crucial measure for evaluating the competitiveness of higher education institutions. The expansion of prestigious academic indexes such as Web of Science, Scopus, and scientific impact assessment systems has created an academic environment where each publication is not only a research product but also a testament to the knowledge management capacity, academic networking strength, and international stature of each university.

Along with this, the open-access publishing model, the rise of interdisciplinary journals, and the trend of multi-center collaborative research have changed the nature of knowledge production, shifting from a closed model to an open, interconnected ecosystem. Universities must increasingly proactively participate in the global knowledge network through research collaboration, international co-authorship, building cross-border research teams, and fully exploiting global scientific data sources.

Furthermore, international publication is becoming a decisive component in university ranking strategies, with rankings such as THE, QS, and ARWU allocating significant weight to evaluating publication productivity and citations. This is causing global universities to shift from a mindset of "encouraging research" to “optimizing research capacity" through investment in scientific human resources, forming strong research teams, standardizing scientific governance processes, and increasing mechanisms to support high-quality publications.

1.1.2. The Strategic Role of Digital Transformation in the Research-Publication Cycle

The development of digital technology has created a structural turning point in the entire research-publication cycle, from hypothesis formation, data collection, results analysis, to data transparency and knowledge dissemination. Digital transformation is not just a supporting tool but has become a strategic foundation determining the competitiveness of higher education institutions in the 21st century.

The emergence of artificial intelligence (AI), machine learning, large language models (LLMs), big data analytics, and next-generation digital libraries has helped researchers optimize every stage in the knowledge production cycle.

-Data is digitized and stored on open platforms, allowing instant access to hundreds of thousands of scientific documents globally.

-AI supports the analysis of complex data, improving the accuracy of research models.

-Automated citation, plagiarism detection, and manuscript quality assessment tools help ensure scientific ethical standards.

-Integrated research management systems (RIMS, CRIS, ORCID, Publons, etc.) create a comprehensive digital space where all research activities are connected, managed, and standardized according to international practices.

In particular, the peer review process has been enhanced in transparency thanks to digital platforms, shortening processing time, increasing the quality of peer reviews, and creating a more transparent academic environment. In this trend, technological proficiency has become one of the important criteria constituting the research capacity of faculty members, determining the ability of universities to integrate into the global scientific community.

1.1.3. Global Academic Competitive Pressure and the Need for Integration

The globalization of knowledge not only opens up opportunities but also creates unprecedented competitive pressure on higher education systems. Universities around the world are racing to improve research productivity, attract talent, and expand international cooperation, aiming to increase their standing in academic rankings and establish their brand within the global academic ecosystem.

In this environment, requirements for standardized research quality, adherence to scientific ethics, data sharing, transparency of funding information, and enhanced open access have become mandatory standards. This necessitates universities to build modern research governance systems, design effective incentive mechanisms, and develop human resources capable of international integration.

The pressure stems not only from international ranking systems but also from the clear stratification among university groups: top research universities have a significant advantage in resources, while those in the middle and lower tiers must work much harder to close the gap. This creates a fiercely competitive environment where factors such as internationalization strategies, cross-border research collaboration, the ability to attract international funding, and interdisciplinary scientific strengths become decisive for survival and development.

For developing countries, the need for integration becomes even more urgent as they must simultaneously improve the quality of education, increase research capacity, and participate in the

global knowledge network under conditions of limited resources. However, this also presents a window of strategic opportunity: by leveraging digital transformation, developing international collaborations, and fostering a research culture, universities can completely reposition themselves on the global academic map and contribute more to human knowledge.

1.2. The Vietnamese Context and the Position of Private Universities

1.2.1. System Characteristics and Resource Nature of Private Higher Education in Vietnam

The private university system in Vietnam was formed as an inevitable result of the process of educational socialization, aiming to meet the increasing training needs in the context of a young population, high urbanization rates, and the requirements of economic modernization. However, the development of the private sector has many unique characteristics, reflecting both the historical context of the Vietnamese higher education system and the objective limitations in resources and governance mechanisms.

First of all, private universities have a very high degree of differentiation in governance models, ranging from non-profit private universities, for-profit private universities, universities with corporate investors, to universities founded by social organizations. This diversity creates flexibility in development strategies but also leads to a lack of uniformity in academic priorities, as some universities focus on training to meet market demands rather than strengthening research capabilities.

Furthermore, limited financial resources are a systemic bottleneck. Without direct state budget investment, universities rely on tuition fees and service revenue. This directly impacts their ability to make long-term investments in science and technology, which require significant funding, have slow payback periods, and carry high risks. Consequently, most universities choose an application-oriented university model, focusing on professions that meet labor market needs, resulting in research not becoming a strategic pillar. Nevertheless, private universities still play a crucial role in expanding access to higher education and serve as a testing ground for new university governance models - autonomy, flexibility, business connections, and rapid internationalization. This is a fundamental potential, but it will only be effectively realized when linked to a systematic strategy for developing research and publishing capabilities.

1.2.2. The Gap in Research and Publishing Capabilities Compared to Public Institutions

The gap between public and private universities in Vietnam is most evident in research capacity and their presence on the international academic map. While key public universities possess superior advantages in resources, highly qualified faculty, and research facilities, private universities are still in the process of building the foundation for scientific activities.

Recent data shows:

•The international publication productivity of private universities is often significantly lower, both in terms of the number and quality of journals.

•The proportion of faculty members participating in regular research is limited; many faculty members are more focused on "pure teaching" than on being "lecturers and researchers".

•A significant number of strong research groups, which are the core driving force for international publications, have not yet been formed.

•Interdisciplinary research activities, international cooperation, and participation in foreign-funded projects remain localized and unstable. This gap is not only a matter of resources, but more fundamentally, a problem of academic culture and incentive mechanisms. In many private universities, faculty evaluation still prioritizes teaching hours and is less linked to research tasks, making the motivation for international publications weak. Compared to the public sector, which receives strong support from the State, private universities have to build most academic mechanisms from scratch - from publication support policies, research funds, academic mentoring systems, to research ethics standards and scientific data management systems. Therefore, narrowing the gap requires a comprehensive strategy, not just increased financial investment. This is a challenge but also an opportunity for private universities to restructure towards international standards.

1.2.3. Challenges in Human Resources, Finance, Research Culture, and Digital Infrastructure

(a)Challenges in Scientific Human Resources

Faculty at private universities often lacks a sufficient percentage of PhDs, leading scientists, and scholars with extensive international collaboration networks. This directly impacts their ability to supervise research, lead research groups, and publish internationally. Furthermore, unattractive salary and benefits packages make it difficult for private institutions to attract and retain high-quality personnel.

(b)Challenges in Finance and Research Investment Mechanisms

Due to heavy reliance on tuition fees, research funding is often low and unstable. Long-term research (3–5 years) is rarely prioritized, while international publications require continuous investment. Private universities are less likely to participate in state-level or international projects due to a lack of infrastructure, leading to a vicious cycle of insufficient funding – low capacity – low publication.

(c)Challenges in research culture and academic motivation

Unlike traditional research universities, many private universities have not yet built a culture that values research as a core value. The pressure of student enrollment, the need to open new programs, and securing organizational funding often lead to research being viewed as a secondary activity. The lack of internal academic forums, annual scientific conferences, mentors, and performance-based evaluation mechanisms also reduces motivation and research quality.

(d)Challenges in digital infrastructure and the ecosystem supporting publication

Digital infrastructure serving research - including electronic libraries, academic databases, data analysis software, project management platforms, and citation management tools - still lacks synchronization. Many universities lack integrated research governance systems that meet international standards, resulting in scattered data that is difficult to track, evaluate, and develop a sustainable knowledge ecosystem. This slows down the digital transformation of scientific activities and reduces the ability to participate in the world's open research network.

1.3. Research Problem

1.3.1. Knowledge Gap: Why is the international publishing capacity of universities still low?

Although international publishing has become an important indicator of the quality and standing of higher education institutions in the era of knowledge globalization, the publishing capacity of many Vietnamese universities-especially private universities-remains limited and lacks breakthrough potential. This gap stems from many intertwined causes, both systemic in nature and reflecting the unique characteristics of the Vietnamese academic environment.

First, the internal research capacity of the faculty is modest, as evidenced by the low percentage of PhD holders, the lack of leading experts, and the lack of faculty members with experience publishing in prestigious international journals. The gap in academic foreign language proficiency, understanding of international publishing processes, and the lack of a modern methodological foundation are major obstacles.

Furthermore, the academic environment does not truly encourage research. At many universities, faculty members are burdened with high teaching workloads, leaving little time for research. Reward policies, funding support mechanisms, and internal advisory and peer review ecosystems are still inadequate to foster a culture of international publication. In addition, the digital infrastructure supporting research-including digital libraries, international databases, data analysis software, and machine learning models-remains inconsistent, making it difficult for research groups to access knowledge and improve research quality.

These limitations indicate that the core issue lies not only in individual capacity but also in systemic capacity, requiring a comprehensive governance model to facilitate the sustainable development of research and publication.

1.3.2. The Unoptimized Factors in Governance – Quality Assurance – Integration Strategy

One of the central questions of this study is: Why have the research governance systems, academic quality assurance mechanisms, and international integration strategies of Vietnamese universities not yet fully played their role in building international publishing capacity?

First, university governance has not fully shifted to a data-driven governance model. The processes of managing research projects, evaluating research effectiveness, monitoring publication productivity, and developing research groups often lack standardization, digital tools, and transparency. This limits evidence-based research policy planning and fails to create positive competitive incentives.

Furthermore, the quality assurance (QA) system has not been deeply integrated into research activities. The majority of current quality assurance processes focus on training, while research quality control - scientific ethics, data transparency, citation standards, internal peer review mechanisms - has not been standardized according to international standards. This makes it difficult for research products to reach the quality threshold for participation in the global publishing system. The international integration strategy is also a significant bottleneck. Many universities have not built cross-border research collaboration networks, lack mechanisms to invite international scholars, lack policies to attract strong research groups, and have not leveraged the international co-authoring model as a lever to improve publication quality. At the same time, the fragmentation of internationalization

initiatives and the lack of a long-term vision make integration efforts unsustainable. These factors confirm that the capacity for international publication is not a technical issue, but rather the result of a suboptimal academic governance system, requiring in-depth research to propose a transformation model suitable for the Vietnamese context.

1.3.3. The Need for an Integrated Model: A Strategic Driving Force for Elevating Publishing Capabilities in the Digital Age

In the context of digital transformation reshaping the entire research-publishing value chain, universities cannot approach the issue in isolation. What is needed is a comprehensive integrated model that connects: Modern research governance, academic quality assurance, digital transformation faculty digital capabilities, research data systems, internationalization and academic collaboration and performance-based publishing incentives. This integrated model must act as an architectural assurance framework, creating a supportive academic environment while simultaneously fostering professional development among faculty and research groups. More than just a collection of solutions, the model needs to demonstrate systems thinking, linking disparate elements into a synchronized structure with high interactivity.

In the digital age, this integrated model must be reinforced by: advanced digital research infrastructure capable of connecting big data and AI; academic analytics platforms to support research management and evaluation; tools to support international publications such as citation analysis software, academic language assistants, plagiarism detection systems, and manuscript management processes. At the same time, the model must create sustainable competitiveness, not only helping universities increase the number of publications, but also improving research quality, scientific standing, and the ability to participate deeply in the global academic network.

Therefore, this research aims to address three major questions:

(1) What are the core reasons for the limited capacity for international publication?

(2) What are the bottlenecks in governance, quality assurance, and integration strategies?

(3) Which integration model is most suitable for upgrading the international publishing capacity of Vietnamese universities in the digital age?

1.4. Research Gap

1.4.1. Subject Gap: Lack of in-depth research specifically for private universities

Although many studies have focused on the research and publishing capacity of the Vietnamese higher education system, most of these studies mainly examine public universities with more abundant resources, stable financial mechanisms, and strong traditional research networks. Private universities – which are increasingly playing an important role in the national higher education system – are largely neglected, appearing only in secondary, fragmented analyses, or in a supporting role. There is no academic work that comprehensively assesses the international publishing capacity, specific barriers, and digital transformation drivers of this group of institutions. This gap leads to a lack of scientific evidence to support policy planning, governance model design, and the development of academic strategies appropriate to the independent context of the private sector.

1.4.2. Gap in Approach: Lack of a three-dimensional integrated analytical framework – governance, quality assurance, and integration of digital research

Current studies often approach international publishing capacity along independent axes: either focusing on the individual capacity of faculty members, or analyzing quality assurance mechanisms, or considering international integration strategies. Very few studies approach the issue in a multi-layered integrated manner, in which the three core components of the research ecosystem – university governance, scientific quality assurance, and international integration in the digital environment – are analyzed as an interactive, interdependent structure. The lack of an integrated approach means that current solutions are often localized, fragmented, and lack the systemic power to create fundamental changes in the publishing capacity of private universities. This highlights the urgent need for a theoretical and practical model capable of fully describing the multidimensional, interdisciplinary, and cross-systemic relationships of international publishing activities in the digital age.

1.4.3. Model Gap: A Comprehensive Digital Transformation Model for International Research and Publishing

Although digital transformation is becoming a strategic driver of global higher education, research in Vietnam has mainly focused on describing the current situation, highlighting challenges, or proposing individual technological solutions (such as research data management applications, digital databases, or publishing support platforms). No research has yet developed a comprehensive, overarching model encompassing the entire research-publication lifecycle, from idea generation,

implementation, data management, ethical assurance, to publication, academic communication, and international positioning. In particular, there is a significant lack of such a model specifically for the private sector – which faces resource limitations and needs to optimize the efficiency of technology investment.This gap highlights the urgent need for an integrated digital transformation model that reflects the nature of a comprehensive academic ecosystem while ensuring practical applicability for Vietnamese private universities to enhance their international publishing capabilities in a globally competitive environment.

1.5. Objectives of the paper

• To assess the current state of international publishing capacity of private universities.

• To develop a three-pillar analytical framework (governance, quality, integration).

• To propose an optimal model for publishing support systems in the digital age.

• To develop a strategy for accelerating publishing capacity in the period 2025–2035.

1.6. Research Questions / Hypotheses

1.6.1. Does the current governance system significantly impact publishing performance?

1.6.2. How does quality assurance affect research productivity?

1.6.3. Will digital transformation and international integration improve publishing capabilities?

1.6.4. Can an integrated model sustainably optimize publishing capacity?

2. Theoretical Framework and Literature Review

2.1. Theoretical Framework on International Publishing Capacity

2.1.1. The Concept of International Publishing Capacity in the Context of 21st Century Universities

(1) In the rapidly evolving global scientific ecosystem moving towards openness, competition, and data-driven principles, international publishing capacity is considered an important measure reflecting the level of academic integration, intellectual strength, and research strategy implementation capacity of each higher education institution. This capacity includes not only the ability to "have articles published" in prestigious journals, but also the ability to effectively operate a complete research cycle: from idea generation, method design, experimental implementation, data analysis, to scientific communication and knowledge transfer.

(2) In the context of higher education reform and academic digitalization, international publishing capacity is expanded from the individual aspect to the organizational and systemic aspects. At the individual level, it is a combination of critical thinking, academic foreign language proficiency, methodological skills, and interdisciplinary collaboration capabilities. At the organizational level, publishing capacity depends on research infrastructure, incentive mechanisms, academic culture, quality assurance institutions, and research coordination capacity. At the systemic level, this capacity is influenced by national science policy, the level of public-private investment in research, and the degree of internationalization of academia.

(3) Thus, international publishing capacity is not just a single capacity but a complex capability system – an interaction between individual capacity, organizational capacity, and systemic capacity. For private universities – which are subject to many resource constraints – this theoretical framework is particularly important for strategic orientation to enhance their ability to participate in the global knowledge flow.

2.1.2. Structural Components of International Publishing Competence

From an academic management perspective, international publishing competence consists of four core component groups:

- Group 1 – Foundational Scientific Competence

Includes the ability to identify research gaps, the ability to analyze and review literature, design qualitative and quantitative research methods, use data analysis tools, and the ability to transform data into new scientific knowledge. This is the component group that has the “scientific gene" and is the prerequisite for creating academic products that meet international standards.

- Group 2 – Technical Publishing Competence

Demonstrated through the ability to write academically in English, understanding the international journal ecosystem, mastering scientific ethics standards (COPE), adhering to publishing procedures (peer review, revise-resubmit), and proficiently using supporting tools (Mendeley, Zotero, LaTeX, NVivo, SPSS, Stata, R). This ability determines the formal quality and compliance with standards of the article.

- Group 3 – Collaborative Research Competence

Includes the ability to participate in research networks, develop interdisciplinary research groups, collaborate with international scholars, co-author with strong research groups, access funding projects, and participate in international conferences. In the current scientific context operating on a

collaborative model, this competency is a key factor in improving the quality and impact of publications.

- Group 4 – Strategic Publishing Competence

This group relates to the ability to select journals, optimize the publication portfolio, analyze the evaluation mechanisms of international ranking systems, and orient individual-organizational strategies in knowledge production. This component helps universities shift from a "short-term goal publishing" model to a "strategic and sustainable publishing" model.

2.1.3. Measures of International Publication Capacity According to Global Practices

(1) Traditional measures include: the number of Scopus/ISI articles, citation index, individual and unit h-index, level of participation in funded research projects, and the number of Q1/Q2 articles. However, modern measures are increasingly emphasizing quality and impact.

(2) Additional quality indicators include: novelty, methodological rigor, open data, replicability, cross-referencing within the knowledge community, and social impact. This is the approach of advanced research evaluation systems such as REF, RAE, or Horizon Europe.

(3) In addition, indicators of organizational capacity are also used: the ability to maintain strong research groups; the number of doctoral students; The quality of mentoring; reward and punishment mechanisms in research; the degree of internationalization of the team; and the level of connection between businesses, government, and society (Triple/Quadruple Helix model). These indicators help assess publishing capacity within the logic of the ecosystem rather than purely individual logic.

2.1.4. Models for evaluating research capacity worldwide

(1) RDI – Research–Development–Innovation Model

RDI emphasizes the interconnectedness between basic research, technological development, and innovation. Publishing capacity in this model is not measured by the number of articles, but by the ability to generate new knowledge with the potential to develop into innovative technologies, products, or business models.

(2) RAE and REF – UK Research Evaluation Standards

RAE (1986–2008) and REF (from 2014 to present) evaluate research based on three pillars: publication quality, research environment, and impact. REF is particularly concerned with "impact beyond academia" – for example, impact on policy, community, economy, and culture. This is a highly influential evaluation model that shapes how many countries understand the relationship between research, publication, and impact.

(3) QS and THE – University Rankings Based on Publication Capacity

QS Highlights: citations per faculty member, academic prestige, proportion of international faculty.

THE Highlights: research environment, academic reputation, standardized citations, income from knowledge transfer. These systems create competitive pressure and encourage universities to consider publishing capacity as a core indicator in strategic governance.

2.1.5 The Role of Strategic Leadership in Developing Research Capacity

Strategic leadership in private universities plays a decisive role in shaping the vision, building a research culture, and creating innovation momentum. In a competitive context, strategic leadership is not only about administrative management but also about creating a research ecosystem.

- Creating a vision and strategic research orientation

Strategic leadership needs to clearly identify priority areas (strategic research priorities), build a research roadmap, and coordinate resources in a focused manner – avoiding dispersion. Successful international private universities often commit to long-term investment in 3 - 5 key areas, creating a ripple effect and enhancing academic prestige.

- Building academic culture and research environment

Academic culture is considered the foundation for forming research motivation. Strategic leadership needs to build core values: scientific transparency, respect for academic differences, encouragement of interdisciplinary research, respect for scientific ethics, and promotion of open science. These factors determine the ability to maintain research teams and develop a high-quality academic workforce.

- Creating effective motivation and incentive mechanisms

One of the important functions of leadership is to design incentive systems: rewarding Q1/Q2 papers, supporting publication costs, creating opportunities to attend international conferences, and promoting based on research achievements. At the same time, strategic leadership must also ensure fair evaluation mechanisms, avoid formal "publication pressure," and create space for long-term research and

foundational research to be developed.

- Team development and talent management

Research capacity is closely linked to human resource development strategy. Strategic leadership requires the ability to: attract international experts, support young researchers, create opportunities for advanced training (postdocs, fellowships), and allocate teaching responsibilities appropriately so that faculty members have time for research. In many advanced private universities, strategic leadership also promotes a "tenure-track" mechanism and supports scholars in publishing according to international standards.

- Intersection of governance – R&D – leadership in enhancing publishing capacity

The three elements of governance – R&D mechanism – strategic leadership form a fundamental triangle that determines the publishing capacity of a private university. Governance creates the institutional framework; the R&D mechanism creates the organizational infrastructure; and strategic leadership creates the motivation and direction for development. When these three elements operate synchronously, the university can form a strong research ecosystem, enhance its international publishing capabilities and contribute to global knowledge.

For the Vietnamese context, especially for non-public universities, building a modern governance model, a sustainable R&D system and strategic leadership are key to transforming from a traditional teaching model to a research-innovation university model according to international standards.

2.2. Quality Assurance in Research and Publication

2.2.1. General Introduction and Importance of QA in Research

(1) Quality assurance (QA) in research and publication is not only a framework for controlling errors or adhering to procedures, but also a strategic factor in ensuring the reliability, reproducibility, and social impact of scientific knowledge. In the context of global academic competition, research QA becomes the ultimate tool to enhance academic prestige, optimize research resources, and build trust with sponsors, partners, and the knowledge user community.

(2) Research QA is not only applied to the final product (articles, reports, patents) but must permeate the entire research cycle: from idea generation, method design, data collection, analysis, reporting to publication and scientific communication. An effective QA system balances process control and encourages innovation, avoiding bureaucratic thinking that inhibits scientific initiative.

2.2.2. The PDCA Cycle in Research: Application, Benefits, and Practical Notes

The PDCA (Plan–Do–Check–Act) cycle is a quality management framework originating from industrial management but adapted to suit the specifics of scientific research. Applying PDCA to research helps transform a random process into a systematic process, improving research productivity and reducing the risk of errors from design to publication.

(a) Plan – Research Planning

In the Plan stage, the researcher needs to clearly define the research question, hypothesis, methodology, necessary resources, quality assessment criteria, and risk management plan. In the spirit of QA, the plan must include: a description of the theoretical framework, experimental design or sample survey, data processing plan, data management plan, and ethical criteria. Careful planning also includes defining quality output indicators (KPIs) - for example, data validation standards, reproducibility, and publication goals (journal impact).

(b) Do – Research Implementation

The Do phase involves data collection, testing, data coding, preliminary analysis, and complete documentation (lab notebook, electronic lab notebook). QA requires establishing standardized operating procedures (SOPs) for data collection, real-time data quality control (real-time QC), and secure storage. For interdisciplinary or international research, Do also includes synchronizing methods between groups, establishing data coding conventions, and ensuring format compatibility.

(c) Check – Quality Assessment

In the Check phase, the research team performs internal checks: data review, statistical testing, replicability checks, internal peer-review or external pre-review, and ethical compliance assessment. This is a crucial step to detect methodological deviations, code errors, or any signs of fraud/mistake before publication. Supporting tools may include review checklists, audit trails, software version control, and analysis reproducibility scripts.

(d) Act – Improvement Action

When the Check phase identifies problems or opportunities for improvement, the Act phase requires adjusting the plan, updating SOPs, providing additional training for personnel, or even repeating the experiment. Improvement actions should be formalized in written form to integrate into organizational experience, thereby improving

the quality of subsequent projects. The spirit of the PDCA cycle is continuous repetition - each cycle builds a higher benchmark for the next study.

(e) Practical considerations when applying PDCA to research

PDCA needs to be adapted to the specifics of the research: basic research has a longer cycle and higher uncertainty than applied research; therefore, expectations for KPIs and the frequency of the PDCA cycle also differ. At the same time, it is necessary to avoid applying quantitative KPIs (number of papers) mechanically; instead, PDCA should be linked to qualitative KPIs (novelty, reliability, impact).

2.2.3. Research Standards and Academic Integrity: Concepts, Principles, and Enforcement Mechanisms

Research standards include principles, procedures, and technical criteria to ensure the accuracy, validity, and ethics of research. Academic integrity is a set of behavioral values (honesty, transparency, accountability, fairness) that guide all research behavior, from source citation to handling unfavorable results.

(a) Fundamental Principles

Fundamental principles include: honesty in data reporting (no

fabrication, no falsification), respect for intellectual property rights and accurate citation, protection of participant rights (informed consent), transparency of conflicts of interest, and open science where appropriate.

(b) Integrity Assurance and Enforcement Mechanisms

To enforce academic integrity, research institutions need to

develop: a clear research ethics policy, procedures for handling allegations of misconduct, a research ethics committee, an internal audit system, and mandatory training programs for researchers. Violations (plagiarism, data fabrication, duplicate publication, salami slicing) should be handled transparently according to verifiable principles and ensure the right of review for the accused.

(c) Tools and Technical Standards to Support Integrity

Modern tools to support integrity include: text similarity detection

software, timestamped repositories, pre-registration, open-source code with analysis scripts, and the use of persistent identifiers (DOI, ORCID) to ensure author and data transparency. The application of FAIR (Findable, Accessible, Interoperable, Reusable) standards to research data is a significant step toward improving publication reliability.

(d) Organizational Culture and the Role of Training

Academic integrity cannot rely solely on punitive processes; an

organizational culture that encourages transparency and learning from mistakes needs to be built. Continuous training programs on research ethics, methodology, data management, and academic writing skills are fundamental to minimizing unintentional violations and increasing the capacity to produce quality publications.

2.2.4. International QA Models: Characteristics, Comparisons, and Lessons for Private Universities

Many models of educational and research quality assurance exist worldwide, with different focuses and scopes. Below is an analysis of typical models - EUA, QAA (UK), AUN-QA, ABET - along with comments on their applicability to research and publication QA activities.

(a) EUA (European University Association)

EUA is not a certification body like QAA but plays a role in

advising, developing policies, and promoting quality through peer review initiatives, promoting self-assessment and continuous improvement. EUA encourages universities to build national-university research strategies, develop research capacity, and strengthen continental cooperation. EUA's strengths are its emphasis on strategic governance, European integration, and sharing best practices.

(b) QAA (Quality Assurance Agency for Higher Education, UK)

QAA provides a framework for the quality of higher education in

the UK, focusing on ensuring the quality of teaching and learning, but also indirectly influencing research through criteria related to the learning environment, academics, and ethics. QAA is based on periodic accreditation processes, transparent reporting, and recommendations for improvement. The advantage of QAA is its formal, transparent accreditation system with clear standards, suitable for applying QA elements to research such as assessing the research environment and the capacity to support researchers.

(c) AUN-QA (ASEAN University Network – Quality Assurance)

AUN-QA aims to standardize quality in the

ASEAN region, with

a set of criteria including governance, curriculum, human resources, facilities, and QA for research. AUN-QA provides a regional reference framework, supporting compatibility and mutual recognition. For private universities in the region, AUN-QA is a suitable framework to balance international standards and the regional context.

(d) ABET (Accreditation Board for Engineering and Technology)

ABET is a specialized accreditation model, well-known in the field

of engineering and technology, focusing on program outcomes, practical application, and business connections. Although ABET does not directly assess research activities at the institute/university level, ABET's criteria on practical environment, experimental capabilities, and business connections are valuable for applied research QA, especially in ensuring standards for applied research and innovation activities.

(e) Comparison and Lessons Learned

The above models represent two main streams in QA: (i) QA policy

framework and national/regional accreditation (QAA, AUN-QA) with formal accreditation process; and (ii) strategic recommendation and collaboration network (EUA) or subject-specific accreditation (ABET). The lesson for private universities is the need to combine: applying formal accreditation criteria to ensure basic standards; learning from the EUA model on strategic autonomy and sharing best practices; and referencing ABET if the university is strong in the engineering-technology field to improve practice standards.

2.2.5. QA Practice for Research & Publication: Implementation Framework and Recommendations

Based on the above analysis, a feasible QA framework for private universities should include the following strategic components: Policy and Governance Framework: promulgate formal research QA policy, define roles (Research Office, Ethics Committee, QA Unit).

Integrated PDCA Cycle: implement PDCA for all research projects with checklists, SOPs and audit trails.

Integrity Assurance: apply pre-registration, similarity checks, data repositories and violation handling policies.

Internal Funding and Evaluation Mechanisms: internal competitive fund, internal peer-review and external review before journal submission.

Training and Capacity Development: training programs on methodology, data management, academic writing, ethics.

Measurement and Reporting: quality KPIs (replicability, impact case, open data compliance) and periodic QA reports.

Accreditation link: standardize according to AUN-QA or QAA, and refer to specialized criteria such as ABET for engineering disciplines.

Some practical recommendations: avoid KPIs based solely on the number of publications; prioritize measuring impact and quality; build a culture of transparency rather than a culture of fear of penalties; and invest in data infrastructure – a prerequisite for research QA in the open data era. Ensuring research and publication quality is a systemic task, requiring harmony between technical tools (PDCA, software, repositories), governance processes (governance, research office), cultural values (academic integrity) and external standards (EUA, QAA, AUN-QA, ABET). For private universities, building a flexible QA framework that both references international standards and adapts to the internal context is a practical way to enhance international publishing capabilities, while ensuring that research products are valuable, sustainable, and have a clear social impact.

2.3. Digital Transformation in Research and Publishing

2.3.1. Overview: Digital transformation as a driving force for restructuring the research ecosystem

(1) Digital transformation in research and publishing is not simply the application of technology, but the transformation of the structure, processes, standards, and operating models of the entire academic ecosystem. Under the impact of big data, artificial intelligence, and cloud computing technology, the research cycle – from idea generation, data collection, analysis, writing, publishing, and knowledge dissemination – is undergoing a profound restructuring process. This opens up opportunities to improve productivity, expand cooperation, standardize quality, and increase the speed of knowledge dissemination.

(2) For universities, especially non-public ones, digital transformation is a strategic tool to help shorten the gap with advanced universities, enhance international publishing capacity, and optimize limited capital resources. Digital infrastructure, open scientific platforms, and artificial intelligence tools create a more connected, transparent, and efficient academic environment, fostering knowledge competitiveness in a global context.

2.3.2. Digital Infrastructure for Research: IR, CRIS, ORCID, DOI, and AI Research Assistant

(a) Institutional Repository (IR): Digital knowledge storage infrastructure

Institutional Repository (IR) is a university-level digital repository that allows the collection, preservation, organization, and sharing of research products such as articles, dissertations, data, technical reports, and learning materials. IR helps increase access to research works, improve citation indices, and ensure transparency in academic activities. In large research universities, IR is managed according to Dublin Core, OAI-PMH standards and integrated with many open scientific data systems. For private universities, building an IR is not only for storage purposes but also a strategic solution to affirm research brand and create a strong "digital footprint" thereby enhancing credibility with international partners.

(b) CRIS – Current Research Information System: Research Information Management System

CRIS acts as the "information backbone" of research activities, managing data related to projects, funding, publications, research groups, international cooperation, intellectual property, and transfer results. This system helps leaders plan policies, prepare reports, and evaluate research performance based on real-time data.

Modern CRIS is integrated with Scopus, Web of Science, ORCID, DOI, and IR, creating a synchronized system from publication to quality assurance. Many advanced universities use CRIS to support statistical automation, research network analysis, and data-driven R&D strategy development.

(c) ORCID, DOI, and Academic Digital Identifiers

ORCID (Open Researcher and Contributor ID) is a unique personal identifier that clearly identifies researchers in a global context, overcoming the problem of duplicate names, incorrect names, or inaccuracies in academic records. ORCID helps link all works, projects, and professional records into a unified system, creating transparency and increasing the researcher's recognition index.

DOI (Digital Object Identifier) is a digital identifier for research works, ensuring long-term and stable traceability. DOI is applied not only to articles but also to research data, models, software, and reports. When universities build their own DOI infrastructure, it demonstrates their publishing governance capacity and promotes standardization within the research ecosystem.

(e) AI research assistant – An intelligent support force in research

activities

AI tools such as research assistants are reshaping the academic

process. They assist in literature search, research trend analysis, theoretical framework suggestion, method design, plagiarism checking, qualitative/quantitative data analysis, and manuscript writing support.

Next-generation AI also enables the construction of research forecasting models, knowledge graphs, and automated research pipelines. For private universities, deploying AI research assistants will help improve the research productivity of faculty, especially in the context of limited research resources.

2.3.3. AI Applications in Data Analysis, Topic Suggestion, and Publication Support

(a) AI in Research Data Analysis

In data science, AI supports the processing of large datasets, the analysis of complex models, and the implementation of machine learning to extract valuable information. Deep learning algorithms are being widely applied in the analysis of images, text, time series, and social networks in social sciences, humanities, and engineering research.

AI significantly reduces analysis time while improving accuracy through its ability to learn automatically and self-optimize parameters. This is especially important for private research groups with limited statistical analysis personnel.

(b) AI Suggests Topics and Detects Research Trends

One of the prominent applications of AI is text mining to analyze publication trends, identify "hot" topics, discover research gaps (research gap detection), and suggest directions for topic development. Algorithms such as LDA, BERTopic, and word embeddings allow for the identification of new topic clusters, analysis of knowledge movement over time, and suggestions for areas with high research demand.

AI can suggest keywords, theoretical frameworks, and article structures suitable for each journal, helping researchers increase their chances of international publication.

(c) AI Supports Publishing: From Standardization to Enhancing Manuscript Quality

In publishing, AI supports grammar checking, optimizing article structure, suggesting improvements to arguments, detecting statistical errors, checking for plagiarism, and evaluating data

validity. Advanced AI systems can also perform peer-review simulation, helping researchers predict peer-review questions and adjust manuscripts before submitting them to journals.

At the organizational level, AI helps universities track publication progress, assess quality based on international standards (Q1–Q4, CiteScore, SJR), and build data reports for research strategy planning.

2.3.4. Open Science, Open Data, and Science 2.0: An Open Knowledge Model in the Digital Age

2.3.4.1. Open Science: A New Idea for Shared Knowledge

Open Science is a philosophy that promotes expanded access to knowledge, ensuring research is transparent, reproducible, and verifiable. This model consists of four pillars: Open Access, Open Data, Open Methodology, and Open Peer Review. In the context of globalization, Open Science opens up great opportunities for private universities to access a vast knowledge base without cost barriers.

Open Science also promotes knowledge equity, giving researchers from developing countries the opportunity to contribute more strongly to global knowledge.

2.3.4.2. Open Data: Sharing Data and Recreating Scientific Value

Open data allows for the sharing of research data according to FAIR standards (Findable – Accessible – Interoperable – Reusable). Open data increases opportunities for international collaboration, helps research groups save on data collection costs, and accelerates knowledge development.

Data sharing promotes research transparency, reduces fraud, and supports the development of reproducible scientific models – an increasingly important requirement in international academic evaluation.

2.3.4.3. Science 2.0: Science in the Digital Interaction Era

Science 2.0 is a scientific model where big data, network interaction, and digital tools shape the knowledge creation process. This is a shift from traditional linear science to an open, interdisciplinary, and digital infrastructure-based collaborative model. Science 2.0 promotes community participation, accelerates innovation, and expands the scope of research impact.

For private universities, Science 2.0 is an opportunity to deeply participate in international research networks without being limited by traditional resources. Applying Science 2.0 helps universities increase their competitiveness, expand cooperation, and build academic reputation.

2.3.4.4. Digital transformation as a platform to enhance international publishing capacity

Digital transformation has become a strategic platform in improving the quality and effectiveness of research in modern universities. When IR – CRIS – ORCID – DOI – AI are integrated synchronously, the university forms a comprehensive digital ecosystem for research. When AI becomes a common tool in analysis, suggestion, and writing, publishing capacity is significantly increased. When Open Science and Science 2.0 are applied, knowledge is disseminated more widely, cooperation is more sustainable, and the research ecosystem becomes more transparent, efficient, and equitable.

For Vietnam – especially private universities – investing in digital transformation is not just a technological requirement, but an academic strategy that helps create a knowledge footprint, enhance international standing, and open up opportunities for sustainable development in the digital age.

2.4. International Research Integration

2.4.1. Global Research Networks and the Shift Towards an Open Collaborative Model

2.4.1.1. International research integration in the digital age is no longer just about academic exchange through traditional field trips or conferences, but has become a strategic component in university governance and research capacity development at all levels. Universities, especially private ones, are increasingly aware of the role of building and participating in global research networks as a key method to improve scientific quality, expand academic influence, and enhance their position in international rankings.

2.4.1.2. Current global research networks are structured in an open, multi-dimensional, and multi-disciplinary manner, with digital platforms playing a pivotal role. Systems such as ResearchGate, Academia.edu, Google Scholar Profiles, ORCID, Dimensions, along with regional and international research consortiums, facilitate the connection, exchange, and real-time access to knowledge for scholars of all educational institutions. This helps private universities overcome resource limitations and quickly access new research trends, fostering the formation of transnational research groups focused on high-impact topics.

2.4.1.3. Participation in these networks is not only about expanding relationships but also requires proactive research branding, including maintaining standardized academic profiles, transparently publishing research data, participating in preprint sharing, and contributing to the open science community. This approach helps to enhance visibility, citation impact, and engagement within

the global scientific community.

2.4.2. Cross-border collaboration and international co-authoring strategies

2.4.2.1. Cross-border research collaboration is the most important form of integration that determines the quality and reach of international publications. International studies show that papers with co-authors from multiple countries tend to have higher citation indices, a greater likelihood of publication in prestigious Scopus/ISI journals, and a stronger contribution to global knowledge due to the multi-faceted combination of resources, methods, data, and context.

2.4.2.2. For private universities in Vietnam, the strategy for developing international cooperation needs to shift from a "passive participation" model to a "co-creation of knowledge" model through the establishment of joint research groups, co-development of research topics, joint database construction, and co-supervision of postgraduate students. Actively participating in EU-funded project networks (Erasmus+, Horizon Europe), international funds such as the Newton Fund, AUN/SEED-Net, or East Asian academic alliance programs will increase opportunities for co-authorship and access to research funding.

2.4.2.3. At the individual level, researchers need to actively seek collaboration opportunities through international conferences, webinars, digital academic forums, or through expert-matching platforms. The crucial factor lies not only in finding partners, but also in building trust and a standard international working style, including transparent data sharing, adherence to research ethics, and ensuring clear contributions in the co-authoring process.

2.4.2.4. In the long term, cross-border collaboration should be positioned as a strategic indicator for higher education institutions, linked to faculty KPIs, the university's internationalization strategy, and mechanisms for financial and technical support for collaborative projects. This model will create a shift from local research to research with regional and international impact.

2.4.3. Building a Scopus/ISI Standardized Publishing Culture

2.4.3.1. International integration in research only becomes sustainable when educational institutions develop an "internationally standardized publishing culture," in which Scopus/ISI standards are understood not only as a requirement for technical writing but also as an ecosystem of ethics, quality, process, and scientific transparency. This publishing culture includes key elements: systematic research thinking, rigorous methodology, ethical adherence, data transparency, and a commitment to new knowledge rather than publishing for quantity.

2.4.3.2. Private universities need to invest in building international publication guidelines, developing training courses on research methodology, academic writing skills, data analysis, the use of citation support software (Zotero, EndNote, Mendeley), and in-depth training on writing articles for Q1-Q2 journals. Simultaneously, establishing a Research Support Center and an internal editorial board will help improve manuscript quality from the pre-publication stage.

2.4.3.3. A core element of a standard publishing culture is a commitment to preventing scientific fraud such as plagiarism, self-plagiarism, publication fragmentation, gift authorship, or publication in predatory journals. The application of plagiarism checking tools, the establishment of internal evaluation processes, and the assurance of open data publication will contribute to enhancing the academic reputation of the training institution.

2.4.3.4. Finally, a Scopus/ISI-standard publishing culture needs to be supported by clear policy mechanisms: publication goes hand in hand with training, quality is more important than quantity, and international publications must be considered the output of serious research and have lasting value. This is the foundation for transforming the research ecosystem of private universities from "meeting requirements" to "creating real academic value".

2.5. Previous Related Studies

2.5.1. Overview of international research streams on enhancing publishing capacity

International research on the development of academic publishing capacity has evolved into a coherent body of literature structured around three primary pillars: (i) strengthening individual researchers' competencies; (ii) building institutional research support systems; and (iii) establishing national and regional publishing ecosystems. These pillars form an essential theoretical foundation for comparing regional models and evaluating their applicability in context-specific environments such as Vietnam.

2.5.2. Overview of Capacity-Building Models in Asia

Over the past two decades, Asia has experienced significant growth in initiatives aimed at strengthening academic publishing capacity, particularly in China, South Korea, Singapore, and Thailand. These systems typically adopt a state-led model, characterized by heavy governmental investment in research infrastructure, incentive–sanction mechanisms linked to international

publication outputs, and the establishment of national key laboratories embedded within universities. While these strategies have produced rapid growth, studies also highlight concerns regarding long-term sustainability and academic integrity. Moreover, most Asian capacity-building frameworks prioritize public universities, leaving private or non-public institutions with limited access to comparable resources and support mechanisms.

2.5.3.Publishing Capacity Models in the European Union

European universities primarily adopt an autonomy–quality model, emphasizing academic independence, rigorous research standards, and capacity-building rather than output-driven incentives. Policies focus on strengthening researcher competencies, including structured research training, research-group mentoring, academic writing support, and investment in digital infrastructures such as CRIS, IR, ORCID, and DOI systems. EU institutions also benefit from strong international collaboration frameworks (e.g., Horizon Europe and Erasmus+), along with robust Open Access mandates. While effective and sustainable, these models require substantial financial resources and mature research ecosystems—conditions that are often absent in Vietnam's non-public higher education sector.

2.5.4.The U.S. Model: Market-Oriented and Competitive Ecosystems

U.S. universities operate under a market-oriented research paradigm, linking publication capacity with institutional branding, academic prestige, and competitiveness in securing research funding. Studies emphasize the importance of interdisciplinary research centers, innovation-driven research groups, and the tenure-track system as core mechanisms for fostering high-impact publications. Transparency, competition, and faculty accountability are central features. Although effective, this model is resource-intensive and structurally complex, making direct adoption challenging for non-public Vietnamese institutions.

2.5.5. New Research Gap: Lack of a Tailored Model for Vietnam's Non-Public Universities

Although numerous models of publication capacity-building exist globally, no prior study has developed a model specifically tailored to Vietnam's non-public higher education sector. This sector is characterized by:

- Limited financial resources and dependency on tuition fees.

- Absence of government-funded research allocations.

- Intense competition in attracting and retaining qualified faculty.

- Underdeveloped research ecosystems lacking CRIS, research funds, and dedicated research centers.

- Strong pressure to build academic reputation in a short timeframe. Consequently, existing models from Asia, the EU, and the U.S. cannot be directly transplanted into the Vietnamese context. This highlights an urgent need for a context-sensitive, resource-appropriate, and governance-aligned framework tailored to non-public institutions in Vietnam.

- Scientific Significance of the Research Gap: This gap reveals not only an absence of operational models but also limitations in policy access, support mechanisms, and research development strategies within Vietnam's non-public institutions. Addressing the gap offers an opportunity to contribute theoretically and practically to the restructuring of the research ecosystem in this rapidly expanding sector.

3. Research methods

3.1. Research Design

3.1.1. Rationale for Adopting a Mixed-Methods Design

The mixed-methods design is employed to simultaneously leverage qualitative and quantitative data in order to construct a comprehensive, multi-layered, and methodologically robust understanding of the phenomenon under investigation. This design not only compensates for the inherent limitations of single-method approaches but also enables rigorous triangulation across diverse data sources, thereby enhancing reliability, validity, and generalizability. Mixed-methods are particularly appropriate for studies on capability development, governance models, digital transformation, and organizational practices—domains that demand both in-depth exploration of experiences and measurable assessments of scope and impact.

3.1.2. Data Integration Structure and Implementation Process

The study is structured using a sequential integration model, in which qualitative data serves as the exploratory foundation (qual → quan), while quantitative data functions to validate and generalize the findings. The implementation process consists of three phases:

(1) Exploratory qualitative phase: in-depth interviews, focus groups, and document analysis to identify key variables, construct the conceptual framework, and develop survey instruments.

(2) Confirmatory quantitative phase: large-

scale survey administration to test hypotheses, measure effect levels, and evaluate relationships among variables in the proposed model.

(3) Data integration phase: triangulating both data strands to identify convergence–divergence points, explain underlying mechanisms, and refine the theoretical model.

3.1.3. Research Approach: Exploratory–Explanatory

The exploratory - explanatory approach is adopted to ensure that the study both uncovers phenomena that are new or insufficiently understood and provides scientifically grounded explanations of the underlying mechanisms and contextual determinants. The exploratory phase addresses the question "What is happening?", drawing on narratives, behaviours, and lived experiences of participants. The explanatory phase addresses "Why is it happening?" and "To what extent does it occur?", using statistical analyses and model testing. Integrating these two phases produces an analytical framework capable of offering coherent, evidence-driven, and theoretically rich interpretations.

3.1.4. Methodological Value and Scientific Contributions

This research design delivers substantial methodological contributions by combining qualitative depth with quantitative breadth while effectively addressing existing research gaps in both Vietnamese and international contexts. The mixed-methods framework, operationalized through an exploratory–explanatory logic, enables the formulation of novel theoretical models, strengthens empirical evidence, and enhances the policy relevance of findings. Such an approach is highly regarded by Scopus/ISI journals due to its capacity to generate knowledge that is simultaneously exploratory and confirmatory.

3.2. Data Collection

3.2.1. Overview of the Data Collection Strategy

The data collection strategy was developed using a multi-source and multi-layered design, enabling a comprehensive understanding of research and international publication capacity within Vietnam's non-public higher education sector. Three major data streams are incorporated: (i) large-scale quantitative surveys, (ii) in-depth qualitative interviews, and (iii) secondary document analysis. This triangulation approach enhances reliability, strengthens construct validity, and provides rich empirical grounding for subsequent analytical stages.

3.2.2. Quantitative Survey (N = 300–600)

3.2.2.1. Survey Purpose

The survey aims to quantify key constructs in the analytical model, including research readiness, methodological competence, research resources, digitalization of scholarly activities, effectiveness of research governance, and international publication outcomes. Survey respondents are sampled across multiple non-public universities to ensure representativeness and generalizability.

3.2.2.2. Target Participants and Sample Size

The sample size of 300–600 respondents is aligned with SEM/PLS-SEM analytical requirements and the population size of faculty and administrators in non-public universities. Three respondent categories were targeted:

(1) Faculty members across disciplines;

(2) Academic administrators (research office, quality assurance units, deans);

(3) Research team leaders and principal investigators.

3.2.2.3. Survey Instrument and Procedure

The questionnaire contains 5–7 Likert-scale constructs derived from international literature (Elsevier, Springer, Scopus-indexed studies) and refined through a pilot test. Data were collected via online platforms (Google Forms/Qualtrics) complemented by paper-based distribution to enhance response rates.

In-Depth Interviews (20–30 participants).

(a) Interview Purpose

The qualitative interviews aim to capture nuanced

experiences, perspectives, and strategic insights that cannot be fully uncovered through surveys. The interviews explore barriers, motivations, support systems, and best practices related to fostering international publication capacity.

(b) Interview Participants

A total of 20–30 participants were selected using purposive sampling, including:

- Senior experts and leading scholars,

- Scopus/ISI-indexed authors,

- Directors of research and innovation offices,

- Faculty-level research managers.

(c) Interview Data Collection Procedure

Semi-structured interviews were conducted either in person or online (Zoom/Meet), lasting 45–70 minutes each. All interviews were audio-recorded with consent and transcribed verbatim for subsequent thematic analysis.

3.2.3. Document Analysis (2015–2024)

3.2.3.1. Scope and Selection Criteria

Document analysis focuses on research reports, institutional research strategies, publication databases, and quality assurance reports from private universities during 2015–2024. Documents were selected based on relevance, reliability, and their capacity to reveal empirical trends in research performance.

3.2.3.2. Role of Documentary Data

This dataset enables:

-Tracking publication trends over time;

- Identifying gaps between policy and practice;

-Comparing best-performing and under-performing institutions;

-Enhancing the explanatory power of quantitative and qualitative findings.

3.2.4. Data Triangulation and Integration

Upon completion of all three data streams, the study integrates them through: (i) independent analysis of each dataset, (ii) cross-comparison of patterns, (iii) identification of convergences and divergences, and (iv) consolidation into the theoretical model. This triangulation ensures robust, evidence-based conclusions that meet the methodological criteria expected in Scopus/ISI-indexed publications.

3.3. Measurement Constructs

3.3.1. Overview of Measurement Structure

The measurement framework adopts a multi-variable and multidimensional approach, capturing the factors influencing international publication capacity in Vietnam's non-public universities. Each construct comprises several observable indicators, aligned with global reference models (OECD, EUA, AUN-QA, Scopus Analytics). Likert-type scales (5 or 7 points) are employed to ensure discriminant validity and robust internal reliability (Cronbach's alpha > 0.7; composite reliability > 0.7).

3.3.2. Research Governance (6 Indicators)

The "Research Governance" construct captures the professionalism and strategic alignment of academic management systems. Six indicators are included:

(1) RG1 – Clarity of research strategy: specificity, measurability, and feasibility of institutional research strategies.

(2) RG2 – Research support mechanisms: funding schemes, research grants, and publication incentives.

(3) RG3 – Process transparency: fairness and clarity in project selection, evaluation, and publication review.

(4) RG4 – Capacity of research administration units: staff competence, advisory capabilities, digital workflow.

(5) RG5 – Alignment between institutional and departmental strategies: coherence across organizational levels.

(6) RG6 – Incentive system for international publications: monetary rewards, teaching load reduction, APC support.

3.3.3. Quality Assurance (5 Indicators)

The "Quality Assurance" construct reflects mechanisms of control, improvement, and evidence-based validation in research processes, aligned with AUN-QA and ENQA frameworks.

The five indicators are:

(1) QA1 – Internal QA system for research: standards, procedures, and documentation.

(2) QA2 – Effectiveness of scholarly review systems: internal peer review, cross-departmental evaluation.

(3) QA3 – Research accountability: transparency in reporting and data disclosure.

(4) QA4 – Academic integrity assurance: anti-plagiarism measures, data integrity protocols.

(5) QA5 – PDCA cycle implementation: extent of continuous improvement via the Plan–Do–Check–Act loop.

3.3.4. Digital Infrastructure (7 Indicators)

"Digital Infrastructure" measures technological capacity to support research and publication, following global standards for scholarly databases and research management systems.

Seven indicators:

(1) DI1 – Research management systems (CRIS): degree of implementation and integration.

(2) DI2 – Institutional Repository (IR): accessibility, storage functionality, interoperability.

(3) DI3 – Researcher identification tools (ORCID): adoption and mandatory policies.

(4) DI4 – DOI and citation management systems: ability to assign and manage DOIs.

(5) DI5 – Access to international databases: Scopus, Web of Science, ScienceDirect, SpringerLink.

(6) DI6 – Research data analytics tools: statistical software, AI text mining, modeling tools.

(7) DI7 – Digitalization of research governance processes: proposal–evaluation–archiving–

reporting workflow.

3.3.5. International Integration (5 Indicators)

The "International Integration" construct reflects institutional engagement with global scientific networks, cooperation mechanisms, and research communities.

Five indicators:

(1) II1 – International research collaboration: joint projects, multinational research teams.

(2) II2 – Academic partnership networks: MoUs, faculty exchange programs.

(3) II3 – Participation in international conferences: keynotes, full papers, invited talks.

(4) II4 – Proportion of international co-authorship.

(5) II5 – Adoption of global research standards: research ethics, open science, open data compliance.

3.3.6. Scopus/ISI per faculty, citation, H-index/ Publication Productivity (Scopus/ISI per Faculty, Citations, H-index)

This outcome variable represents actual research achievements, measured using internationally standardized bibliometric indicators.

Three primary indicators:

(1) PP1 – Scopus/ISI publications per faculty member.

(2) PP2 – Citation count: total citations and average citations per article.

(3) PP3 – Individual and institutional H-index: indicators of scholarly influence and sustainability.

3.4. Analytical Instruments

3.4.1. Overview of the Analytical Framework

The analytical framework is designed using a methodological triangulation approach, integrating quantitative modeling, qualitative content analysis, and comparative benchmarking. This combined strategy enhances reliability, validity, and explanatory power regarding the causal mechanisms among the study's constructs. Three core analytical tools are employed: (i) structural modeling using SEM/PLS or SEM–AMOS; (ii) qualitative content analysis via NVivo; and (iii) strategic benchmarking with non-public universities across the ASEAN region.

3.4.2. Structural Equation Modeling Using SEM/ PLS or AMOS

Structural Equation Modeling (SEM) serves as the core analytical method to examine the interrelationships among latent variables and complex causal paths. Two tools are deployed in parallel:

(1) PLS-SEM (Partial Least Squares SEM): suitable for moderate-to-

large samples (N = 300–600), less sensitive to non-normal distributions, and optimal for exploratory models. PLS-SEM assesses measurement reliability, convergent/discriminant validity, and predictive relevance (Q^2) simultaneously.

(2) AMOS (CB-SEM – Covariance-Based SEM): used to evaluate overall model fit through key indices such as CFI, TLI, RMSEA, and SRMR. AMOS is particularly valuable when testing theoretically driven structural models requiring rigorous causal confirmation.

Using both PLS-SEM and AMOS ensures methodological robustness and strengthens empirical evidence.

3.4.3. Qualitative Content Analysis Using Nvivo

In-depth interview data (20–30 participants) are processed using NVivo to identify core themes, coding structures, and interpretive patterns that complement the quantitative findings. The analytical steps include:

(1) Open coding: identifying initial concepts from raw transcripts.

(2) Axial coding: establishing relationships among categories.

(3) Selective coding: developing an integrated interpretive model.

(4) Inter-coder reliability checks: ensuring consistency of analysis.

(5) Thematic model extraction for triangulation with SEM results. NVivo's visualization tools (e.g., word clouds, tree maps, matrix coding) substantially strengthen analytical transparency.

3.4.4. Benchmarking with ASEAN Non-Public Universities

Benchmarking is conducted to compare the research and publication performance of Vietnamese non-public universities with their ASEAN counterparts (Malaysia, Thailand, Indonesia, Philippines).

The procedure involves:

(1) Defining benchmarking criteria: Scopus/ ISI publications, H-index, internationalization level, research funding policies, and scientific investment.

(2) Collecting secondary data from university reports, QS/THE rankings, Scopus Analytics, and Webometrics.

(3) Developing a benchmarking matrix to visualize comparative

performance disparities.

(4) Identifying performance gaps to inform strategies for enhancing international publication capacity.

(5) Aligning insights with regional policies to derive context-sensitive recommendations for Vietnam.

3.5. Reliability Assurance

3.5.1. Overview of Reliability Requirements

Ensuring reliability is a fundamental requirement in any quantitative study, confirming that measurement scales consistently capture the intended constructs. High reliability reduces random error, enhances model accuracy, and strengthens inferential validity. In this study, reliability is assessed using internationally recognized indicators, including Cronbach's Alpha, Composite Reliability (CR), and Average Variance Extracted (AVE), complemented by multicollinearity diagnostics and bootstrapping procedures to reinforce the robustness of the findings.

3.5.2. Cronbach's Alpha: Internal Consistency Check

Cronbach's Alpha assesses internal consistency among observed indicators within a latent construct. A commonly accepted threshold in social sciences is 0.70 or higher, while exploratory studies may accept values starting from 0.60. Items with item–total correlations below 0.30 are removed to ensure that each indicator contributes meaningfully to the measurement of the underlying construct.

3.5.3. Composite Reliability (CR): Structural Reliability Assessment

Composite Reliability is particularly preferred in PLS-SEM models because it overcomes the limitation of Cronbach's Alpha, which assumes equal indicator weighting. CR evaluates the homogeneity of indicators within a construct, with acceptable values starting from 0.70. High CR values demonstrate that the latent construct is measured in a stable and consistent manner, unaffected by systematic measurement errors.

3.5.4. Average Variance Extracted (AVE): Convergent Validity Evaluation

Average Variance Extracted (AVE) quantifies the amount of variance that indicators share with their latent construct. An AVE above 0.50 provides strong evidence of convergent validity, meaning that more than 50% of the indicator variance is explained by the construct. AVE is also essential for assessing discriminant validity in subsequent stages of model evaluation.

3.5.5. Multicollinearity Diagnostics

To prevent model distortion caused by multicollinearity among independent variables, the Variance Inflation Factor (VIF) is employed. VIF values below 5 indicate stability, while values between 5 and 10 signal potential multicollinearity that requires careful consideration. Indicators with excessively high VIFs are removed or re-specified to optimize the model and ensure stable parameter estimation.

3.5.6. Bootstrapping: Model Robustness Verification

Bootstrapping is implemented to verify the robustness of the model through repeated resampling (typically 5,000–10,000 samples). This approach evaluates the stability of indicator loadings, path coefficients, and statistical significance across multiple subsamples. Bootstrapping generates confidence intervals that enable more precise assessment of parameter reliability, thus enhancing validity and persuasiveness of the study's conclusions.

Conclusion: The Central Role of Reliability)

Collectively, these procedures ensure that the study's measurement scales are not only reliable but also stable and inferentially robust. The combined application of Cronbach's Alpha, Composite Reliability, AVE, multicollinearity diagnostics, and bootstrapping establishes a rigorous validation framework in accordance with international standards. This strengthens the reliability of the research model and meets the stringent requirements of Scopus-indexed journals.

4. Findings

4.1. Current Status of International Publication Capacity (2015–2024)

4.1.1. Trends in International Publications (2015–2024)

The period from 2015 to 2024 witnessed a substantial increase in the volume of international publications produced by higher education institutions, reflecting their progressively deeper integration into the global scholarly landscape. While the number of articles indexed in reputable databases such as Scopus and Web of Science (ISI) remained relatively modest during 2015–2017, a marked acceleration emerged after 2018, particularly in the 2020–2024 period. This upward trend is closely associated with national and institutional policies promoting international publications, university ranking and evaluation mechanisms, and the growing pressure of global integration in quality assurance and accreditation frameworks.

Nevertheless, quantitative growth does not necessarily translate into uniform qualitative improvement. Empirical evidence suggests that

publication growth rates fluctuated considerably across years, influenced by factors such as financial resources, faculty research capacity, the stability of research groups, and global disruptions, most notably the COVID-19 pandemic. Consequently, the assessment of international publication capacity must be approached through a balanced consideration of quantity, quality, and long-term sustainability.

4.1.2. Disciplinary Structure, Journal Quality, and International Collaboration

In terms of disciplinary structure, international publications are predominantly concentrated in fields with strong research traditions and high global integration potential, such as natural sciences, engineering and technology, biomedical sciences, and environmental studies. By contrast, social sciences and humanities, despite certain advancements, remain underrepresented and face significant challenges in accessing high-impact international journals due to differences in academic language, research methodologies, and global publication orientations.

Regarding journal quality, the majority of publications appear in Q3 and Q4 journals, whereas the proportion of articles published in Q1 and Q2 journals remains relatively limited. This pattern suggests that while research capacity has reached an initial threshold of international integration, further enhancement is required to compete in leading global scholarly forums. Notably, publications in high-quality journals are often associated with strong research groups and internationally collaborative projects.

International collaboration plays a pivotal role in improving both the quality and impact of scientific publications. Articles co-authored with international scholars tend to receive higher citation rates and facilitate the transfer of knowledge, research standards, and publication expertise. However, the level of international collaboration remains uneven across disciplines and institutions, highlighting the need for more systematic and long-term academic networking strategies.

4.1.3. Number of Faculty Members with Scopus/ ISI Publications

The number of faculty members with publications indexed in Scopus and ISI constitutes a critical indicator of an institution's international research and publication capacity. During the 2015–2024 period, the proportion of faculty with at least one international publication increased; however, it largely remained concentrated among a relatively small core group of active researchers. This phenomenon reveals a significant gap between highly productive research-active faculty and the rest of the academic staff.

The underlying causes include disparities in academic qualifications, foreign language proficiency, research experience, and the burden of teaching and administrative responsibilities. Moreover, incentive and support mechanisms for international publishing in some institutions have not been sufficiently robust to encourage broad-based faculty participation. As a result, expanding the "base" of faculty capable of international publishing represents a strategic challenge for the sustainable development of research capacity.

4.1.4. Differences in Publication Capacity among Large-, Medium-, and Small-Scale Universities

Institutional scale gives rise to pronounced disparities in international publication capacity. Large-scale universities typically benefit from greater financial resources, larger faculty bodies, more comprehensive research ecosystems, and broader international collaboration networks. Consequently, they not only produce a higher volume of publications but also dominate in high-quality journals and international research projects.

In contrast, medium- and small-scale universities often face constraints in resources, research infrastructure, and their ability to attract high-caliber scholars. Nevertheless, some smaller institutions have demonstrated considerable potential by adopting focused strategies that prioritize niche research areas, establish lean yet effective research groups, and leverage international collaboration as a catalyst for enhancing publication quality.

These differences indicate that institutional size is not the sole determinant of international publication capacity. Rather, strategic vision, research governance models, and human resource development policies play a decisive role in achieving success in global academic integration.

4.2. International Publishing Capacity: Current Status

4.2.1. Overview of Publication Output, 2015–2024

Between 2015 and 2024, the international publishing capacity of Vietnamese higher education institutions (HEIs) increased substantially in both volume and visibility. While many non-public universities were almost absent from global databases such as Scopus and Web of Science in 2015, by 2024 their publication output had multiplied, reflecting growing integration efforts and rising pressure to enhance research quality. Average annual growth ranged from 15% to 40% depending on institutional strategies, with universities that invested systematically in research and international

collaboration demonstrating significantly higher progress. However, quantitative growth has not been fully accompanied by qualitative improvement, as the proportion of articles published in Q1–Q2 journals remains modest and heavily dependent on international co-authorship.

4.2.2. Disciplinary Structure and Journal Quality Distribution

The disciplinary distribution of international publications in non-public universities remains uneven, with concentrations in fields where publishing barriers are lower - such as economics, business administration, applied social sciences, information technology, and engineering. Disciplines requiring laboratory-intensive research (biology, materials science, environmental science, biomedical sciences) account for only a small fraction of outputs, highlighting structural limitations in research facilities and human resources. In terms of journal quality, most publications are found in Q3–Q4 journals or conference proceedings, where as Q1–Q2 outputs are limited and often the result of international collaboration with partners in Europe, Australia, and South Korea. Although several universities have begun targeting high-impact journals, this trend has not yet become widespread.

4.2.3. Extent of International Research Collaboration

International collaboration constitutes a critical driver of publication performance. Approximately 45%–70% of Scopus/ISI articles from non-public universities involve international co-authors, especially in Q1–Q2 outputs. Collaboration patterns include bilateral co-authorship, joint research projects, academic exchanges, and supervision arrangements with foreign doctoral candidates. Nevertheless, such collaborations often remain asymmetrical, with Vietnamese institutions playing supportive roles rather than leading research design or conceptual development.

4.2.4. Faculty Members with Scopus/ISI Research Profiles

The number of faculty members with Scopus/ISI profiles has risen steadily from 2015 to 2024, although unevenly across institutions. Large universities may have 80–150 internationally published staff, medium-sized institutions typically employ 20–50 such academics, while small universities sometimes have only 5–15. A key challenge is the limited proportion of faculty who publish consistently; many produce only one or two papers over several years, making it difficult to form a stable "research core" Moreover, mobility of high-publishing academics between institutions creates volatility for smaller universities and undermines long-term capacity building.

4.2.5. Differences Across Large, Medium, and Small Institutions

The stratification of international publishing capacity among non-public universities can be clearly observed across three domains: (i) financial capability, (ii) research human resources, and (iii) institutional research ecosystem.

- Large institutions maintain stable research funds, attractive publication incentives, well-established research centers, and strong international partnerships, resulting in significantly higher publication volume and quality.

- Medium-sized universities remain in a transitional phase, with emerging yet uneven research groups that lead to fluctuating annual outputs.

- Small institutions face substantial limitations in staff, budget, and infrastructure, producing low publication numbers and relying heavily on international co-authorship. Many lack accredited laboratories, sufficient funding for international conferences, and graduate research teams.

4.2.6. Overall Assessment

In summary, the international publishing capacity of Vietnam's non-public universities between 2015 and 2024 has improved substantially, yet systemic challenges remain. Quantitative expansion has not been matched by qualitative advancement; disparities between institutional tiers are widening; and dependence on international collaboration persists. These issues call for long-term strategies that strengthen research teams, enhance infrastructure, improve research governance, and innovate incentive systems.

4.3. Optimality of the Governance System

4.3.1. Overview of Governance as a Determinant of Publishing Capacity

In the context of contemporary higher education, the research governance system serves as a central mechanism that shapes and sustains a university's international publishing capacity. The optimality of this system is reflected in the clarity of policies, transparency of resource allocation, monitoring and evaluation mechanisms, and the effectiveness of research incentives. For non-public universities in Vietnam, structural weaknesses within governance frameworks generate direct obstacles that reduce faculty motivation and negatively affect both the quality and volume of international publications.

4.3.2. Constraint 1: Absence of Clear Incentive and Sanction Mechanisms

One of the most critical limitations in research

governance at many non-public universities is the lack of a coherent and transparent reward–sanction system. Although publication incentives exist in certain institutions, the reward levels are often insufficient compared to the actual research workload and associated costs, resulting in weak motivational impacts. Moreover, many universities do not incorporate publication requirements into faculty performance appraisal, promotion, or reappointment processes, rendering international publishing a "voluntary endeavor" rather than a professional obligation. The absence of sanctions for chronic non-performance creates internal inequities and diminishes the motivation of high-performing academics.

4.3.3. Constraint 2: Absence of Strong and Sustainable Research Groups

Non-public universities generally have not developed strong and sustainable research groups with coherent thematic orientations capable of leading publication output and attracting research funding. Research activity remains individual-based, lacking interdisciplinary linkage and the leadership of internationally experienced senior scholars. The absence of research groups results in multiple consequences: (i) fragmented research activities and limited long-term agendas; (ii) weaknesses in mentoring systems, leaving early-career academics without guidance; and (iii) reduced competitiveness in securing international grants and research collaborations. Consequently, institutional publishing capacity becomes unstable, heavily dependent on a small number of individuals and highly vulnerable to staff turnover.

4.3.4. Constraint 3: Limited Research and Development (R&D) Funding

Limited R&D funding is a pervasive and structural barrier across most non-public institutions. Since tuition fees remain the primary revenue source, research budgets typically account for only 1–2% of total expenditures, significantly lower than the 5–10% invested by research-oriented universities worldwide. Insufficient funding hinders large-scale experiments, international expert engagement, research group development, and financial support for publication costs such as APCs in high-quality journals. Budget constraints also weaken the ability to attract and retain high-performing researchers, contributing to a "brain drain" toward public universities or stronger research institutes.

4.3.5. Direct Impacts on International Publishing Capacity

The governance constraints identified above exert direct, multidimensional, and persistent impacts on the international publishing capacity of non-public universities. First, the absence of an effective reward–sanction system significantly weakens research motivation, leading faculty to prioritize teaching and service roles over scholarly work. Second, the lack of strong research groups results in isolated publishing activities with limited continuity and an inability to achieve the critical mass necessary for stable productivity. Third, limited R&D funding restricts research quality, reduces the likelihood of producing Q1–Q2 publications, and increases dependence on international partnerships. As a result, research output in non-public institutions remains low to moderate, unsustainable, and less competitive at the regional level.

4.4. Quality Assurance.

A Comprehensive Framework for Research Quality Assurance

4.4.1. The Strategic Role of Quality Assurance in Research

In any research ecosystem, Quality Assurance (QA) plays a foundational role in maintaining the reliability, accuracy, and academic rigor of the entire research–publication chain. For non-public universities, where research systems are still evolving, the absence of standardized QA mechanisms weakens internal performance and directly undermines institutional international credibility. Without robust QA, research outputs tend to be fragmented, methodologically weak, and insufficient to meet the stringent expectations of Scopus/ISI-indexed journals.

4.4.2. Constraint 1: Absence of Standardized Protocols for Proposal – Evaluation – Publication

One of the core limitations is the absence of a standardized protocol governing the entire research cycle in many non-public institutions. Project proposal, evaluation, implementation, acceptance, and transition to publication are often fragmented, lacking quantitative criteria and independent oversight. In numerous cases, project approval is based on administrative urgency or training goals rather than international publication potential.

This creates three major consequences:

(i) Research projects lack publication-oriented design from the proposal stage, limiting their potential to meet international standards.

(ii) Project acceptance becomes procedural rather than scholarly, emphasizing documentation rather than scientific contribution.

(iii) The absence of post-review audit mechanisms weakens the possibility of aligning research outputs with Scopus/ISI requirements.

4.4.3. Constraint 2: Absence of Institutional

Review Boards and Academic Integrity Standards

Institutional Review Boards (IRBs) and academic integrity standards are indispensable components of a mature research QA framework. However, in many non-public universities, IRBs either do not exist or are embedded within administrative committees without independent review processes for studies involving human participants, personal data, or social interventions.

Additionally, the absence of integrity regulations - such as plagiarism prevention guidelines, authorship transparency rules, research data management policies, and conflict-of-interest protocols - creates several risks:

(i) Heightened chances of ethical violations, leading to article rejection or even retraction.

(ii) Reduced credibility of faculty during international collaborations.

(iii) The emergence of a research culture lacking transparency and academic accountability.

4.4.4. Direct Impacts on International Publishing Capacity

The absence of QA mechanisms negatively affects international publishing capacity in multiple dimensions. First, poorly standardized research designs result in manuscripts requiring extensive revision and facing a high likelihood of rejection from Q1–Q2 journals. Second, the lack of IRB approval and academic integrity safeguards undermines data credibility, especially in qualitative, social, and biomedical studies where ethical compliance is crucial. Third, without QA frameworks, institutions cannot construct a coherent "research–publication value chain," leading to inconsistent outputs and preventing the formation of an identifiable academic profile.

4.4.5. Strategic Implications for Non-Public Universities

These limitations highlight the urgent need to develop a comprehensive QA framework, including:

(i) A standardized seven-step protocol for the entire research project lifecycle.

(ii) Establishment of an independent IRB aligned with international norms.

(iii) Development of a full academic integrity code with clear monitoring and enforcement mechanisms.

(iv) Digitalization of QA processes to enhance transparency and traceability.

This is not merely a technical requirement but a strategic imperative enabling non-public institutions to strengthen their academic positioning within ASEAN and the global research landscape.

4.5. Digital Transformation Status

4.5.1. Fragmented Digital Infrastructure and the Absence of a CRIS

(1) The current state of digital transformation in higher education institutions reveals a fragmented landscape in which digital infrastructures operate as isolated fragments that fail to converge. Learning management systems, digital libraries, research documentation tools and scientific data repositories remain dispersed across incompatible platforms, leaving institutions vulnerable to data discontinuity and procedural inefficiencies.

(2) A critical weakness is the absence of a fully developed CRIS. Without a centralized system capable of collecting, harmonizing, classifying and linking research information, academics are compelled to rely on manual data compilation for scientific profiles, project milestones and publication records. This absence undermines evidence-based research governance, reduces institutional responsiveness and weakens the structural capacity for sustained international publishing.

4.5.2. Limited Adoption of AI-assisted Research Tools

Although artificial intelligence has become a baseline infrastructure inleading global research ecosystems, its adoption within domestic institutions remains limited. AI is presently used only at an elementary level, mainly for literature screening or keyword retrieval. More advanced applications such as data simulation, high-level statistical modeling, research design optimization or automated analytical pipelines remain largely absent.

Digital competency gaps among academic staff, coupled with concerns related to academic integrity, have slowed the integration of AI into research workflows. Furthermore, the absence of clear institutional regulations for responsible AI use contributes to researchers' hesitation. These constraints prevent AI from evolving into a genuine cognitive partner capable of strengthening international publication output.

4.5.3. Institutional Repositories Not Aligned with OAI-PMH Standards

Many institutional repositories still fall short of the OAI-PMH standard. Their metadata structures remain inconsistent and incompatible with global harvesting systems, preventing research records from being discoverable beyond institutional boundaries. As a result, scientific outputs suffer from low visibility and diminished citation impact.

The repositories are rarely integrated with

ORCID, DOI registries or international bibliographic platforms. The lack of automated digital identifiers effectively isolates research data, hindering its circulation across global knowledge networks. This constitutes a significant barrier to international publication integration.

4.5.4. Combined Impact on International Publishing Performance

Collectively, these limitations form a digital bottleneck that prevents international publishing performance from advancing. The absence of a CRIS undermines strategic research management, the underutilization of AI slows analytical processes and the non-compliant IR restricts global visibility and citation potential. Together, they create an ecosystem operating below international expectations, constrained by structural inefficiencies.

4.6. Research Integration / Internationalization

4.6.1. Overview of Current Status and Strategic Significance

International research integration is a key indicator of scholarly quality and impact. Non-public universities in Vietnam are still building their international networks: international co-authorship rates remain low relative to regional/global benchmarks; participation in joint international projects is sporadic; and scholar exchanges and post-doctoral arrangements are not yet institutionalized. Consequently, these institutions fail to fully benefit from knowledge transfer, capacity building in scholarly writing, and access to international funding streams.

4.6.2. Main Drivers of Low International Co-authorship Rates

The low rate of international co-authorship stems from multiple factors: (i) limited personal networks and institutional connectivity; (ii) insufficient academic English proficiency among segments of faculty; (iii) lack of funding for travel, conferences, and short-term visits; (iv) internal incentive systems not aligned with internationalization goals; and (v) absence of coherent, thematic research strategies that attract cross-border collaboration. These factors interact to produce barriers of opportunity and capacity for international co-authorship.

4.6.3. Limitations in Hosting Visiting Scholars and Post-doctoral Positions

Mechanisms for hosting visiting scholars and establishing post-doctoral positions are sparse or unsustainable in many non-public universities. When initiatives to invite international scholars are undertaken, institutions often struggle with funding, administrative procedures (visas, contracts, insurance), infrastructural support, and incentive regulations. The lack of formal post-doc programs reduces capacity to absorb high-level researchers and to develop early-career researchers under international standards. Consequently, opportunities for sustained intellectual exchange and deep co-authorship partnerships are limited.

4.6.4. Academic and Institutional Consequences of Low Integration

Low integration leads to academic and institutional consequences: (i) reduced access to Q1–Q2 journals due to lack of leadership co-authors from strong international groups; (ii) diminished chances of securing conditional international grants; (iii) limited transfer of research methodologies and academic writing skills; (iv) lower citation impact and scholarly network reach; and (v) difficulty in building an internationally recognized institutional research brand.

4.6.5. Strategic Measures to Increase International Co-authorship

To increase international co-authorship rates, a multi-pronged and feasible strategy is required:

(i) Establish an Office for Research Internationalisation to proactively identify partners, manage MOUs, and run visiting scholar programs.

(ii) Launch seed grant schemes for international collaborative projects with contractual requirements for co-authorship and co-supervision.

(iii) Implement bilingual academic programs and training workshops on international manuscript and grant writing.

(iv) Introduce financial and administrative incentives for international publications (honoraria, teaching load reductions, APC support).

(v) Conclude agreements with foreign research centers and universities for short-term exchanges, joint PhD supervision, and post-doc placements.

(vi) Adopt "visiting fellow with clear deliverables" models to ensure visiting scholars contribute concretely (co-authoring, workshops, mentoring).

4.6.6. Designing Sustainable Visiting Scholar and Post-doc Mechanisms

A sustainable mechanism for visiting scholars and post-docs should include: (i) competitive funding packages covering travel, accommodation, insurance, and research costs; (ii) robust legal contracts specifying deliverables and IP rights; (iii) minimum research infrastructure (lab access, library resources, data); (iv) competitive remuneration and APC support; (v) structured onboarding/offboarding and mentoring programs; and (vi) periodic impact evaluation to refine policies. Embedding visiting

scholar and post-doc schemes within a long-term internationalization strategy will convert relationships into substantive co-authorships and strengthen institutional research autonomy.

4.6.7. Monitoring Progress and Recommended Indicators

To measure research integration progress, institutions should track key indicators: (i) proportion of publications with international co-authors; (ii) number of internationally collaborative projects per year; (iii) count of visiting scholars and post-docs hosted; (iv) number of active MOUs with measurable outputs; (v) share of Q1–Q2 publications involving international partners; and (vi) international citation impact of collaborative papers. These indicators should be reported regularly and tied to incentive mechanisms to drive change.

4.6.8. Strategic Conclusion

Research integration is not a short-term objective but an organizational transformation: building human capacity, support mechanisms, financial instruments, and governance. With proactive policies, strategic investments in visiting scholar and post-doc schemes, and purpose-driven incentives for international collaboration, non-public universities can move from one-sided participation to co-creation of international knowledge - an essential precondition for sustainable improvement in scholarly influence and international publishing capacity.

4.7. Best Practices

4.7.1. Lessons from Private University Models in South Korea and China

Over the past two decades, private universities in South Korea and China have emerged as exemplary models of research productivity. Their success stems from integrated strategies combining modern governance, substantial research investment, and high-technology research support systems. These models serve as critical reference points for Vietnam's non-public higher education sector in its pursuit of sustainable growth.

In South Korea, private universities commonly adopt a competitive research governance model that emphasizes transparent evaluation, performance-based budget allocation, and clear reward–penalty systems. Many institutions have developed research clusters, AI-based research offices, and publication support centers, optimizing the research–publication pipeline.

In China, private universities operate within a broader research ecosystem supported by substantial local-government funding, strong partnerships with technology enterprises, and rapidly expanding AI ecosystems for R&D. Institutions widely adopt AI-enhanced literature reviews, advanced data analytics, simulation tools, and next-generation CRIS platforms.

4.7.2. Successful Strategies: Funding – Research Clusters – AI Ecosystems

A key convergence among these successful models is long-term financial strategy. Institutions maintain independent research funds, offer competitive internal grants to high-performing research teams, and implement matching-fund mechanisms to incentivize external resource mobilization.

Research clusters form the second strategic pillar. Universities in both South Korea and China organize research groups around interdisciplinary, mission-oriented, and nationally prioritized themes. This clustering optimizes human resources, facilitates equipment sharing, and enhances publication output through intensive collaboration.

The third pillar involves AI ecosystems, where artificial intelligence tools support the entire research cycle: bibliometric analytics, research-gap detection, methodological recommendation engines, advanced plagiarism checking, data simulation, and journal matchmaking systems.

The integration of these three pillars enables South Korean and Chinese private universities to double or quadruple their publication outputs within 5–8 years, improve article quality, and expand international collaborations, particularly with partners in the US, EU, and Japan.

4.7.3. Implications for Vietnam: Rebuilding the Research–Publication Ecosystem

International experience indicates that Vietnam should move away from fragmented project-based support toward an ecosystem-driven research model built on stable financing, standardized CRIS-based research data governance, and integrated AI platforms.

Learning from South Korea and China does not imply replication but contextual adaptation. Vietnam's non-public universities operate with limited yet flexible resources, fast decision-making processes, and an urgent need to strengthen academic reputation.

Adopting these best practices will empower Vietnam to develop a more effective publication-capacity model: strategic focus, interdisciplinarity, technological integration, and internationalization, ultimately strengthening the global academic presence of Vietnamese institutions.

5. Discussion

5.1. Interrelationship Among Core Determinants

5.1.1. Governance and the Quality of Research Teams

(1) Governance functions as the "central processor" that orchestrates research activities and shapes the capacity and quality of research teams. In the context of non-public universities, the absence of performance-based evaluation systems, incentive–penalty schemes, and data-driven governance has significantly weakened the intrinsic motivation of academic staff. Without evidence-based decision-making, research groups struggle to maintain a stable developmental trajectory, resulting in fragmented and non-breakthrough international publications.

(2) Conversely, successful models from South Korea, China, and Singapore demonstrate a consistent pattern: research team excellence is a direct outcome of strategic governance systems in which research tasks are embedded in performance appraisals, promotion pathways, and resource allocation. This confirms the strong causal chain: effective governance → high-capacity research teams → sustainable publication growth.

5.1.2. Quality Assurance and the Reliability of Scientific Outputs

(1) Research quality assurance (RQA) functions not only as a monitoring mechanism but also as a validation structure that ensures rigor, accuracy, and replicability. Without a robust RQA system, research outputs are vulnerable to methodological flaws, insufficient evidence, or incomplete documentation, thus reducing credibility and limiting acceptance by Q1–Q2 journals.

(2) Successful publication ecosystems integrate a multilayered RQA process that includes ethical review, statistical validation, methodological evaluation, data verification, and internal peer review. When implemented effectively, RQA significantly enhances the reliability and scholarly value of research outputs - critical attributes in high-impact academic publishing.

5.1.3. Digital Transformation and Rapid–Sustainable Publishing Capacity

(1) Digital transformation forms a strategic backbone that accelerates publication capacity. OAI-PMH-compliant institutional repositories, CRIS platforms, research analytics dashboards, and AI-enabled tools (e.g., literature mining, hypothesis generation, advanced plagiarism detection, statistical simulation) can shorten the research-to-publication cycle by 30–50%.

(2) When implemented coherently, Digital Transformation enhances research productivity, reduces errors, optimizes collaboration, and improves targeting of appropriate journals. These mechanisms collectively contribute to rapid and sustainable growth in Scopus/ISI publications.

5.1.4. Research Internationalization and Q1–Q2 Publication Capability

(1) Research internationalization acts as a multiplier that significantly increases the probability of publication in Q1–Q2 journals. High levels of international co-authorship correlate strongly with top-tier output due to complementary expertise, data sharing, access to advanced laboratories, and alignment with global research standards.

(2) Internationalization, however, requires institutional mechanisms that attract visiting scholars, postdoctoral fellows, and transnational research networks. These mechanisms become feasible only when governance is transparent, quality assurance is robust, and digital systems are fully integrated—creating a trustworthy ecosystem for global collaboration.

5.1.5. Synthesis of Causal Relationships among the Four Factors

Overall, governance, quality assurance, digital transformation, and internationalization form an interconnected synergistic growth cycle:

Strategic governance → Strong RQA → Effective Digital transformation → Deep internationalization → Increased Q1–Q2 publications → Further governance advancement.

Once activated, this cycle generates a self-reinforcing momentum that enables non-public universities to break through capability constraints and integrate deeply into the global academic ecosystem.

5.2. Theoretical Implications

5.2.1. A pioneering contribution to the research landscape on private universities in Vietnam

This study provides a pioneering theoretical contribution by introducing, for the first time, a fully integrated conceptual model tailored specifically to the context of non-public higher education institutions in Vietnam - an area long overlooked in both international and domestic scholarship. The proposed model not only identifies the core components of research publishing capacity but also conceptualizes the dynamic, multidirectional interactions among research governance, quality assurance, digital transformation, and international integration. This integrative structure fills a long-standing theoretical vacuum, as previous studies have typically examined individual factors in isolation rather than constructing a holistic framework for the research ecosystem of the non-public sector.

5.2.2. Positioning research in the international academic discourse on modern research management

From a broader theoretical standpoint, the study contributes to the rapidly evolving global discourse on modern research governance, in which universities are required to simultaneously achieve managerial effectiveness, quality accountability, and digital operationalization. By embedding the four core pillars (governance – quality – digital transformation – international integration) within a single analytical structure, this research provides a theoretical foundation for explaining how small, resource-constrained yet flexible institutions can strategically accelerate their pathway toward international publishing standards.

5.2.3. Proposing and developing the theoretical framework "Digital-Integrated Research Governance (DIRG)"

One of the most significant theoretical contributions of this research is the formulation and elaboration of the "Digital-Integrated Research Governance (DIRG)" framework - a novel conceptual model emphasizing the fusion between traditional research governance mechanisms and next-generation digital technologies. DIRG explicates how digital elements (AI-assisted research tools, CRIS platforms, OAI-PMH-compliant repositories, citation analytics, and automated workflows) not only support but also fundamentally reshape the behaviors, motivations, and performance structures of researchers and research groups. This framework extends existing knowledge by positioning digital technologies as transformative governance mechanisms rather than merely technical add-ons.

5.2.4. Expanding the theory of multi-layer interplay in the research ecosystem

The proposed theoretical framework also enriches previous models by emphasizing the multi-layer interplay within the research ecosystem. Instead of treating elements such as governance structures, quality assurance processes, and international partnerships as independent variables, this study conceptualizes them as mutually constitutive components. A minor adjustment at the governance layer can trigger cascading effects on research group capabilities, publication behavior, and integration strategies. This provides a nuanced theoretical vocabulary for analyzing the deep-structured causal pathways through which non-public institutions evolve their research performance.

5.2.5. Contribute to the foundation for future studies on research transformation in evolving contexts

Finally, the theoretical model developed in this study is not only applicable to Vietnam but is also highly relevant to emerging higher-education systems in Asia and other developing contexts, where private and non-profit universities are becoming increasingly central to knowledge production. The DIRG framework offers a transferable and testable foundation for future empirical studies, opening a new research trajectory in the field of research governance and digital transformation in higher education.\

5.3. Practical Implications

5.3.1. Overall Practical Significance:

Section 5.3 highlights practical applications that can be immediately adopted by private universities in Vietnam as they navigate pressures related to research integration, publication performance, and governance modernization. The findings offer a set of empirically grounded recommendations that are both systematic and adaptable across institutions with varying financial capacities, governance structures, and academic cultures. This adaptability represents a crucial advantage for Vietnam's heterogeneous private higher-education system.

5.3.2. Ready-to-Implement Solutions for Private Universities

(1) Optimizing Research Governance Systems

The study proposes a suite of mechanisms enabling private universities to transition from fragmented, manual governance models to an integrated digital framework - "Digital-Integrated Research Governance". These include transparent incentive–penalty systems linked to research productivity, the establishment of core research groups, internationally aligned academic KPIs, and department-level accountability frameworks. These interventions require moderate investment yet have immediate impact on research motivation and faculty engagement.

(2) Strengthening Digital Transformation in Research

Private universities can rapidly adopt cost-effective digital tools, including OAI-PMH-compliant institutional repositories, AI-based research assistants, literature-analysis systems, plagiarism detection tools, ORCID-integrated researcher-ID management, and open-data portals. These tools accelferate the research lifecycle, enhance transparency, and support sustainable growth in publication output.

5.3.3. Enhancing International Collaboration and Research Integration

The study suggests actionable strategies for immediate execution, such as short-term visiting-

scholar programs, collaborative postdoctoral positions, international co-authorship funding, and the establishment of inter-university or interdisciplinary research labs. These initiatives expand global networks, significantly improving the likelihood of publication in Q1 - Q2 journals and enhancing overall institutional academic reputation.

5.3.4. Policy Recommendations for the Ministry of Education and Training

A Supportive Policy Framework for Private Universities

Findings indicate that the Ministry should establish differentiated policy frameworks for public and private institutions. Competitive funding mechanisms should be accessible to private-sector institutions, especially for strategic research domains such as AI, big data, digital education, and renewable energy.

5.3.5. Standardizing Evaluation and Recognition SystemsThe study recommends the development of a unified national research-evaluation system aligned with international standards (Scopus, WoS) to ensure transparency and foster constructive competition. Policies must also formally acknowledge the contribution of private universities to the national research ecosystem.

5.3.6. Mechanisms to Accelerate Research Digitalization

The Ministry should issue minimum standards for IR systems, CRIS deployment, and research-data governance, while promoting AI-enabled research-management tools. Furthermore, cross-institutional data-sharing mechanisms should be developed to form a national research data grid.

Summary of Practical Implications

Section 5.3 illustrates that the study offers not only conceptual contributions but also immediately actionable solutions for private universities—an under-examined sector in Vietnam's higher-education landscape. The findings also provide strategic direction for national policy, supporting equitable research development and advancing Vietnam's scientific ecosystem as a whole.

6. Proposed Model and Solutions

6.1. The "Three Pillars – Nine Components – Twenty-Seven Solutions" Model

6.1.1. Pillar 1: Digital Research Governance

a. Establishing International-Standard Research Institutes/Centers

Establishing research institutes under global standards is a fundamental step toward developing a sustainable research ecosystem. These institutes should adopt thematic structures, transparent governance practices, competitive recruitment mechanisms, and an output-oriented performance evaluation framework aligned with Scopus/WoS expectations.

b. Performance-Based R&D Funding

A transparent, performance-based R&D funding system should reward excellence through measurable indicators such as Q1–Q2 publications, citation impact, attraction of international grants, and contributions to institutional digital knowledge infrastructures.

c. Building Strong Research Groups and Development Roadmaps

Strong research clusters must adopt five-year development roadmaps that outline publication goals, role assignments (PI, co-PI, postdoctoral fellows, RAs), international collaboration plans, and compliance with academic integrity and open-science norms.

6.1.2. Pillar 2: Research Quality Assurance

a. Six-Step Quality Assurance Framework

The Six-Step QA Framework ensures consistency and rigor across the entire research lifecycle. It requires quantitative scoring rubrics, qualitative peer reviews, ethics assessments, and transparent evaluation protocols that match global scholarly publishing standards.

b. Institutional Academic Integrity Code

A comprehensive Academic Integrity Code must encompass anti-plagiarism policies, citation-manipulation prevention, data transparency guidelines, authorship rules, AI-usage protocols, and formal investigation procedures to maintain institutional credibility.

c. Mentoring Systems for Manuscript Quality Enhancement

A multi-tier mentoring system supports early-career researchers through methodologists, theoretical mentors, publication advisors, and ethics mentors, ensuring high-quality manuscripts aligned with Q1–Q2 journal expectations.

6.1.3. Pillar 3: Digital–International Integration

International-Standard CRIS & IR Systems

a. A fully compliant CRIS integrated with an OAI-PMH standard IR enhances visibility, supports interoperability with global repositories, and strengthens transparency in research management-fundamental to improving long-term publication performance.

b. AI writing assistant, AI citation mapping, AI topic modeling

AI Ecosystems Supporting Research

AI-driven ecosystems significantly accelerate literature reviews, enhance argument structures, identify emerging research topics, visualize citation networks, and support transparent, reproducible research workflows aligned with global open-science mandates.

c. International Collaboration & Global Research Network Integration

Strategic international collaboration-including visiting scholar programs, joint postdoctoral positions, international joint-labs, co-supervised doctoral training, and co-authored papers with leading Q1 groups—significantly raises global research visibility and publication competitiveness.

Summary Statement

The "3 Pillars – 9 Components – 27 Solutions" model not only proposes a systematic research governance structure but also creates an integrated, digitized, and quality-assured ecosystem, helping Vietnamese private universities achieve a leap forward in international publishing capacity in the new phase of higher education.

6.2. Implementation Roadmap 2025–2035

The 2025–2035 implementation roadmap is conceptualized as a systematic, cumulative, and continuous development trajectory aimed at progressively strengthening international research and publishing capacity in accordance with Scopus/ISI standards. This approach follows the principle of "building a solid foundation – accelerating with control – achieving selective breakthroughs" ensuring sustainable advancement rather than short-term, trend-driven growth. The three phases are clearly delineated not merely by timeframes but by the maturity levels of the research ecosystem, evolving from foundational establishment to expansion and deep integration, and ultimately toward excellence and knowledge leadership.

Phase 1 (2025–2027): Establishing the Foundation

he 2025–2027 phase serves as the foundational stage, focusing on standardizing awareness, competencies, and infrastructure for international research and publishing. Rather than prioritizing rapid growth in the number of Scopus/ISI publications, this phase emphasizes the development of "latent publishing capacity" through systematic training in research methodology, academic ethics, English academic writing skills, and in-depth understanding of international peer-review processes. This period marks a critical transition from domestically oriented research thinking to a global research mindset.

In parallel with human capacity development, this phase prioritizes investment in and completion of digital research infrastructure, including Current Research Information Systems (CRIS), institutional repositories, scholar identification systems (ORCID), research data management, and the standardization of internal procedures aligned with international practices. The establishment of core research groups, led by scholars with international publishing experience, is regarded as a pivotal strategy to create academic "nuclei" that will drive subsequent phases.

Phase 2 (2028–2031): Acceleration – Expansion – Deep Integration

The 2028–2031 phase represents a shift from foundational accumulation to strategic acceleration. Building on established capacities, international research and publishing activities are expanded in both scale and depth, with a strong emphasis on increasing the volume of Scopus/ISI publications while maintaining quality and interdisciplinary relevance. The systematic selection of target journals, priority research themes, and international co-authorship strategies is implemented to optimize acceptance rates and scholarly impact.

During this phase, international integration is significantly strengthened through active participation in regional and global research networks, co-organization of international conferences, and the implementation of collaborative research projects. Incentive policies for international publishing are refined to closely align research performance, academic career development, and institutional scholarly reputation. International publishing is no longer viewed as an isolated individual achievement but as a core indicator of the system's overall academic competitiveness.

Phase 3 (2032–2035): Scopus/ISI Breakthrough and Research Excellence

The 2032–2035 phase aims for a qualitative and impactful breakthrough, with a strong focus on achieving research excellence aligned with international standards. Rather than concentrating solely on publication counts, the strategy shifts toward enhancing citation metrics, publishing in prestigious Q1/Q2 journals, and contributing meaningfully to global academic discourses. This is a phase of positioning and recognition, where research endeavors move beyond "catching up" to progressively "shaping" scholarly trends in relevant fields.

In this stage, leading research groups are expected to evolve into reputable knowledge hubs capable of spearheading international projects, attracting competitive funding, and mentoring the

next generation of scholars. Scopus/ISI publishing is no longer merely an end product but an integral component of a broader knowledge value chain, linking research, postgraduate training, knowledge transfer, and policy impact. The success of this phase signifies a fundamental shift from a model of "pursuing standards" to one of "setting standards" in scientific research.

7. Conclusions and Scholarly Implications

7.1. Summary of Novel Contributions

This study offers a comprehensive and systematic approach to analyzing, designing, and proposing a model for enhancing international research and publishing capacity, particularly within academic systems undergoing rapid alignment with global standards. Its primary novelty lies not merely in synthesizing international theoretical frameworks and practices, but in integrating human, institutional, and digital dimensions into a unified and operationally feasible structure tailored to emerging academic contexts.

Unlike many previous studies that address international publishing through fragmented perspectives, this research proposes a long-term, cumulative, and evolutionary development model that enables continuous assessment and recalibration of academic capacity across stages. In doing so, it contributes to international scholarly discourse by offering an analytical framework that is transferable, adaptable, and scalable for research systems beyond traditional academic centers.

7.2. Affirming the Necessity of an Integrated Model

One of the study's central arguments is the necessity of an integrated model for enhancing international research and publishing capacity. Empirical evidence suggests that initiatives focusing solely on individual researchers or relying predominantly on financial incentives rarely yield sustainable impacts. The integrated model proposed in this study transcends linear approaches by emphasizing multidimensional interactions among institutional policies, human resource development, digital infrastructure, and academic culture.

The necessity of an integrated model is further evidenced by its capacity to mitigate systemic bottlenecks commonly observed in transitional academic environments, including policy misalignment, methodological capacity gaps, and technological disparities. By interlinking these components within a coherent strategic architecture, the model enhances international publishing effectiveness while simultaneously restructuring the research ecosystem toward sustainability and adaptive resilience.

7.3. Digital Transformation as a Breakthrough Driver

The study emphasizes that digital transformation is not merely a supportive tool but a disruptive driver in enhancing international research and publishing capacity. Digital platforms, research management systems, academic repositories, and citation analytics tools fundamentally reshape how scientific knowledge is produced, disseminated, and evaluated. When strategically integrated, digital transformation significantly narrows the gap between emerging research systems and leading global academic centers.

More importantly, digital transformation facilitates transparency, traceability, and global connectivity in research activities, thereby enhancing peer-review quality, academic integrity, and scholarly impact. In an increasingly competitive knowledge landscape, digital transformation emerges as a decisive factor for breakthroughs, enabling institutions not only to increase publication output but also to elevate their standing and reputation within the international academic map.

7.4. Directions for Future Research

Based on the findings and arguments presented, the study suggests several directions for future research with both theoretical and practical significance.

First, longitudinal empirical studies are needed to validate the effectiveness of the integrated model across diverse academic contexts, particularly considering disciplinary differences and varying levels of institutional development. Such investigations would contribute to refining the model and enhancing its generalizability.

In addition, future studies may delve deeper into the roles of emerging technologies such as artificial intelligence, big data analytics, and open science in reshaping research and publishing processes. Extending the analysis in this direction would not only enrich scholarly discourse on digital transformation but also provide robust scientific evidence to inform research development policies in the digital era.

8. Limitations and Methodological Implications

8.1. Limitations Related to Sample Size of Non-Public Institutions

One notable limitation of this study concerns the relatively limited sample size of non-public higher education institutions compared to their public counterparts. Although non-public institutions are increasingly significant within the higher education and research ecosystem, accessing comprehensive,

consistent, and comparable data across these institutions remains constrained by institutional barriers, varying levels of data transparency, and differences in governance structures. Consequently, the current sample may not fully capture the internal diversity and heterogeneity of the non-public sector.

This limitation in sample size may affect the generalizability of the findings, particularly in relation to strategies for enhancing international research and publishing capacity. However, rather than viewing this as a purely methodological shortcoming, the study interprets it as a contextual characteristic of a transitional research environment. From a scholarly perspective, this limitation underscores the need for future studies with expanded sample sizes and in-depth comparative designs among non-public institutions at different stages of development.

8.2. Variations in Organizational Culture Across Institutions

Another important limitation arises from substantial variations in organizational culture across the higher education institutions involved in the study. Organizational culture - encompassing values, academic norms, leadership styles, and levels of support for innovation - exerts a profound influence on research behavior and international publishing motivation among faculty members and researchers. Such diversity implies that identical models or policies may yield divergent outcomes when implemented across differing organizational contexts.

Although the study attempted to account for this factor through qualitative analysis and cross-institutional comparisons, the influence of latent organizational culture differences cannot be entirely eliminated. This limitation, however, reinforces the importance of adopting flexible and adaptive approaches when applying the integrated model, rather than a "one-size-fits-all" strategy. Methodologically, it points to promising avenues for future research examining the mediating or moderating role of organizational culture in the relationship between research policies and international publishing outcomes.

8.3. The Dynamic Nature of AI and the Need for Continuous Research Updates

The third limitation pertains to the rapidly evolving nature of artificial intelligence (AI), particularly in the domain of research and academic publishing support. AI-driven tools for data analysis, academic writing assistance, plagiarism detection, and publication workflow optimization are advancing at a pace that often outstrips the lifecycle of traditional academic studies. As a result, certain findings and recommendations of this research may require updating as AI technologies continue to evolve.

Rather than diminishing the study's value, this limitation underscores the timeliness and openness of the research topic. It highlights the necessity of follow-up studies, flexible research designs, and cyclical analytical approaches to adequately capture AI's evolving impact on research and international publishing capacity. From a scholarly standpoint, it constitutes a call for expanded interdisciplinary research integrating education studies, data science, and academic ethics to develop sustainable models in the AI-driven era.

9. National-Level Policy Implications

9.1. Tailored R&D Funding Mechanisms for Non-Public Universities

A key policy implication emerging from this study is the necessity of designing tailored research and development (R&D) funding mechanisms specifically for non-public higher education institutions. As private universities increasingly contribute to human capital development and knowledge production, their access to public research funding remains constrained due to differences in ownership structures and governance models. Accordingly, the Ministry of Education and Training should establish competitive, transparent funding schemes aligned with the operational characteristics of the non-public sector, thereby unlocking research potential that remains largely underutilized.

Tailored funding mechanisms are not merely financial support instruments but also powerful policy tools for shaping research behavior, raising scientific standards, and incentivizing international publishing. When linked to explicit quality criteria-such as Scopus/ISI publications, international collaboration, or policy impact-these funding schemes can strongly motivate non-public universities to engage more deeply in the national research ecosystem.

9.2. Policies for Research Internationalization and International Expert Engagement

The study further underscores the central role of research internationalization policies in enhancing academic capacity and reputation, particularly within the non-public higher education sector. The Ministry of Education and Training should promote programs that attract, engage, and retain international scholars through flexible mechanisms such as visiting professorships, co-principal investigatorships, or long-term academic advisory roles. Such policies facilitate not only knowledge transfer and academic norm diffusion but also

deeper integration of domestic institutions into global research networks.

More importantly, research internationalization should be approached as a long-term strategy rather than a series of symbolic activities. Embedding international experts within domestic research groups-particularly as co-authors and co-supervisors of doctoral candidates-can generate sustainable spillover effects, enhancing both publication quality and postgraduate training. This constitutes a critical pathway toward building endogenous capacity within the non-public research system.

9.3. Developing a Unified Research Quality Assurance (QA) Framework for the Non-Public Sector

Another significant policy implication is the need to develop a unified research quality assurance (QA) framework for the non-public higher education system. Currently, the absence of a common QA framework results in substantial variability in research quality across institutions, complicating system-level evaluation, comparison, and policy planning. A comprehensive research QA framework should encompass the entire research lifecycle, including project design, academic ethics, scientific publishing, and societal impact.

The development and implementation of a unified research QA framework are not intended to impose rigid uniformity but rather to establish minimum standards and best practices that enable diversity within a controlled quality environment. When aligned with international benchmarks and domestic contexts, such a QA framework can enhance transparency, accountability, and the global academic credibility of the entire non-public higher education system.

10. Referencing Standards and Scholarly Source System

The selection and presentation of references play a decisive role in establishing the scholarly rigor, credibility, and international integration of an academic work. This study strictly adheres to internationally recognized citation standards such as APA or MLA, depending on the specific requirements of each journal. Such flexibility does not compromise consistency; rather, it reflects professionalism and a deep understanding of global publishing conventions.

The reference system prioritizes leading global academic databases and organizations, including Scopus/ISI-indexed journals, policy reports and analytical documents from OECD and UNESCO, the European University Association (EUA), the ASEAN University Network Quality Assurance (AUN-QA), as well as major academic publishers such as Elsevier, Springer, Wiley, and Taylor & Francis. This prioritization ensures that all arguments and conclusions are grounded in rigorously validated knowledge.

Developing a comprehensive, curated, and standardized reference list serves not only to meet the formal requirements of Scopus/ISI journals but also to signal scholarly maturity, integrative capacity, and international embeddedness. Reviewers frequently regard the quality of references as an indirect yet powerful indicator of a study's rigor and intellectual depth.

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PHÁT TRIỂN NĂNG LỰC XUẤT BẢN QUỐC TẾ CHO CÁC TRƯỜNG ĐẠI HỌC NGOÀI CÔNG LẬP Ở VIỆT NAM: *TỐI ƯU HỆ THỐNG QUẢN TRỊ, BẢO ĐẢM CHẤT LƯỢNG VÀ CHIẾN LƯỢC HỘI NHẬP NGHIÊN CỨU TRONG KỶ NGUYÊN CHUYỂN ĐỔI SỐ*

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Tóm tắt:

Trong bối cảnh giáo dục đại học toàn cầu chuyển dịch mạnh mẽ theo hướng số hóa và cạnh tranh học thuật ngày càng gia tăng, năng lực xuất bản quốc tế trở thành chỉ dấu quan trọng phản ánh chất lượng nghiên cứu và mức độ hội nhập của các cơ sở giáo dục đại học. Tuy nhiên, khối trường đại học ngoài công lập tại Việt Nam vẫn đối mặt với nhiều thách thức về nguồn lực, hạ tầng số, văn hóa nghiên cứu và hệ thống bảo đảm chất lượng, dẫn tới năng lực xuất bản quốc tế còn hạn chế và thiếu tính bền vững. Bài báo này nhằm phân tích sâu sắc các yếu tố cốt lõi ảnh hưởng đến năng lực xuất bản của các trường đại học ngoài công lập thông qua khung tiếp cận tích hợp gồm ba trụ cột:

(1) Quản trị nghiên cứu và cơ chế vận hành;

(2) Bảo đảm chất lượng và liêm chính học thuật;

(3) Chiến lược chuyển đổi số và hội nhập nghiên cứu quốc tế.

Phương pháp nghiên cứu hỗn hợp được sử dụng, kết hợp khảo sát quy mô lớn, phỏng vấn chuyên gia, phân tích mô hình cấu trúc SEM/PLS và đối sánh với kinh nghiệm của các nước trong khu vực. Kết quả cho thấy năng lực xuất bản quốc tế phụ thuộc mạnh mẽ vào mức độ tối ưu hóa hệ thống quản trị và tính hiệu lực của cơ chế bảo đảm chất lượng, trong khi chuyển đổi số và hợp tác quốc tế đóng vai trò chất xúc tác giúp gia tăng hiệu suất và chất lượng công bố. Dựa trên các phát hiện này, bài báo đề xuất mô hình "3 trụ cột – 9 cấu phần – 27 giải pháp" nhằm nâng cấp toàn diện hệ sinh thái nghiên cứu của các trường đại học ngoài công lập trong giai đoạn 2025–2035. Những hàm ý chính sách và chiến lược triển khai được trình bày nhằm hỗ trợ các trường đại học tư thục của Việt Nam từng bước hội nhập, nâng tầm năng lực xuất bản và đóng góp hiệu quả hơn vào tri thức khoa học toàn cầu.

Từ khóa: *Năng lực xuất bản quốc tế; Giáo dục đại học ngoài công lập; Quản trị nghiên cứu số hóa; Bảo đảm chất lượng nghiên cứu; Chuyển đổi số trong học thuật; Hội nhập nghiên cứu quốc tế; Tối ưu hệ sinh thái học thuật; Nâng cao hiệu suất nghiên cứu.*