

Rethinking IMF: An Evolutionary Concept Analysis and Redefinition of Indicator Measurement Factor Analysis for Creative-Campus Projects

Nicholas Lachlan^{1,*}, Rizky Fredrin Terizla², April Lansonja³

¹*Rey Institute, United States*

²*Rey Incorporation, United States*

³*Pandawan Incorporation, New Zealand*

*Corresponding author: nicholaslach@rey.zone

Abstract

Indicator Measurement Factor Analysis (IMF) is a spreadsheet-based method for running projects that has been used at an Indonesian private university since 2019. Its published description is brief, its name has two readings, and the literature that cites it rarely says what it is. Combining an integrative review with Rodgers' evolutionary concept analysis, this paper examines how IMF has been described and used, derives its defining attributes and proposes a new definition for creative-campus projects. The corpus comprised the two founding texts, a 2019 blog post and a 2020 conference paper; the 46 works citing the paper in OpenAlex, of which the 16 in open-access Pandawan journals were coded for citation function; the documented structure of live IMF spreadsheets; and 38 recent studies on campus management, recognition and the creative economy. None of the coded citing works described, applied or extended IMF, and half omitted the paper's first author. Practice, by contrast, has moved well beyond print, adding countable output targets, task codes, evidence links, countdowns, closing rules and recognition. We define IMF as a low-cost, spreadsheet-native mission-management method in which a team declares a mission on a Viewboard, decomposes it into coded, evidence-linked tasks and measures achievement as verified outputs over declared targets, so that planning, organising, actuating and controlling become one visible, versioned and celebrated cycle. The definition has six dimensions and a bounded achievement measure. We argue that IMF meets three of four criteria for an essential creative-campus tool, and we state five testable propositions for the fourth.

Keywords: Indicator Measurement Factor Analysis; IMF; concept analysis; integrative review; project management; POAC; creative campus; creative economy; performance measurement; Indonesia

1. Introduction

1.1 A Familiar Name with an Unsettled Meaning

Every organisation that runs projects needs some way to say what it is trying to achieve, who will do which part, how far the work has progressed and when it is finished. In Indonesian higher education these questions are usually framed in terms of the four classical management functions of planning, organising, actuating and controlling, abbreviated as POAC. The functions are taught in almost every management course, yet their translation into daily practice is uneven. University units increasingly rely on digital monitoring platforms to track grants, publications and student projects, and recent studies describe both the promise of such platforms and the frustration caused by fragmented tools, slow updates and unclear progress information [1, 2]. The gap between management theory and the way work is actually monitored is therefore not a historical curiosity

but a live operational problem.

Indicator Measurement Factor Analysis, usually shortened to IMF, is one response to this gap. It was introduced at Universitas Raharja in 2019 in a blog post titled “Why IMF?” on the iLearning blog of Prof. Untung Rahardja, written by Ninda Lutfiani, and was formalised in 2020 in a conference paper by Sudaryono, Untung Rahardja and Ninda Lutfiani in the *Journal of Physics: Conference Series* (vol. 1477, art. 032023, doi: 10.1088/1742-6596/1477/3/032023). The paper presents IMF as “a simple, low cost implementation tools that facilitate effective POAC control monitoring and implementation in project management”. The blog presents the same method as a way to complete technology projects that focuses on implementing POAC, and adds that IMF is also, in its words “coincidentally”, the abbreviation of Impossible Mission Force, the team in the *Mission Impossible* films. Since then the method has spread inside the university and its partner organisations. Spreadsheets titled “IMF” followed by the name of a programme, a team or an event are used to run research-grant applications, publication pipelines, accreditation tasks, teaching duties and community events.

The method has therefore lived two lives. In print it remains a six-page conference paper with a short model, a screenshot and a formula whose subscripts are lost in the published file. In practice it has become a shared working language that people use to organise missions. Neither life has been examined systematically. The 2020 paper is cited regularly, but it is not known how the citing works use it. The practice has evolved, but the changes have not been written down. And the method is now being proposed as the standard way to run projects in new settings, including the creative-campus programmes that link universities to Indonesia’s creative economy.

1.2 Why the Creative Campus Raises the Stakes

The creative economy has become an explicit policy priority in Indonesia. Undang-Undang (UU) No. 24/2019 on the Creative Economy defines it as the realisation of value added from intellectual property rooted in human creativity, cultural heritage, science and technology. Peraturan Presiden (Perpres) No. 37/2026, signed on 2 July 2026, establishes the creative-economy master plan (Rindekraf) for 2026–2045 and names among its priority programmes better creative-economy data, talent development, intellectual-property support and collaboration among government, academia, business, communities, media and financial institutions. Jakarta will host the fifth World Conference on Creative Economy (WCCE) on 21–23 October 2026 under the theme “Inclusively Creative: Collective Continuity”, an event organised by Indonesia’s Ministry of Creative Economy (Kementerian Ekonomi Kreatif), whose public announcements are the source of the conference details given here. Universities are expected to contribute talent, prototypes, intellectual property and startups to this agenda, and Indonesian studies already document the role of campus incubators, technopreneurship courses and helix partnerships in doing so [3,4].

Creative-campus projects have a particular profile. They are carried out by teams that mix students, lecturers and outside partners; they run in cohorts tied to competitions, grant calls and exhibitions; and they produce outputs that can be counted and evidenced, such as prototypes, copyright records, papers, pitch decks, events and registered ventures [5,6]. They are also uncertain. Creative work rarely follows a linear plan, and many student teams depend on voluntary effort sustained by enthusiasm rather than formal obligation [7]. A method that is to run such projects must make goals and outputs explicit without stifling exploration, make every contributor’s part visible without turning recognition into surveillance, and produce records that partners outside the university can trust. Whether IMF can do this depends on what IMF actually is, and that question has not yet been answered with care.

1.3 Aim, Research Questions and Contributions

The aim of this paper is to clarify and redefine the concept of IMF so that it can serve as a rigorous and shared working method for creative-campus projects. Following the brief that initiated this

work, we first set out how others have described and used IMF, then propose a new definition and usage, and finally argue why IMF in its redefined form is an essential tool for building creative-campus projects. Three research questions guide the analysis.

RQ1. How has IMF been described and used in its founding texts, in the literature that cites it and in the spreadsheets through which it is practised?

RQ2. What are the defining attributes, antecedents and consequences of IMF, and how has the concept evolved since 2019?

RQ3. How should IMF be defined, and which construct dimensions should it have, if it is to serve as the working method for creative-campus projects?

The paper makes four contributions. First, it provides the first systematic review of how IMF has been described and cited, including a coded analysis of citation function in sixteen open-access citing works. Second, it documents the practice of IMF as it now exists, based on the structure of live IMF spreadsheets, without disclosing any personal data. Third, it offers a new formal definition of IMF with six construct dimensions and an unambiguous measure of achievement. Fourth, it states five propositions that link the redefined IMF to the outcomes of creative-campus projects and can be tested in future process and measurement studies.

1.4 Structure of the Paper

Section 2 describes the background: POAC and its implementation problem, the tradition of monitoring dashboards from which IMF emerged, and the creative-campus setting. Section 3 explains the method, an integrative review combined with an evolutionary concept analysis. Section 4 reports how IMF has been described and used. Section 5 presents the concept analysis. Section 6 proposes the new definition and construct dimensions. Section 7 argues that the redefined IMF is an essential tool for creative-campus projects and states five propositions. Section 8 discusses implications and limitations, and Section 9 concludes.

2. Background

2.1 POAC and the Implementation Problem

The four functions of planning, organising, actuating and controlling describe what managers do: decide what is to be achieved, allocate tasks and resources, mobilise people to act, and compare results with plans. Their attraction lies in their generality; the same four verbs describe the running of a firm, a faculty or a student team. The 2020 IMF paper treats POAC as “the de facto international standard” for project execution but argues that many people “do not possess the know-how of correctly implementing POAC”, that they are “often confused with the variety of available applications” and that the tools needed often require “big budgets”. The 2019 blog states the problem more bluntly: everyone claims to use POAC, very few claim to succeed with it, and its application is hindered because it requires tools that are sometimes expensive.

Recent Indonesian work on organisational performance points in the same direction. Studies of university governance link structured, entrepreneurial governance to better service, financial and sustainability performance, with leadership style as a partial mediator [8]. Research on startups emphasises adaptive performance management as part of human-resource practice [9], and work on time management proposes structured frameworks that combine prioritisation, scheduling, delegation and technology to improve completion times and visibility [10]. What these studies share is a recognition that management functions only become effective when they are supported by concrete routines and instruments that make plans, responsibilities and progress visible. Strategic-management research has also widened its scope from efficiency and competitive advantage to

equity and inclusion [11], which raises the further question of whose work management instruments make visible.

2.2 From Viewboards to IMF

IMF did not appear from nowhere. Between 2016 and 2019 a series of papers in journals of the Pandawan group described “Viewboards”, one-screen summary displays built with spreadsheets or web frameworks to monitor student payments, thesis defences, journal submissions, decrees and other campus processes. A search of the Pandawan catalogue used for this study found 23 distinct papers with “Viewboard” or “Rinfo” (the university’s family of form, sheet and group tools) in their titles between 2016 and 2022. Later Viewboard work extended the idea to association websites [12] and to the design of blockchain-based education displays [13]. The common idea is that the information a leader needs should be visible at a glance, at the top of the screen, without scrolling.

The 2020 IMF paper explicitly inherits this idea: its model has two parts, the IMF Viewboard and the IMF Content, and the Viewboard is described as “the main key to achieving IMF”, where users can display all the information they want “without having to scroll down to the bottom of the page”. The paper also cites an earlier study by its authors’ colleagues that applied the *vasTmind* method to monitor the percentage of completion of final-year students’ research projects. IMF can therefore be read as the point at which the Viewboard tradition was joined to an explicit management theory, POAC, and to a measurable notion of achievement. Studies of integrated campus information systems make the same point from a data perspective: accurate, transparent and timely information about academic work depends on deliberate data management [14].

2.3 Monitoring, Recognition and Motivation

A second strand of literature concerns the human side of measurement. Gamification research shows that rewards, challenges and point systems can increase engagement and retention in digital startups [15], and an experimental study of a gamified learning management system reported higher engagement, more participation in optional activities and higher assignment completion than in a traditional system [16]. Work on self-employment identifies rewards, autonomy and skill discretion as intrinsic job resources that mediate work engagement [17]. Research on Orange Servant Leadership links caring, ethically grounded leadership to happiness at work, work engagement and job performance [18], and a related study proposes Orange Technology as a humanistic counterweight to the risk that digital tools dehumanise education [19].

These findings matter for IMF because its practice combines measurement with recognition. Live IMF sheets rank contributors, name the most valuable contributors and celebrate early completion in automatically generated sentences. Such features can motivate, but they can also feel like surveillance if they are used to sanction rather than to celebrate. The literature on servant leadership and humanistic technology suggests that the meaning attached to measurement, and the care with which it is used, shapes whether it energises or exhausts people [18, 19].

2.4 The Creative Campus

The third strand concerns the setting in which IMF is now proposed. Indonesian research documents several routes by which universities contribute to the creative economy. Campus incubators support student and alumni ventures, and a recent incubator model was found practical and effective in fostering business ideas [3]; a study at Universitas Raharja analysed determinants of incubation success [20]. IT business incubation has been identified as a strategy for technology startups [5]. Knowledge management has been proposed as the means to turn individual ideas into organisational knowledge in the digital creative industry [7], and information technology has been shown to strengthen the creative economy’s contribution to sustainable tourism [21].

On the teaching side, project-based learning and design thinking are increasingly embedded in

technopreneurship and edupreneurship curricula [22, 23], and interdisciplinary learning factories have been associated with stronger innovation skills [24]. Artificial intelligence has been proposed as a means of allocating campus resources in support of entrepreneurial sustainability [25]. Entrepreneurship courses in information technology have been used to raise student creativity in the digital economy [26], and the place of fintech in the higher-education curriculum has been discussed as part of preparing graduates for digital finance [27]. Ecosystem studies show that digital platforms and penta-helix collaboration help integrate actors and resources around entrepreneurial innovation [4, 28], and machine-learning studies suggest that historical data can inform decisions about startup collaboration [29].

What these studies leave open is the operational layer: the routine by which a team of students and lecturers turns a creative idea into a finished, evidenced output on time. The creative-campus literature describes structures, curricula and outcomes, but rarely the working method that connects them. IMF is a candidate for that layer, and the remainder of this paper examines whether, and in what form, it can play the role.

3. Method

3.1 Design

The study combines two established qualitative approaches. The first is an integrative literature review, which allows theoretical, empirical and practice sources of different kinds to be included in one analysis provided that the sampling, data evaluation and synthesis are made explicit. This was necessary because the evidence about IMF consists of a blog post, a conference paper, citing articles of varied quality and spreadsheets used in daily work. The second is Rodgers' evolutionary concept analysis, which treats concepts as dynamic, shaped by use and context, and analyses them through their surrogate terms, attributes, antecedents, consequences, related concepts and exemplars. The evolutionary approach suits IMF better than static approaches because the concept has visibly changed between 2019 and 2026 and because the aim is not to fix a final meaning but to propose a definition fit for a new context.

The analysis followed Rodgers' phases, adapted to the sources available, as shown in Figure 1. We identified the concept and its surrogate terms; selected the realm and sample of sources; collected data on attributes, antecedents, consequences and related concepts; analysed the data thematically and across time; identified an exemplar from practice; and derived implications in the form of a definition, construct dimensions and propositions. The integrative-review component supplied the sampling and appraisal rules for each source type.

3.2 Sources and Sampling

Four corpora were assembled; they are summarised in Table 1.

The founding corpus consists of the two texts that introduced IMF: the 2019 blog post "Why IMF?", read in an archived copy dated 22 September 2019 because the live page was inaccessible, and the 2020 conference paper, read in the publisher's open-access PDF. Both texts were read in full. Quotations in this paper are copied verbatim from these sources, including their original wording; English renderings of Indonesian text are our translations and are marked as such.

The citing corpus was drawn from OpenAlex, which on 3 October 2026 listed 49 records citing the 2020 paper. Removing records duplicated under two DOI prefixes left 46 distinct works, published between 2020 and 2025: thirteen in IEEE conference proceedings, sixteen in open-access journals of the Pandawan group and seventeen in other journals and proceedings. The sixteen Pandawan works were retrieved in full text from the journals' websites, and in each we located the reference to the 2020 paper and every sentence in which that reference number was cited. The other thirty works were not coded, because several were not openly available and coding a convenience subset would have mixed populations; they are reported only by venue and year.

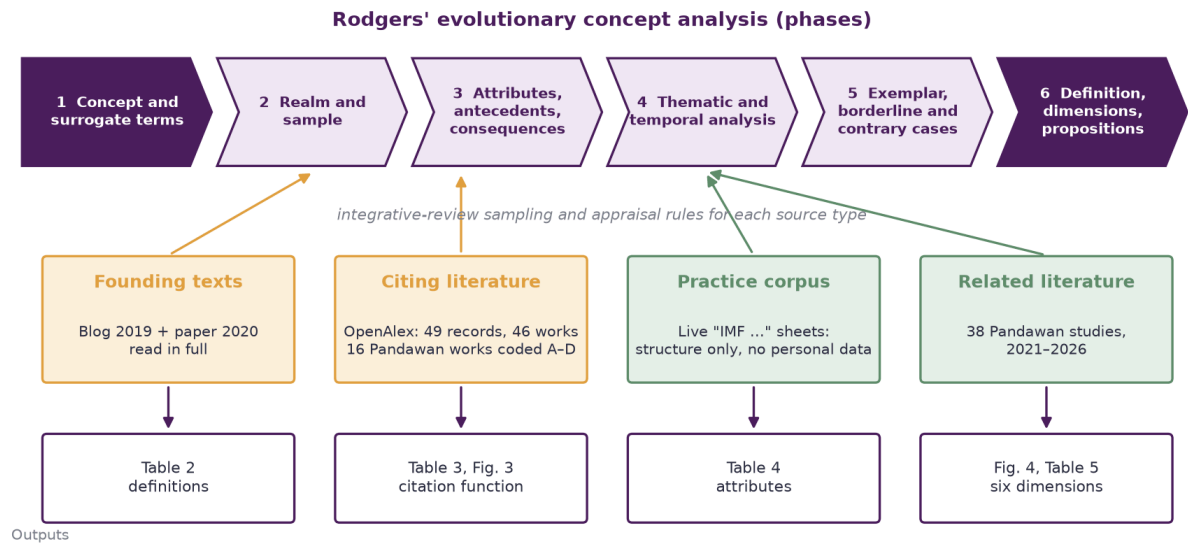


Figure 1. Study design: the six phases of Rodgers’ evolutionary concept analysis, the four corpora that feed them under integrative-review sampling rules, and the outputs reported in this paper.

Of these thirty, fifteen appeared in conference proceedings (thirteen IEEE conferences held in Indonesia between 2020 and 2022, and two other proceedings) and fifteen in journals; 26 have English titles and four Indonesian titles; and they were published in 2020 (6), 2021 (10), 2022 (7), 2023 (4), 2024 (2) and 2025 (1). Judging by their titles, the largest single group, thirteen works, concerns blockchain applications, a topic unrelated to project management, which suggests that the coded subset is unlikely to understate engagement with IMF, although only coding can confirm this.

The practice corpus consists of the documented structure of live spreadsheets titled “IMF ...”, which are owned by or shared with the originator of the method. Five were examined in depth through read-only access: sheets for a two-week sprint team (seven version tabs, created in 2023), a 2025 research-grant programme, a 2026 publication pipeline, a 2026 paper-processing cohort and a 2025/26 teaching semester. Others, dating from 2021 to 2024, were seen only through search snippets. Only headers, labels, formulas and layout were recorded. No names, contact details, scores of identifiable people or other personal data were extracted or are reported.

The related-literature corpus consists of 38 studies published from 2021 onward in Pandawan journals on campus management and monitoring, recognition and motivation, the creative campus and the creative economy. They were selected from a curated, DOI-verified collection of creative-economy studies and from the Pandawan catalogue, and they supply the context for antecedents, consequences and related concepts.

Table 1. Corpora, sampling and use in the analysis

Corpus	Content	Period	Size	Use in the analysis
Founding texts	Blog post “Why IMF?” (archived copy) and the conference paper introducing IMF (open-access PDF)	2019–2020	2 texts, read in full	Definitions, components, purpose, claimed consequences (Table 2)
Citing literature	Works citing the 2020 paper listed by OpenAlex; full texts of the open-access Pandawan works	2020–2025	49 records; 46 distinct works; 16 coded	Citation function and attribution (Table 3, Figures 2 and 3)

Corpus	Content	Period	Size	Use in the analysis
Practice	Structure (headers, labels, formulas, layout) of live spreadsheets titled “IMF ...”; no personal data	2021–2026	5 sheets in depth; others as snippets	Attributes and evolution in use (Sections 4.3 and 5)
Related literature	Recent Pandawan studies on campus management and monitoring, recognition and motivation, the creative campus and the creative economy	2021–2026	38 studies	Antecedents, consequences, related concepts, creative-campus argument [1, 3, 15]

3.3 Analysis

Extraction and synthesis followed four steps. First, each source was divided into units: sentences in the founding texts, labelled cells, formulas and section rows in the sheets, and abstracts and findings in the related literature. Second, every unit that bore on IMF was entered in a single extraction matrix with columns for source, date, verbatim text or structural feature, our translation where needed, and the analytic category to which it was provisionally assigned. Third, units were grouped by similarity within each category, and the groups were compared across sources and dates to see whether a feature was stable, elaborated or abandoned over time. Fourth, a recurring characteristic was treated as a defining attribute only if two conditions held: it was stated or implied in at least one founding text and recurred in practice, and it helped to distinguish IMF from at least one related concept or from the contrary case described in Section 5.5. Characteristics that recurred but failed the second condition were recorded as shared with related concepts; characteristics that were specific to one institution’s culture were recorded as contextual expressions of an attribute rather than as attributes in their own right.

The founding and practice corpora were analysed by extracting every statement or structural feature that bears on what IMF is (attributes), what must be in place for it to occur (antecedents), what it is said or designed to produce (consequences), which other terms are used for it (surrogate terms) and which neighbouring concepts it resembles (related concepts). Extracts were tabulated by source and date so that changes over time could be traced.

Citation function in the citing corpus was coded with a four-category scheme defined in advance. Category A, substantive engagement, applies when the citing sentence describes, applies, critiques or extends IMF. Category B, topical adjacency, applies when the sentence concerns management, governance, monitoring or time management but does not refer to the content of IMF. Category C, methodological or data adjacency, applies when the sentence concerns data processing, data analysis or research method. Category D, unrelated, applies when the topic of the sentence has no evident link to project management or measurement. Where a work cited the paper more than once, the work was assigned the highest category reached by any of its citing sentences. We also recorded whether the reference entry reproduced the paper’s three authors correctly. Three decision rules governed borderline cases. A sentence about a management topic that cited the paper for a research method was coded C rather than B, because the function of the citation was methodological. A sentence about data or information quality in a university was coded B only if it referred to the management or governance of that information. And a sentence that combined several references was coded by its own topic, since it was not possible to tell which part of the sentence each reference supported. Citations were located by searching each full text for every bracket containing the paper’s reference number, including lists and ranges such as [4]–[6]. Coding was carried out by a single analyst. A second, documented verification pass was then made: every occurrence of the reference number was located again in each full text with a procedure that also captured ranges written across two brackets, the citing sentences were re-read, and the codes were compared with the first pass. The second pass found 19 citing sentences in the sixteen works, no citations given as ranges, and no change of code. To make every decision verifiable, the topic of

each citing sentence is reported alongside its code in Table 3, and the coded data set is available as described in the data availability statement.

3.4 Rigour and Ethics

Credibility was supported by an audit trail that links every claim about IMF in this paper to a quotation, a figure or a structural feature in a named source. Where sources disagree, the disagreement is reported rather than resolved silently. The concept analysis distinguishes three kinds of statement: what the founding texts say, what the practice shows, and what we propose. Only the third is our own, and it is marked as a proposal.

The study used no human participants and collected no new personal data. The practice corpus was read without modification and only its structure is reported. The comments posted under the 2019 blog post were read, but because they are staff reactions rather than statements by the originator, they are used only as evidence of reception and are not treated as part of the definition.

4. How IMF Has Been Described and Used

4.1 The Founding Texts

The 2019 blog post and the 2020 paper agree on the core of IMF but differ in emphasis, scope and tone. Table 2 sets their defining statements side by side, together with the features visible in current practice.

The blog post is written for colleagues and students. It opens with the question of whether IMF refers to Tom Cruise’s team or to the International Monetary Fund, explains that the name was inspired by the Mission Impossible films, “in which a series of near-impossible missions turn out to be achievable through various strategies” (our translation), and then gives the formal expansion: Indicator Measurement Factor Analysis, “a method for completing information-technology projects, focusing on the implementation of POAC” (our translation). It names three tools, RinfoSheet, vasTmind and RinfoCal, and gives a one-line rule of use: “every project must have Objectives (Tujuan), Outputs (Luaran) and Contributors, whose performance is measured using RinfoSheet” (our translation). As evidence of benefit it states that IMF lets one see, continuously, the achievement progress of every project, “from the best-performing contributor to the lowest contribution” (our translation). It names three examples: IMF RIRR, IMF Alphabet Incubator and IMF Hibah Ditlitabmas 2019. The second of these refers to the university’s incubator, whose interior-design work in a later study shows the kind of creative output such projects produce [30]. The post closes by noting that IMF is “coincidentally” also the abbreviation of Impossible Mission Force, in the hope of giving a spark of motivation to people applying POAC with the method.

The 2020 paper is written for a scientific audience. It defines IMF as “a simple, low cost implementation tools that facilitate effective POAC control monitoring and implementation in project management” and locates it in “the field of education”. It describes the model as having two parts. The IMF Viewboard is a header that shows “the project title, objectives, outcomes to be achieved, contributors and versions of each IMF according to the time target” and uses spreadsheet functions such as HLOOKUP, VLOOKUP, AVERAGE, SUM, MAX and MIN. The IMF Content “contains the entire project work process that consists of indicators to be measured”, where “each contributor can complete the task with a percentage achievement and a unique code on each project”. The paper reports that “version changes run every month”, gives one screenshot of a research master-plan IMF, and offers a “simple algorithm” whose notation cannot be recovered from the published file because the subscripts are rendered as broken glyphs; it reads as an average of indicator scores, but that is an interpretation. It claims that IMF is “simple to use and produce effective results in harbouring communication, collaboration, critical thinking, competition, and creativity of teamwork”, and that user satisfaction was “collected and analysed”, but it reports no instrument, sample or results.

Table 2. How IMF has been defined: founding texts and current practice

Source	Defining statement (verbatim, or our translation where marked)	Components named	Stated scope
Blog post, June 2019	“a method for completing information-technology projects, focusing on the implementation of POAC” (our translation); “every project must have Objectives (Tujuan), Outputs (Luaran) and Contributors, whose performance is measured using RinfoSheet” (our translation)	RinfoSheet, vasTmind, RinfoCal; objectives, outputs, contributors; mission metaphor	Information-technology projects
Conference paper, 2020	“a simple, low cost implementation tools that facilitate effective POAC control monitoring and implementation in project management”	IMF Viewboard (title, objectives, outcomes, contributors, version, due date) and IMF Content (tasks with percentage achievement and unique code); spreadsheets and vasTmind	Project management in education
Live sheets, 2021–2026	No written definition; the method is defined by a recurring structure	Viewboard with purpose, Luaran Target/Extra/Total, start, due, countdown, closing flag and % Capaian; Content with task code, checkbox, PIC/LPIC and evidence link; opening and closing sentences; recognition cells	Grants, publications, accreditation, teaching, events, finance

Three features of the founding texts are important for what follows. First, both texts define IMF by its purpose, making POAC workable, and by its instrument, a spreadsheet with a summary header and a task grid, rather than by its underlying logic. Second, both describe achievement as a percentage, but neither says how the percentage is computed when tasks are added or exceed the plan. Third, the motivational element is present in both but expressed differently: the paper lists five team qualities, which later users came to call the “5C”, while the blog relies on the mission metaphor. The label “5C” appears in neither text.

4.2 How the Citing Literature Uses IMF

If the citing literature had engaged with IMF, it would be the natural place to look for its further development. Figure 2 places the citing works on a timeline together with the Viewboard antecedents and the practice corpus. Citations rose quickly after publication, peaking with fourteen citing works in 2021 and eleven in 2022, and continued at a lower rate through 2025.

The coded analysis of the sixteen Pandawan works, summarised in Table 3 and Figure 3, shows that this volume of citation did not translate into conceptual uptake. None of the sixteen works described, applied, critiqued or extended IMF (Category A). Two cited the paper in a management context that is close to its topic without referring to its content (Category B). One of them, a study of integrated management information systems for student and lecturer data, cited it for the claim that a young institution must improve data management and governance and for the importance of integrating information across organisational units [14]. The other, a structural framework for time management, cited it as part of the literature on time-management strategies for dynamic work settings [10]. Three works cited the paper in a data or method context (Category C): for the process of knowledge discovery in databases and for entering transaction data into a spreadsheet, for the use of PLS-SEM in a study of publication management [31], and for the importance of data analysis in international business expansion. In the last two cases the method attributed to the paper is not one it uses. Two of these codes were borderline. The publication-management

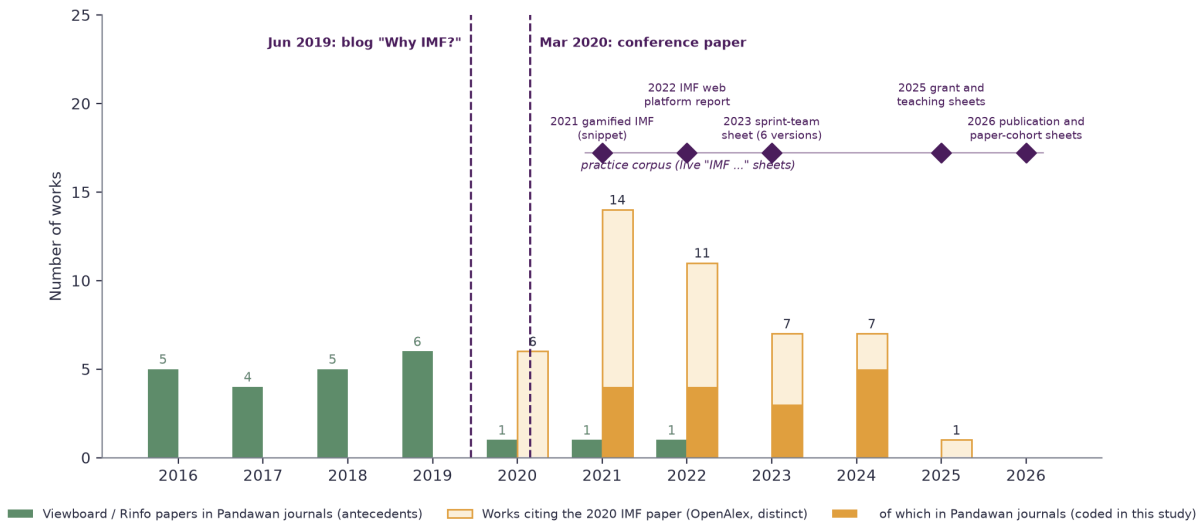


Figure 2. Evolution of IMF, 2016–2026: Viewboard and Rinfo papers in Pandawan journals (antecedents), distinct works citing the 2020 IMF paper by year according to OpenAlex (with the Pandawan works coded in this study), the two founding texts and the dated sheets in the practice corpus.

study is about management, but its citing sentence attributes a research method to the paper, so it was coded C under the first decision rule. The study of integrated information systems cited the paper for the quality of data management, which is closer to IMF’s concern with management information, and it was coded B under the second rule; had it been coded D, the conclusion would not change.

The remaining eleven works cited the paper for statements with no evident link to project management or measurement (Category D), including statements on the competencies lecturers need in the fourth industrial era [26], technology developers that offer platforms to startups [27], the purpose of a study of young entrepreneurs on an e-commerce platform [32] and household business measures in the creative culinary sector [33], as well as statements on fintech regulation, atomic structure, landfill-gas electricity, offline questionnaires, earnings management and repurchase intention. In addition, eight of the sixteen reference entries listed only two of the paper’s three authors, omitting the first author, Sudaryono.

Table 3. Citation function in the sixteen open-access Pandawan works citing the 2020 paper (numbers in parentheses after a journal and year give the number of works)

Category	Definition	Works	Journals and years	Topics of the citing sentences
A. Substantive engagement	Describes, applies, critiques or extends IMF	0	—	—
B. Topical adjacency	Management, governance, monitoring or time management, without reference to IMF’s content	2	ATM 2021; ATM 2024	Quality of university data management and integration of information [14]; literature on time-management strategies [10]
C. Methodological or data adjacency	Data processing, data analysis or research method	3	ITSDI 2023; ATM 2024 (2)	Knowledge discovery and spreadsheet data entry; PLS-SEM in publication management [31]; data analysis in business expansion

Category	Definition	Works	Journals and years	Topics of the citing sentences
D. Unrelated	No evident link to project management or measurement	11	ABDI 2021 (2); ITSDI 2021, 2022; MENTARI 2022 (2); SABDA 2022, 2023 (2); ATM 2024 (2)	Lecturer competencies [26]; startup platforms [27]; young e-commerce entrepreneurs [32]; household creative businesses [33]; fintech regulation; atomic structure; landfill gas; questionnaires; earnings management; repurchase intention
Attribution	Reference entry omits the paper's first author	8 of 16	ATM 2024 (5); MENTARI 2022; SABDA 2023 (2)	Entry lists only the second and third authors

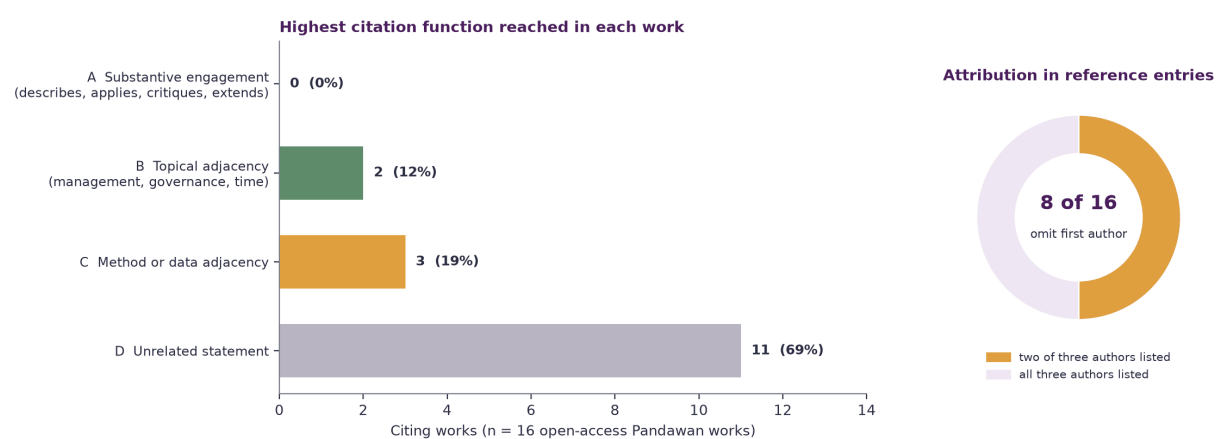


Figure 3. Citation function of the sixteen open-access Pandawan works that cite the 2020 IMF paper (highest category reached in each work) and the accuracy of author attribution in their reference entries.

These results should be read with care. They describe sixteen of 46 citing works, and the other thirty, mostly conference papers, may engage more closely. They say nothing about the quality of the citing works in their own fields, and a citation that does not engage with a source is common in many literatures. The analysis concerns the state of the secondary literature on IMF, not the conduct or quality of the citing authors: a citation that does not engage with its source is not in itself evidence of misconduct, and it may reflect editorial or reference practices that this study did not examine. What they do show is that the published record offers almost no secondary account of IMF. Anyone who wants to know what IMF is must rely on the two founding texts and on practice.

4.3 IMF in Practice

The practice corpus tells a different story. The spreadsheets examined are not elaborations of a single template but recognisably share a common structure that goes well beyond the 2020 description.

Each sheet is titled “IMF” followed by the name of a programme, team or event. Versioning takes two forms: either one tab per sprint, numbered in sequence (in the sprint-team sheet, tabs from 1.1 to 6.2, each covering about two weeks), or an explicit version number in the header. Some sheets name the header tab explicitly as the Viewboard. The Viewboard occupies the top rows of the sheet and typically contains a live clock; the title; a statement of purpose (Tujuan), usually phrased as a mission to make something succeed; output counts (Luaran) split into Target, Extra and Total, where Target counts the planned task codes, Extra counts tasks added beyond

the plan and Total is their sum; start and due dates; a countdown that shows the number of days remaining or the word “Finish”; the completion date and the number of days by which the mission finished early; a closing flag that reads “CLOSING” or “NOT CLOSING”; and the overall achievement, % Capaian. Sheets with several sub-teams add roll-ups of targets, completed and remaining tasks per sub-team and cells that name the most valuable lead contributor and contributor. Grant sheets add counts of submitted proposals by type. A row of links points to the guide, the shared folder and the submission form.

Two formula-generated sentences give the Viewboard a narrative voice. An opening sentence that begins with “Bismillah” reads the mission’s own figures back as prose, stating the number of outputs the team is striving for, the purpose and the start and due dates. A closing sentence that begins with “Alhamdulillah” reports the final achievement as a percentage and describes the result as a token of love (tanda cinta) from the team, adding how many days early the work was finished. Related sheets use the same phrase about contribution and tokens of love, and teams add their own greetings.

The Content is a task grid. Its columns typically include a running number, a unique task code (written as Lovecode, Love Code or Code, in forms such as the team name followed by a number), the task description, a checkbox, the achievement for the task (100 per cent when the box is ticked, or the share of required evidence items provided for tasks with several artefacts), the person in charge (PIC) and, in multi-team sheets, a lead person in charge (LPIC), and a notes column, often containing a link labelled “Disini” (“here”) to the evidence. Rows are grouped into planned tasks (“To Do”) and tasks beyond the target (“Extra Job”). Domain variants keep the pattern and add columns for their own stages: a publication sheet tracks draft, citation mix, journal category, submission, acceptance, payment, publication and indexing; a paper-processing sheet tracks paper identifiers, status and evidence links.

Recognition takes several forms: most-valuable-contributor cells, the ranking of contributors by achievement that both founding texts mention, and the early-completion phrasing of the closing sentence. A 2021 sheet seen only in a snippet was explicitly titled as a gamification of IMF and referred to appreciation for the top achievement, leagues and medal counts. No sheet examined contained a formal rule linking achievement levels to rewards.

Compared with the 2020 paper, practice has added at least six elements: countable output targets with a separation of planned and extra work; a binary closing rule; a countdown and an early-finish measure; task-level evidence links; formal roles for lead contributors; and narrative sentences that frame the mission religiously and affectively. It has also generalised the scope. The blog spoke of technology projects and the paper of education projects, but practice covers research grants, publications, accreditation, teaching, events and finance.

4.4 Tensions and Gaps

The review reveals eight tensions that a redefinition must address. The scope of IMF is stated narrowly in each founding text but is general in practice. The tools differ between the blog (three named tools) and the paper (spreadsheets and vasTmind), while practice uses ordinary shared spreadsheets. The relation between the formal name and the mission nickname is ambiguous: the blog says both that the method was inspired by the films and that the shared abbreviation is a coincidence. The words of the formal name are never explained one by one, and the word “Analysis” lies outside the three letters of the acronym. The five team qualities are listed but never measured, and the conclusion of the paper uses the word “hiding” where the abstract has “harbouring”. The achievement measure lacks a stated denominator, so that achievement can exceed 100 per cent when extra tasks are counted against the planned target, and the published formula cannot be read. The version cadence is monthly in the paper but fortnightly or static in practice. Finally, the credit for the method is distributed across texts: the blog attributes the innovation to Prof. Untung Rahardja, while the paper lists Sudaryono as first and corresponding

author without naming an originator.

Table 7 in Section 8.1 lists the eight tensions and states how the new definition responds to each. None of these tensions invalidates IMF. Most are the normal traces of a method that has grown faster in use than in writing. But together they explain why a citing author might find it easier to cite IMF than to describe it, and they define the work that a new definition must do.

5. Concept Analysis

5.1 Surrogate Terms and Related Concepts

Four surrogate terms are used for IMF or parts of it. “Impossible Mission Force” is used as an alternative expansion and appears, for example, in the title of a 2022 student report on developing IMF into a web platform. “Viewboard” is used both for the header of an IMF and, more widely, for any one-screen summary display. “RinfoSheet” is used for the spreadsheet in which an IMF is kept. “Mission” is used throughout practice for the unit of work that an IMF manages.

Several related concepts share some attributes of IMF but not all. A dashboard shares the at-a-glance summary but need not define a mission, assign contributors or close. A key performance indicator system shares the measurement of achievement against targets but is typically organisational and continuing rather than tied to a bounded mission. Task boards of the Kanban type share the decomposition of work into visible items but usually lack an achievement ratio and a closing rule. Gamified systems share points, rankings and badges [15, 16] but need not be tied to evidence of real outputs. Digital grant-monitoring platforms share real-time tracking, structured reporting and transparency across a lifecycle [1, 2] but are purpose-built systems rather than lightweight, team-owned sheets. Objectives-and-key-results systems share the declaration of an objective with measurable results but usually operate at the level of a unit or an individual over a quarter, without task-level decomposition or evidence links. The plan-do-check-act cycle shares the idea of a closed management loop that is repeated, but it is a reasoning pattern rather than an instrument and specifies no measure of achievement. IMF combines elements of all seven, and its distinctiveness lies in the combination rather than in any single element.

5.2 Defining Attributes

Rodgers’ approach treats attributes as the cluster of characteristics that make it possible to identify situations that fall under a concept. Six attributes recur across the founding texts and the practice corpus. They are listed in Table 4 with their evidence and the period in which they appear.

The first attribute is a declared mission: an IMF begins by stating a purpose, countable outputs and a time window, and it is this declaration that turns a set of tasks into a mission. The second is indicator decomposition: the mission is broken into tasks, each with a unique code, so that progress can be measured task by task. The third is accountable contribution: each task is assigned to a named contributor, and the contribution of each person is visible to all. The fourth is evidence-verified measurement: progress is recorded as a percentage, ideally supported by a link to the evidence that the task has been done. The fifth is temporal rhythm: the mission is bounded by start and due dates, displayed with a countdown, renewed in versions and ended by a closing rule. The sixth is meaning and recognition: the mission is framed by a shared narrative, and achievement is recognised publicly. In the source institution this attribute is expressed through religious and affective language, the Bismillah and Alhamdulillah sentences and the phrase “token of love”. These are contextual expressions of the attribute, not the attribute itself: a team in another institution or faith community, or a secular one, would satisfy the attribute with an opening and closing narrative in its own idiom. The same distinction applies to other local features, such as the name Lovecode for task codes and the most-valuable-contributor label, which illustrate an attribute without defining it.

The first four attributes are already present in the founding texts, although the third and fourth are stated only briefly. The fifth is present as monthly versioning in the paper but becomes fully developed only in practice. The sixth is present as the mission metaphor in the blog and as the five team qualities in the paper, but its concrete forms, the opening and closing sentences and the recognition cells, are products of practice. The concept has therefore evolved by elaboration rather than by replacement.

Table 4. Defining attributes of IMF and their evidence

Attribute	Founding texts	Practice (live sheets)	Status
Declared mission	Objectives and outputs required for every project (blog); title, objectives, outcomes and due date on the Viewboard (paper)	Purpose statement; Luaran Target, Extra and Total; start and due dates	Present since 2019; elaborated
Indicator decomposition	Content contains “indicators to be measured” with “a unique code on each project” (paper)	Coded tasks (Lovecode or Code), grouped as To Do and Extra Job; domain-specific stage columns	Present since 2020; elaborated
Accountable contribution	Contributors listed (blog, paper); best and lowest contributor visible (blog)	PIC and LPIC columns; sub-team roll-ups; most-valuable-contributor cells	Present since 2019; formalised in practice
Evidence-verified measurement	Percentage achievement per task (paper); performance measured in the sheet (blog)	Checkbox-based achievement; share of evidence items provided; evidence links	Present since 2019; evidence links added in practice
Temporal rhythm	Version and due date; “version changes run every month” (paper)	Countdown; days finished early; closing flag; sprint tabs of about two weeks	Partly present in 2020; developed in practice
Meaning and recognition	Mission metaphor and “spark of motivation” (blog); five team qualities (paper)	Bismillah and Alhamdulillah sentences generated from live figures; “token of love” phrasing; rankings and MVP cells	Implicit in 2019–2020; concrete in practice (religious and affective phrasing is a contextual expression, not a defining feature)

5.3 Antecedents

Four antecedents must be in place for IMF to occur. The first is a shared spreadsheet environment that all contributors can open and edit, which explains why IMF is described as low-cost. The second is a mission that can be expressed as countable outputs; where outputs cannot be counted, the achievement ratio has no meaning. The third is a sponsor or lead who declares the mission and owns the Viewboard, consistent with research that links leadership to the effect of governance on performance [8] and with the role of digital leadership in technopreneurship [34]. The fourth is a culture in which visible measurement is acceptable, which in turn depends on trust and on the care with which recognition is used [18]. The Viewboard tradition described in Section 2.2 is a historical antecedent: it made one-screen summaries a familiar genre at the university before IMF existed.

5.4 Consequences

The founding texts claim three consequences: continuous visibility of the progress of every project and every contributor, which is useful to top-level management; motivation and self-development, since the paper’s conclusion says that the results of each contributor’s work “can be used as monitoring. motivation in working on tasks and self- development”; and the five team qualities of communication, collaboration, critical thinking, competition and creativity of teamwork. Practice

adds two consequences by design: the explicit closure of missions, signalled by the closing flag, and the production of an evidence trail, assembled through the links in the Content. None of these consequences has been measured. Related research suggests that they are plausible: collaborative learning has been associated with empathy and tolerance [35], critical thinking has been profiled as a measurable disposition in management education [36], and visible, gamified progress has been associated with engagement and completion [16]. But plausibility is not evidence, and the consequences are best treated as hypotheses.

5.5 Exemplar, Borderline and Contrary Cases

The sprint-team sheet examined in the practice corpus can serve as a model case because it contains all six attributes. It declares a purpose and counts its outputs as Target, Extra and Total; it decomposes the work into coded tasks with checkboxes and owners; it computes achievement from the ticked tasks; it runs in numbered versions of about two weeks with a countdown and a closing flag; and its opening and closing sentences narrate the mission from its live figures. The research master-plan IMF shown in the 2020 paper is a borderline case: it has a Viewboard with objectives, outputs, achievement targets and dates and a Content grid with codes, but no closing rule, no countdown and no recognition features. A contrary case would be a shared to-do list with no declared target, no denominator and no end date. It decomposes work but cannot say how far the mission has progressed or whether it is finished, and therefore is not an IMF in the sense developed here.

6. A New Definition of IMF

6.1 Formal Definition

The review and the concept analysis support a definition that keeps the founding purpose of IMF, making POAC workable at low cost, but states its logic explicitly and incorporates what practice has learned. We propose the following definition.

Definition. IMF (Indicator Measurement Factor Analysis) is a low-cost, spreadsheet-native mission-management method in which a team declares, on a single Viewboard, a mission’s purpose, countable outputs, contributors and time window; decomposes the mission into uniquely coded, evidence-linked tasks in an IMF Content grid; and continuously measures achievement as verified outputs over declared targets, so that the planning, organising, actuating and controlling of collective work become one visible, versioned and celebrated cycle.

In short form: IMF is a low-cost method for running a mission by declaring its outputs, coding its tasks and measuring verified achievement, visibly and in rhythm.

The definition gives a reading of each word of the formal name. Indicator refers to the coded tasks and outputs that stand for the mission’s progress. Measurement refers to the verified achievement ratio. Factor refers to the contributors and conditions, such as people, time and evidence, whose combination produces achievement. Analysis refers to the reading of the Viewboard by the team and its sponsor, including comparison across contributors, versions and missions. Despite its name, IMF is not a form of statistical factor analysis: it does not estimate latent factors from correlations among observed variables, and the word “Analysis” refers to the human reading of the Viewboard, not to a statistical procedure. Readers in quantitative fields should therefore not expect loadings, eigenvalues or factor scores in an IMF. The mission nickname, Impossible Mission Force, is retained as a motivational name for the same method rather than as a second definition.

The definition also places IMF in relation to POAC more precisely than the founding texts do. Planning corresponds to the mission declaration on the Viewboard. Organising corresponds to the decomposition into coded tasks and their assignment to contributors. Actuating corresponds to the completion of tasks and the narrative and recognition that sustain effort. Controlling corresponds to the achievement ratio, the countdown and the closing rule. In the founding texts

IMF was a tool that “facilitates” POAC; in the redefinition it is a cycle in which each POAC function has a visible counterpart.

6.2 Six Construct Dimensions

The six attributes identified in Section 5.2 become six construct dimensions, shown in Figure 4 and specified in Table 5 with indicators that apply to creative-campus projects. Mission declaration (D1) is the extent to which a mission states its purpose, countable outputs and time window before work begins. Indicator decomposition (D2) is the extent to which the mission is broken into uniquely coded tasks that together account for the declared outputs. Accountable contribution (D3) is the extent to which each task has a named owner and each contributor’s share of the work is visible. Evidence-verified measurement (D4) is the extent to which achievement is computed from tasks supported by accessible evidence. Temporal rhythm (D5) is the extent to which the mission runs within declared dates, in versions, with a countdown and an explicit closing. Meaning and recognition (D6) is the extent to which the mission is framed by shared narrative and achievement is recognised in ways that celebrate rather than sanction. D6 is defined independently of the language in which it is expressed; the religious and affective phrasing used in the source institution is one expression of it, and other institutions may use their own.

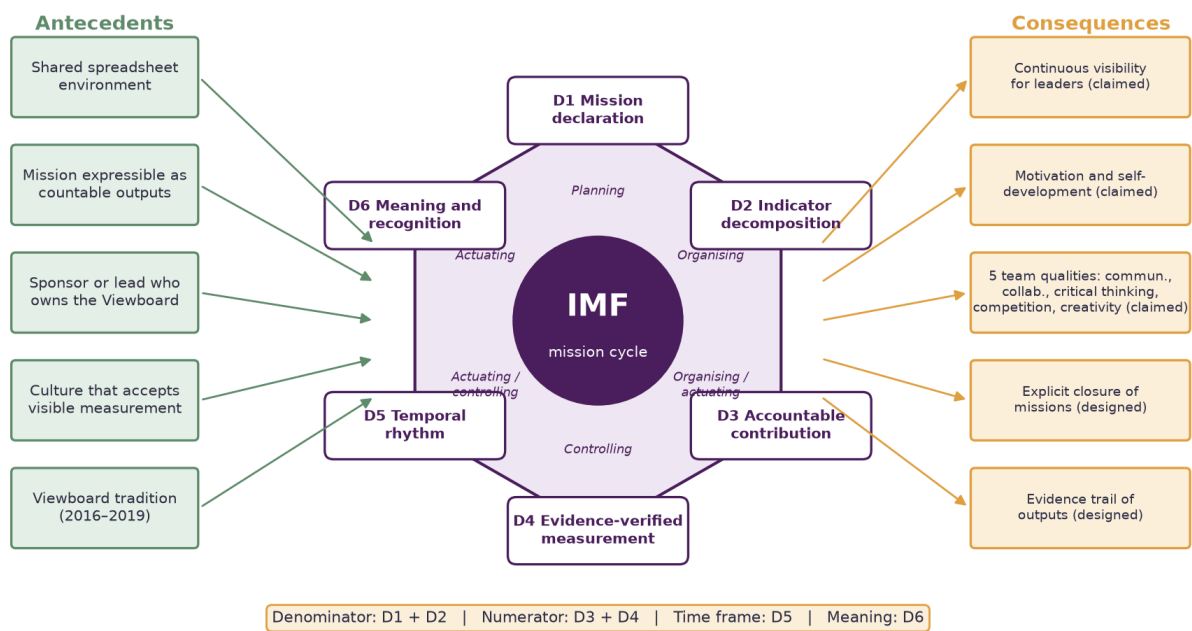


Figure 4. Concept map of the redefined IMF: antecedents, the six construct dimensions arranged as a mission cycle with their links to the POAC functions, and the claimed and designed consequences.

Table 5. Construct dimensions of the redefined IMF with indicators for creative-campus missions

Dimension	Definition	Indicators in a creative-campus mission	POAC link
D1 Mission declaration	Purpose, countable outputs and time window stated before work begins	Viewboard shows purpose, Luaran Target by output type (prototype, copyright record, paper, pitch deck, event, venture), start and due dates	Planning
D2 Indicator decomposition	Mission broken into uniquely coded tasks that account for the declared outputs	Every Luaran has coded tasks; planned and extra tasks are separated	Organising

Dimension	Definition	Indicators in a creative-campus mission	POAC link
D3 Accountable contribution	Each task has a named owner and each contributor's share is visible	PIC for every task; LPIC for every sub-team; contribution per person visible to the team	Organising, actuating
D4 Evidence-verified measurement	Achievement computed from tasks supported by accessible evidence	% Capaian = verified planned tasks / planned tasks $\times$ 100; extra outputs reported separately; evidence link for every artefact	Controlling
D5 Temporal rhythm	Mission runs within declared dates, in versions, with a countdown and an explicit closing	Countdown visible; version cadence declared (for example, two weeks); closing flag set at due date	Actuating, controlling
D6 Meaning and recognition	Mission framed by shared narrative; achievement recognised to celebrate, not sanction	Opening and closing sentences in the team's own idiom; agreed recognition rules written on the Viewboard; recognition of categories of contribution and of teams; celebration of verified extra outputs [16, 18]	Actuating

The six dimensions are conceptually distinct but practically linked. D1 and D2 together define the denominator of achievement, D3 and D4 its numerator, D5 its time frame and D6 the meaning that people attach to it. A sheet can be strong on some dimensions and weak on others; the borderline case in Section 5.5, for example, is strong on D1 and D2 and weak on D5 and D6. This makes the dimensions suitable as the basis for a maturity model, of the kind that has been developed to assess digital readiness in small enterprises [37], which we leave to future measurement work.

6.3 An Unambiguous Measure of Achievement

The founding texts and practice leave the denominator of achievement undefined. We propose that achievement on a mission be reported as two numbers. The planned achievement, % Capaian, is the number of planned tasks verified as complete divided by the number of planned tasks declared in the Luaran Target, multiplied by 100. It is bounded between 0 and 100 per cent and is the figure that determines closing. The extra output, reported separately, is the number of verified tasks completed beyond the plan. A mission that completes all planned tasks and five extra tasks would then be reported as 100 per cent achieved with five extra outputs, rather than as, say, 114 per cent. This convention keeps the merit of extra work visible while making achievement comparable across missions, contributors and versions. A task counts as verified when its checkbox is ticked and, for tasks whose output is an artefact, a link to the artefact is present. For tasks that produce no artefact, such as a mentoring session, a partner meeting or a rehearsal, verification requires a brief record linked in the notes column, for example minutes, an attendance list or a dated photograph agreed in advance by the team.

The ratio deliberately weights every planned task equally. Equal weighting is transparent, cannot be adjusted after the fact to flatter a result and keeps missions comparable, and it encourages teams to decompose large tasks into parts of similar size, which is good practice in itself. Where tasks remain very unequal, as when a final animation render sits beside the upload of a poster, a weighted variant may be used: each planned task receives an agreed weight before work begins, and planned achievement is the sum of the weights of verified tasks divided by the sum of all planned weights. The weights must be declared on the Viewboard at the start of the mission and not changed afterwards, and the unweighted ratio should be reported alongside the weighted one so that comparability is preserved.

6.4 Boundaries of the Concept

The definition excludes three things. It excludes continuing activities without a declared end, which belong to routine reporting rather than to missions. It excludes measurement without decomposition, such as a single progress estimate for a whole project. And it excludes recognition without evidence, such as rankings based on effort reported without verification. It also separates the attributes of IMF from their contextual expressions: the names, greetings and labels that a team uses are free to vary, provided that the six dimensions are present. It does not require a particular software product; any shared spreadsheet or platform that supports the six dimensions can host an IMF, which is consistent with the low-cost purpose of the method and with the later development of an IMF web platform.

7. IMF as an Essential Tool for Creative-Campus Projects

7.1 The Argument

We argue that the redefined IMF is an essential tool for building creative-campus projects. Because “essential” is a strong word, we state the criteria by which we use it. A tool is essential for a class of projects if it meets four criteria: necessity, meaning that the problems it addresses arise in every project of the class; fit, meaning that its features correspond to those problems; feasibility, meaning that it can be adopted by the people who run such projects at a cost they can bear; and effectiveness, meaning that its use improves the outcomes of the projects. The first three criteria can be assessed by argument and by the evidence of practice; the fourth can only be assessed empirically. The argument for necessity and fit rests on five features of creative-campus work.

First, creative-campus outputs are countable and evidenced. A student team develops a prototype, records a copyright, writes a paper, builds a pitch deck, holds an exhibition or registers a venture. Each of these can be declared as Luaran and verified by a link, which is exactly what D1 and D4 require. Studies of pitch decks [6] and of incubator-supported technology ventures [3,5] show how concrete such outputs are.

Second, creative-campus projects involve many contributors with uneven commitment. Teams mix students from different programmes, lecturers and partners from industry, government and communities. Ecosystem research highlights collaboration among these actors as the source of value [4,28], and partnership programmes have been shown to mediate the effect of knowledge and capital on enterprise performance [38]. IMF’s accountable-contribution dimension makes each actor’s part visible without requiring a hierarchy, which suits collaborations in which no single organisation is in charge.

Third, creative-campus projects run on deadlines that are set elsewhere: competition dates, grant calls, exhibition openings and policy events such as WCCE. The temporal-rhythm dimension, with its countdown and closing rule, turns such external deadlines into shared team time. Grant-monitoring studies describe how unclear progress tracking and slow updates add stress for lecturers preparing proposals [2], which is the problem that a visible countdown and a verified achievement ratio address.

Fourth, the creative economy needs credible data. The master plan names better creative-economy data among its priority programmes, and the creative economy’s claims on public resources depend on evidence of output. IMF records, if they follow the measurement convention proposed in Section 6.3, can be aggregated across missions into campus-level counts of creative outputs by type and time, giving universities a low-cost source of evidence for reporting to the government and to partners. Studies of artificial intelligence in campus resource allocation [25] and of machine learning in startup collaboration [29] suggest further uses once such records exist. Aggregation must, however, respect the fact that IMF records name contributors and show their individual achievement. Under Indonesia’s personal data protection law, UU No. 27/2022, such records are personal data, and their use beyond the team requires a lawful basis and appropriate

safeguards. We therefore propose that campus-level aggregation report outputs rather than people: counts of verified outputs by type, mission, unit and period, with contributor columns removed or pseudonymised before records leave the team, and with individual-level data shared only with the consent of the people concerned.

Fifth, creative work depends on motivation that cannot be commanded. The meaning-and-recognition dimension gives IMF a way to sustain voluntary effort through narrative and celebration, in line with research on happiness-driven leadership and humanistic technology [18,19]. Strategic-management research increasingly asks how organisational tools can serve equity and inclusion as well as efficiency [11], and a method that recognises every verified contribution, not only the leader's, is one modest answer.

Taken together, these features mean that a creative-campus project without something like IMF must solve the same problems informally: it must find a way to state its outputs, divide its work, see who is doing what, verify what has been done, keep time and keep people motivated. This establishes necessity. Fit follows from the correspondence between these six problems and the six dimensions of the redefined IMF. Feasibility is supported by the practice corpus, which shows the method running for years on ordinary shared spreadsheets across grants, publications, teaching and events, at almost no cost. Effectiveness has not been demonstrated: neither the founding texts nor this study measure the outcomes of IMF, and the propositions in Section 7.4 are designed to test it. Our claim is therefore that IMF meets three of the four criteria on present evidence and is a strong candidate to meet the fourth; it is essential in the functional sense that the work it organises must be done, and IMF is the method already embedded in the institutions that will carry out much of this work, not in the sense that no other tool could do it.

7.2 How IMF Supports the Creative-Campus Project Lifecycle

The six dimensions can be read along the lifecycle of a creative-campus project. At the idea stage, D1 turns an idea into a mission with a purpose, outputs and dates, and D6 gives it a name and an opening sentence that the team can rally around. At the prototype stage, D2 and D3 break the work into coded tasks with owners, and D4 collects the evidence, such as design files, test results and recordings, that will later support intellectual-property applications. At the stage of the creative startup, paper or event, D5 drives the work to closing, and the Viewboard becomes the record that the team shows to incubators, funders or organisers. Across successive cohorts, versions accumulate into an institutional memory, which knowledge-management research identifies as the condition for turning individual ideas into organisational knowledge [7]. Table 6 shows, for typical creative-campus outputs, how each would be declared as Luaran, what would count as evidence of verification and which dimensions are exercised. The mapping is illustrative: it describes how the definition would be applied and reports no data.

Table 6. Illustrative mapping of creative-campus outputs to IMF declaration, verification and dimensions (no data)

Output type	Declared as Luaran	Evidence for verification	Dimensions exercised
Prototype (product, app, game, design)	One output per prototype version that passes an agreed test	Link to design files, build or demonstration video, and test notes	D1, D2, D4
Copyright record	One output per work recorded with the intellectual-property office	Link to the recording letter or application receipt	D1, D4, D5
Scholarly paper	Separate outputs for submission, acceptance and publication	Submission confirmation, letter of acceptance, published DOI	D2, D4, D5

Output type	Declared as Luaran	Evidence for verification	Dimensions exercised
Pitch deck and pitch	One output per deck delivered to a named audience	Deck file and event record	D3, D4, D6
Exhibition, showcase or event	One output per event held, with sub-tasks for preparation	Programme, attendance record and photographs	D2, D3, D5, D6
Registered creative venture	One output per venture registered	Business registration number or deed	D1, D4, D5
Digital content series	One output per published episode or item	Public link to each item	D2, D4, D5

The operational detail of this lifecycle, including roles, cadence and rituals, is the subject of a companion process study.

7.3 IMF in an Age of AI Agents

Generative AI assistants and software agents can already draft task lists, update progress fields and summarise the status of a project, and sensing and robotic systems are beginning to enter studios and maker spaces. It is fair to ask whether a spreadsheet method still matters. We argue that automation shifts the value of IMF rather than removing it. Agents can populate the Content and refresh the Viewboard, but they cannot decide what a mission is for, which outputs count, who owns which task or what the team’s achievement means to it; these are the human parts of D1, D3 and D6. Automation also raises the risk of metric gaming, because a ratio that updates itself invites tasks to be split or ticked to move the number. IMF’s existing safeguards address this: targets are declared before work begins, extra tasks are reported separately from planned ones, completion requires evidence, and missions close on a fixed date. Research on attitudes to AI in management education suggests that critical thinking and confidence in AI are distinct dispositions [36], and an IMF in which agents propose and humans verify is one practical way to keep both in play. The likely future is therefore an IMF whose routine updates are automated and whose declarations, verifications and celebrations remain deliberately human.

7.4 Propositions

The argument implies five propositions that future research can test.

- P1.** Creative-campus missions that declare countable outputs and dates on a Viewboard before work begins (D1) reach closing more often and closer to their due dates than comparable missions with narrative goals only. Indicators: the closing flag and the days finished early or late; test: comparison of missions with and without a prior declaration within the same programme and cohort.
- P2.** The effect of evidence-verified measurement (D4) on further collaboration with partners outside the university is mediated by the credibility of reported outputs: D4 increases perceived credibility, and perceived credibility increases the likelihood of further collaboration. Indicators: the share of verified tasks with evidence links; partners’ ratings of the credibility of reported outputs; and repeat partnerships within a defined period; test: a mediation model across missions.
- P3.** Meaning and recognition (D6) sustain contribution in teams that depend on voluntary effort, provided that rankings and most-valuable-contributor cells are used to celebrate rather than to sanction; where they are used to sanction, the effect reverses. Indicators: the number of active contributors across successive versions and contributors’ perceptions of how recognition is used; test: a moderation model with the use of recognition as moderator.

- P4.** Reporting planned achievement and extra output separately makes IMF records comparable across missions and cohorts and therefore usable as campus-level creative-economy data. Indicators: the agreement between achievement figures recomputed by independent raters from the same records; test: comparison of inter-rater agreement under the two-number convention and under a single combined percentage.
- P5.** The benefits of IMF depend on temporal rhythm (D5): versioned missions with explicit closing produce more completed outputs than static sheets that are never closed. Indicators: the number of verified outputs per mission and per contributor-month; test: comparison of versioned and static IMFs of similar scope.

8. Discussion

8.1 Contributions to Knowledge

The paper makes three contributions. The first is evidential. By coding citation function in the open-access citing works, it shows that the citations to IMF have so far been almost entirely nominal. This finding is uncomfortable but useful, because it explains why the concept has not developed in print and because it shows that the practice, not the literature, is the place where IMF has matured. A concept that is cited often but rarely used is at risk of becoming a label, and the analysis offers a way back from the label to the method.

The second contribution is conceptual. The new definition states the logic of IMF, links each POAC function to a visible counterpart and specifies six construct dimensions. It also resolves several of the tensions identified in Section 4.4: it treats the scope as general, the tool as any shared spreadsheet or platform, the nickname as motivational, the words of the formal name as components of the method and achievement as a bounded ratio with extra output reported separately. It does not resolve the questions of who first conceived the method and in what order the two names arose, which can only be settled by the originators. Table 7 summarises how the redefinition responds to each tension identified in Section 4.4.

Table 7. Tensions in the description of IMF and the response of the redefinition

Tension (Section 4.4)	Founding texts and practice	Response of the redefinition
Scope	Information-technology projects (blog); education (paper); general in practice	General: any bounded mission with countable outputs (Section 6.4)
Tools	Three named tools (blog); spreadsheets and vasTmind (paper); shared spreadsheets in practice	Any shared spreadsheet or platform that supports the six dimensions
Name and nickname	Inspired by, and coincidentally abbreviated as, Impossible Mission Force (blog)	Formal name defines the method; nickname retained as motivational name
Words of the formal name	Not explained; “Analysis” outside the acronym	Each word read as a component of the method; not statistical factor analysis (Section 6.1)
Team qualities (“5C”)	Listed but not measured; “harbouring” versus “hiding”	Treated as claimed consequences and hypotheses, not as attributes (Sections 5.4 and 7.4)
Achievement measure	No stated denominator; formula unreadable; values above 100 per cent	Planned achievement bounded at 100 per cent, extra output reported separately, optional declared weights (Section 6.3)
Version cadence	Monthly (paper); about two weeks or static (practice)	Cadence declared per mission on the Viewboard (D5)
Credit for the method	Innovation attributed to Prof. Untung Rahardja (blog); paper led by Sudaryono	Unresolved; to be settled by the originators

The third contribution is contextual. By connecting IMF to the creative campus, the paper places a local management method in the frame of a national creative-economy policy and a global conference. The creative-economy literature has been rich in structures and outcomes and thin in operational methods [20, 21]. IMF offers a method that is already embedded in at least one university and its partner network and that can be studied, improved and, if the propositions hold, transferred.

8.2 Practical Implications

For teams, the definition offers a checklist: a mission should declare its purpose, outputs and dates; break its work into coded tasks; name an owner for each task; link evidence; run in versions with a countdown and a closing; and frame and celebrate its work. For university leaders, it offers a convention, planned achievement plus extra output, that makes missions comparable without discouraging extra work. For those who design creative-campus programmes, it offers a way to make incubation, competitions and grant applications produce consistent records. For developers of monitoring platforms, the dimensions offer a specification against which platforms can be compared with the spreadsheets they replace [1, 2].

The analysis also suggests caution. Visible rankings can motivate, but they can also embarrass contributors whose work is less visible, such as those who care for team relations or do preparatory work that produces no artefact. The meaning-and-recognition dimension should therefore be applied with the care that research on servant leadership and humanistic innovation recommends [18, 19], and teams should agree in advance on how rankings will be used. Four safeguards follow from the analysis. First, recognition can name categories of contribution, such as coordination, mentoring, care for the team and preparatory work, so that contributions that produce no artefact are visible. Second, recognition can be given at team or sub-team level as well as to individuals, which rewards collaboration rather than internal competition. Third, the rules of recognition can be written on the Viewboard at the start of the mission, so that no one is surprised by how a ranking is used. Fourth, rankings can be reviewed periodically for uneven effects across groups of contributors, for example by gender or programme, with changes made where they appear. These safeguards connect the recognition dimension to the greater-good aim of the creative economy, which is to widen rather than narrow the circle of people whose creative work is valued [11, 35].

8.3 Limitations

The study has five limitations. First, it coded citation function only in the sixteen open-access Pandawan works, and the remaining thirty citing works may engage more closely with IMF. Second, coding was done by a single analyst; a documented second pass and explicit decision rules, together with the reported sentence topics, allow the decisions to be checked, but independent double coding would strengthen the finding. Third, the practice corpus consists of five sheets examined in depth and others seen only in snippets, all from one university network, and the structures described may not represent all IMF use. Fourth, the consequences of IMF, including the five team qualities, remain unmeasured, and the propositions in Section 7.4 are hypotheses. Fifth, the related literature was restricted to recent studies in the Pandawan journals, which ensured relevance to the Indonesian campus setting but excluded international work on project management, dashboards and gamification that could enrich the analysis of related concepts.

8.4 Future Research

Three lines of research follow. A process study should specify how IMF runs a creative-campus project from idea to output, including roles, cadence and rituals, and test it in practice. A measurement study should develop an indicator set and maturity model from the six dimensions, validate it with experts and pilot it on real missions. And an outcome study should test the propositions, ideally by comparing missions run with and without the redefined IMF across cohorts.

Each of these can now build on a definition that is explicit about what IMF is and is not.

9. Conclusion

This paper set out to clarify what IMF is, how it has been described and used, and how it should be defined if it is to serve creative-campus projects. The founding texts describe IMF as a simple, low-cost tool that makes POAC workable through a spreadsheet with a Viewboard and a Content grid. The citing literature has not developed this description: none of the sixteen coded open-access citing works engaged with the method, and half misattributed its authorship. Practice, however, has moved well ahead of print, adding output targets, task codes, evidence links, countdowns, closing rules, roles, narrative sentences and recognition.

From this evidence we derived six defining attributes and proposed a new definition of IMF as a low-cost, spreadsheet-native mission-management method in which a team declares a mission on a Viewboard, decomposes it into coded, evidence-linked tasks and measures achievement as verified outputs over declared targets, so that the four management functions become one visible, versioned and celebrated cycle. We argued that creative-campus projects, with their countable outputs, many contributors, external deadlines, need for credible data and dependence on voluntary motivation, need exactly the combination that IMF provides. The next step is to put the definition to work and to test whether it delivers what it promises.

Declarations

Funding. This research received no specific grant from any funding agency in the public, commercial or not-for-profit sectors.

Conflict of interest. The authors declare no conflict of interest. The originator of the IMF method is cited in this paper and is not an author.

Data availability. No new data involving human participants were collected. The study analysed published documents and the structure of spreadsheets accessed read-only; no personal data were extracted. The coded citation-function data set (sixteen citing works, with DOI, reference number, sentence topic and category) is available from the corresponding author on reasonable request.

Use of AI tools. Generative AI tools were used to assist with language editing, drafting support and formatting of this manuscript. The authors reviewed and verified all content, quotations and references and take full responsibility for the work.

References

- [1] U. Rahardja, L. Sulisty, D. Safarina, M. Rapidan Kusuma, N. Silawati, and Z. Nanle, “HibahQu Education Monitoring Platform Based on Human-Centric Orange Technology Laravel 12 Vue.js,” *ADI Bisnis Digit. Interdisiplin J.*, vol. 6, no. 2, pp. 203–218, Dec. 2025, doi: [10.34306/abdi.v6i2.1348](https://doi.org/10.34306/abdi.v6i2.1348).
- [2] I. P. Gustiah, N. Lutfiani, M. R. Kusuma, E. P. Lestari, and T. Green, “Grant Submission Monitoring System Based on Orange Technology Using Laravel 12 and Vue.js,” *J. Orange Technol.*, vol. 1, no. 2, pp. 75–90, Apr. 2025, doi: [10.68012/jot.v1i2.24](https://doi.org/10.68012/jot.v1i2.24).
- [3] L. Larisang, S. Sanusi, M. A. Bora, and A. Hamid, “Practicality and Effectiveness of New Technopreneurship Incubator Model in The Digitalization Era,” *Aptisi Trans. Technopreneurship*, vol. 7, no. 2, pp. 318–333, Jul. 2025, doi: [10.34306/att.v7i2.482](https://doi.org/10.34306/att.v7i2.482).
- [4] M. H. R. Chakim, U. Rahardja, E. D. Astuti, E. Erika, and C. T. Hua, “The Social Empowerment Role of the Penta Helix Entrepreneurship Ecosystem in Driving the National Economy,” *ADI Pengabd. Masy. J.*, vol. 6, no. 1, pp. 1–13, Sep. 2025, doi: [10.34306/adimas.v6i1.1283](https://doi.org/10.34306/adimas.v6i1.1283).
- [5] A. Padli, N. Khairunnisa, A. Khanza, D. Andayani, and E. Halim, “Strategi Pengembangan Startup Teknologi di Indonesia Melalui IT Business Incubation: Technology Startup Development Strategy

- in Indonesia Through IT Business Incubation,” J. MENTARI, vol. 3, no. 1, pp. 73–80, Sep. 2024, doi: [10.33050/mentari.v3i1.621](https://doi.org/10.33050/mentari.v3i1.621).
- [6] U. Rahardja, M. Budiarto, K. Lutfiyah, O. F. P. Wahyudi, I. K. H. Azz, N. Azizah, and D. Julianingsih, “Analysis of the Effectiveness of Visual Language and Narrative in Conveying Value Propositions in Pitching Decks,” *Int. Trans. Artif. Intell.*, vol. 3, no. 2, pp. 161–170, May 2025, doi: [10.33050/italic.v3i2.807](https://doi.org/10.33050/italic.v3i2.807).
 - [7] L. H. A. P. Prawira, A. F. Ummah, M. R. Aditiya, and D. W. Nugroho, “Knowledge Management: Efforts to Create an Excellent Digital Creative Industry,” *Startupreneur Bus. Digit.*, vol. 2, no. 2, pp. 172–181, Oct. 2023, doi: [10.33050/sabda.v2i2.365](https://doi.org/10.33050/sabda.v2i2.365).
 - [8] R. D. Hadiwidjaja, A. I. Suroso, H. Siregar, and I. Sailah, “Performance Paradigm: Entrepreneurial Good University Governance Mediating Leadership Style in State Universities,” *Aptisi Trans. Technopreneurship*, vol. 6, no. 3, pp. 492–508, Nov. 2024, doi: [10.34306/att.v6i3.453](https://doi.org/10.34306/att.v6i3.453).
 - [9] Jaan, I. Maria, and Mia, “Unlocking Success: Human Resource Management for Startupreneur,” *Startupreneur Bus. Digit.*, vol. 3, no. 1, pp. 89–97, Apr. 2024, doi: [10.33050/sabda.v3i1.505](https://doi.org/10.33050/sabda.v3i1.505).
 - [10] B. Callula, E. Sana, G. Jacqueline, J. Nathalie, and L. Maria, “A Structural Framework for Effective Time Management in Dynamic Work Environments,” *Aptisi Trans. Manage.*, vol. 8, no. 2, pp. 152–159, May 2024, doi: [10.33050/atm.v8i2.2256](https://doi.org/10.33050/atm.v8i2.2256).
 - [11] C. Lukita, A. W. Abdul Rahman, I. N. Hikam, and U. Rahardja, “Integrating Strategic Management with SDG 10 for Sustainable Development and Equity,” *Aptisi Trans. Technopreneurship*, vol. 7, no. 2, pp. 638–649, Jul. 2025, doi: [10.34306/att.v7i2.507](https://doi.org/10.34306/att.v7i2.507).
 - [12] N. Lutfiani, U. Rahardja, and K. T. Khasanah, “The Development Viewboard As an Information Media at Official Site Asosiation,” *Aptisi Trans. Manage.*, vol. 6, no. 1, pp. 10–18, Jan. 2022, doi: [10.33050/atm.v6i1.1529](https://doi.org/10.33050/atm.v6i1.1529).
 - [13] A. Dudhat, N. P. Lestari Santoso, Henderi, S. Santoso, and R. Setiawati, “Blockchain in Indonesia University: A Design Viewboard of Digital Technology Education,” *Aptisi Trans. Technopreneurship*, vol. 3, no. 1, pp. 68–80, Mar. 2021, doi: [10.34306/att.v3i1.146](https://doi.org/10.34306/att.v3i1.146).
 - [14] P. Hendriyati, F. Agustin, U. Rahardja, and T. Ramadhan, “Management Information Systems on Integrated Student and Lecturer Data,” *Aptisi Trans. Manage.*, vol. 6, no. 1, pp. 1–9, Jan. 2022, doi: [10.33050/atm.v6i1.1527](https://doi.org/10.33050/atm.v6i1.1527).
 - [15] F. Rahardja, L. K. Choi, R. C. Wijaya, and R. A. Sunarjo, “Gamification in Digital Startups: Enhancing User Engagement and Business Growth,” *Startupreneur Bus. Digit.*, vol. 4, no. 1, pp. 1–11, Apr. 2025, doi: [10.33050/sabda.v4i1.639](https://doi.org/10.33050/sabda.v4i1.639).
 - [16] P. Rachmadi, R. Situmorang, M. Sukardjo, R. E. Indrajit, and E. Gautama, “Enhancing Entrepreneurial Competencies and Student Engagement through Gamification in Learning Management Systems,” *Aptisi Trans. Technopreneurship*, vol. 7, no. 2, Jul. 2025, doi: [10.34306/att.v7i2.589](https://doi.org/10.34306/att.v7i2.589).
 - [17] D. Wuisan, J. W. Manurung, C. Wantah, and M. E. Yuliana, “Entrepreneurial Self-Employment and Work Engagement in MSMEs Through Autonomy and Rewards,” *Aptisi Trans. Technopreneurship*, vol. 7, no. 1, Mar. 2025, doi: [10.34306/att.v7i1.448](https://doi.org/10.34306/att.v7i1.448).
 - [18] H. Hamdan, U. Rahardja, M. Muhtarom, and A. Valerry, “Transforming Education Management with Orange Servant Leadership and Happiness Practices,” *Aptisi Trans. Technopreneurship*, vol. 8, no. 2, pp. 741–753, Jul. 2026, doi: [10.34306/att.v8i2.938](https://doi.org/10.34306/att.v8i2.938).
 - [19] S. Wibowo, I. A. Widjaya, J. Zanubiya, R. Evans, and U. Rahardja, “Orange Technology for Humanistic Innovation in Higher Education,” *J. MENTARI*, vol. 4, no. 2, pp. 105–115, Mar. 2026, doi: [10.33050/mentari.v4i2.899](https://doi.org/10.33050/mentari.v4i2.899).
 - [20] N. P. L. Santoso, R. A. Sunarjo, and I. S. Fadli, “Analyzing the Factors Influencing the Success of Business Incubation Programs: A SmartPLS Approach,” *ADI J. Recent Innov.*, vol. 5, no. 1, pp. 60–71, Sep. 2023, doi: [10.34306/ajri.v5i1.985](https://doi.org/10.34306/ajri.v5i1.985).

- [21] A. Sutarman, U. Rahardja, F. Putri Oganda, S. Millah, and N. Nur Azizah, “The Role of Information Technology in Empowering the Creative Economy for Sustainable Tourism,” *Aptisi Trans. Technopreneurship*, vol. 5, no. 2, pp. 175–185, Aug. 2023, doi: [10.34306/att.v5i2sp.352](https://doi.org/10.34306/att.v5i2sp.352).
- [22] T. Suminar, J. Sutarto, Y. Siswanto, and A. D. Cahyani, “Creating a Technopreneurship-Based Life Skills Education Model with Methods of Project-Based Learning,” *Aptisi Trans. Technopreneurship*, vol. 7, no. 2, pp. 567–581, Jul. 2025, doi: [10.34306/att.v7i2.576](https://doi.org/10.34306/att.v7i2.576).
- [23] S. Yunita, A. Gandamana, W. Lubis, F. Rachman, and S. Bali, “Innovative Learning Strategies by Embedding Design Thinking-based Project Learning in Textbooks for Edupreneurial Impact,” *Aptisi Trans. Technopreneurship*, vol. 7, no. 2, Jul. 2025, doi: [10.34306/att.v7i2.539](https://doi.org/10.34306/att.v7i2.539).
- [24] K. Moyo, S. D. W. Prajanti, M. Muhtarom, and F. Adzim, “Evaluating the Impact of Interdisciplinary Learning Factory Models on Innovation Skills Using Statistical Analysis,” *Int. Trans. Educ. Technol.*, vol. 4, no. 2, pp. 100–115, May 2026, doi: [10.33050/itee.v4i2.1081](https://doi.org/10.33050/itee.v4i2.1081).
- [25] J. Juanda, R. J. Riansyah, A. Arsadi, and L. Bethany, “Towards Entrepreneurial Campus Sustainability: Integrating Artificial Intelligence for Resource Allocation in Business Management,” *Aptisi Trans. Technopreneurship*, vol. 6, no. 3, pp. 314–323, Nov. 2024, doi: [10.34306/att.v6i3.410](https://doi.org/10.34306/att.v6i3.410).
- [26] B. Rawat and D. Maulidditya, “Entrepreneurship in Information Technology as a Method for Improving Student Creativity in the Digital Economy,” *IAIC Trans. Sustain. Digit. Innov.*, vol. 4, no. 1, pp. 32–37, Oct. 2022, doi: [10.34306/itsdi.v4i1.568](https://doi.org/10.34306/itsdi.v4i1.568).
- [27] Y. Shino, C. Lukita, K. B. Rii, and E. Ayu Nabila, “The Emergence of Fintech in Higher Education Curriculum,” *Startupreneur Bus. Digit.*, vol. 1, no. 1, pp. 10–18, Apr. 2022, doi: [10.33050/sabda.v1i1.71](https://doi.org/10.33050/sabda.v1i1.71).
- [28] Y. Wulansari, N. S. Arasid, and O. Qurotulain, “The Role of Digital Platforms in Shaping Entrepreneurial Innovation Ecosystems,” *ADI Bisnis Digit. Interdisiplin J.*, vol. 7, no. 1, pp. 48–57, Jun. 2026, doi: [10.34306/19amev85](https://doi.org/10.34306/19amev85).
- [29] S. Wijono, U. Rahardja, H. D. Purnomo, N. Lutfiani, and N. A. Yusuf, “Leveraging Machine Learning Models to Enhance Startup Collaboration and Drive Technopreneurship,” *Aptisi Trans. Technopreneurship*, vol. 6, no. 3, Nov. 2024, doi: [10.34306/att.v6i3.462](https://doi.org/10.34306/att.v6i3.462).
- [30] I. K. Mertayasa, U. Rahardja, M. Hardini, and E. P. Harahap, “Interior Design Alphabet Incubator 3.0 Based on Planner 5D,” *Technomedia J.*, vol. 8, no. 1, pp. 82–108, May 2023, doi: [10.33050/tmj.v8i1.1982](https://doi.org/10.33050/tmj.v8i1.1982).
- [31] R. Ginting Munthe, Q. Aini, N. Lutfiani, I. Van Persie, and A. Ramadhan, “Transforming Scientific Publication Management in the Era of Disruption: SmartPLS Approach in Innovation and Efficiency Analysis,” *Aptisi Trans. Manage.*, vol. 8, no. 2, pp. 123–130, May 2024, doi: [10.33050/atm.v8i2.2261](https://doi.org/10.33050/atm.v8i2.2261).
- [32] G. A. Pangilinan, A. Tambunan, and E. D. Astuti, “Tokopedia E-Commerce is Being Used to Present Opportunities for Young Business Owners to Succeed in the Digital Economy Amid the Pandemic,” *Startupreneur Bus. Digit.*, vol. 2, no. 2, pp. 182–191, Oct. 2023, doi: [10.33050/sabda.v2i2.284](https://doi.org/10.33050/sabda.v2i2.284).
- [33] S. Purnama, H. Baedowi, and Y. J. Putrasetia, “Creative Industry Development Strategy for Home Culinary Businesses,” *Startupreneur Bus. Digit.*, vol. 2, no. 2, pp. 126–135, Oct. 2023, doi: [10.33050/sabda.v2i2.302](https://doi.org/10.33050/sabda.v2i2.302).
- [34] A. Gunawan, W. Hasyim, M. Putih, T. W. Wirjawan, I. A. Gopar, and S. Stephanie, “A Comprehensive Bibliometric Study of Digital Leadership Influence on Technopreneurial Success,” *Aptisi Trans. Technopreneurship*, vol. 7, no. 2, pp. 492–502, Jul. 2025, doi: [10.34306/att.v7i2.498](https://doi.org/10.34306/att.v7i2.498).
- [35] R. Nuraeni, E. A. Natalia, S. V. Sihotang, Q. Aini, and U. Rahardja, “The Influence of Collaborative Methods in English Language Learning on Student Empathy and Tolerance: Pengaruh Metode Kolaboratif Pembelajaran Bahasa Inggris pada Empati dan Toleransi Mahasiswa,” *J. MENTARI*, vol. 4, no. 1, pp. 01–10, Sep. 2025, doi: [10.33050/mentari.v4i1.787](https://doi.org/10.33050/mentari.v4i1.787).
- [36] S. Saibaba, “Profiling Critical Thinking and AI Attitudes in Management Education Using a Factor-Cluster Approach for the Digital Business Era,” *Aptisi Trans. Technopreneurship*, vol. 8, no. 2, pp. 493–507, Jul. 2026, doi: [10.34306/att.v8i2.593](https://doi.org/10.34306/att.v8i2.593).

- [37] C. Lukita, A. K. Chandra, R. Fahrudin, N. M. Agatha, and D. P. Suci, “Maturity Level Measurement Model of MSMEs for Sustainable Economic Growth,” *Aptisi Trans. Technopreneurship*, vol. 8, no. 2, pp. 434–442, Jul. 2026, doi: [10.34306/att.v8i2.781](https://doi.org/10.34306/att.v8i2.781).
- [38] M. R. Aulia, Z. Lubis, I. Effendi, and Junaidi, “Leveraging Quality Management and Partnership Programs for Technopreneurial Success: Exploring their Impact on MSME Performance,” *Aptisi Trans. Technopreneurship*, vol. 5, no. 2, pp. 157–168, Jul. 2023, doi: [10.34306/att.v5i2.303](https://doi.org/10.34306/att.v5i2.303).