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Qa-Kpi System: An Instrument for Measuring the Impact and Dissemination of Knowledge in Culture and Arts Training

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ABSTRACT: The governance of knowledge organizations within the creative sector is increasingly challenged by the need to measure knowledge impact and dissemination. This is particularly evident as non-traditional academic outputs such as exhibitions, performances, documentaries, or digital products cannot be adequately captured by standard bibliometric indicators. Although recent research assessment reforms have highlighted the limitations of bibliometrics, there remains a dearth of specific managerial instruments designed to translate participant feedback into structured operational data. This study proposes and validates the QA–KPI (Quality Assurance–Key Performance Indicators) system as an interactive control system, designed to measure five dimensions of knowledge impact and dissemination including organizational quality (OQI), academic value (AVI), academic engagement (AEI), knowledge impact (KII), and future participation intention (FPI). Data were collected from 268 valid responses following a multi-component academic and cultural event series and analyzed using descriptive statistics, Cronbach's alpha, exploratory factor analysis (EFA), parallel analysis, and Spearman's rank correlation. The results indicate high reliability across the five composite indices; however, the parallel analysis suggests a two-factor structure. Consequently, the QA–KPI system should be interpreted as an operational dashboard for monitoring knowledge impact, dissemination, and academic engagement, rather than a substitute for peer review or bibliometrics. Notably, OQI and AEI exhibit the strongest correlations with overall satisfaction, thereby serving as two critical managerial leverage points for program enhancement.

KEYWORDS: Arts and cultural education; interactive control system; knowledge dissemination; knowledge impact; QA–KPI; research governance.

1. INTRODUCTION

In recent years, global research assessment reforms have demonstrated a clear shift away from measurement frameworks predominantly relying on bibliometric indicators towards multidimensional approaches that are more sensitive to context and to the diversity of scholarly outputs. Assessment frameworks such as DORA, the Leiden Manifesto, and CoARA emphasise that research quality should not be reduced to publication counts, citation numbers, or journal prestige, but should be considered in relation to intrinsic value, the context of knowledge production, and broader academic–social contributions (DORA, 2024; Coalition for Advancing Research Assessment, 2022; Hicks et al., 2015). This issue is particularly pressing in the fields of culture, arts, and applied humanities, where "non-traditional research outputs" such as exhibitions, performances, or documentary films simultaneously function as knowledge products and as vehicles for knowledge dissemination, yet remain difficult to reflect adequately through conventional measurement frameworks. Experience from systems such as the Research Excellence Framework (REF) in the United Kingdom and Excellence in Research for Australia (ERA) indicates that practice-based outputs are increasingly recognised in formal evaluations (Australian Research Council, 2022; Research Excellence Framework, 2022). Nevertheless, translating that recognition into operational governance tools at the level of educational institutions remains a significant gap.

In practice, a common response among higher education institutions to quality assessment pressures has been an increased reliance on KPIs and internal measurement systems. However, the central issue lies not in whether KPIs exist, but in how they are used. In many cases, KPIs operate as diagnostic control systems which primarily used to compare actual outcomes against targets and to detect variances according to a pass/fail logic. This approach may be appropriate in relatively stable environments where goals, outputs, and success criteria are clearly defined. However, in creative and open academic settings, where knowledge is produced through interaction, experience, and social reception, deploying KPIs purely as monitoring instruments risks various forms of reductionism: privileging easily countable indicators over harder-to-measure values, increasing compliance pressure at the expense of learning, and inadvertently overlooking forms of impact that are important yet do not manifest as formal academic publications.

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It should be clarified at the outset that the QA–KPI system in this study is not conceived as a tool for measuring research quality in its core sense. It is also not intended to replace peer review or bibliometrics. Rather, QA–KPI is better suited to measuring knowledge impact and knowledge dissemination–particularly in multi-component academic–cultural activities involving diverse participant groups.

A theoretically appropriate anchor derives from Simons (1991) perspective on interactive control systems. Under this approach, a control system is not merely a monitoring mechanism, but can also direct organisational attention toward strategic uncertainties, stimulate information exchange, and support organisational learning. The value of such a system lies not in providing a final answer, but in creating a structured dialogue infrastructure through which managers, lecturers, and participants jointly interpret signals, challenge assumptions, and adjust actions. From this perspective, KPIs in creative academic environments need not be understood as compliance-checking instruments; instead, they may be designed as "information anchors" for decision-making and continuous improvement. Subsequent research on management control has further demonstrated that the impact of control systems on innovation is neither linear nor automatically positive; what matters most is that the system is mobilised as a tool for dialogue and coordination, rather than strictly as a rigid monitoring mechanism (Bisbe & Otley, 2004).

On this basis, the present study proposes and validates a QA–KPI system designed to standardise participant feedback data from an academic-cultural event series into operational indicators that can be stored, compared, and visualised. The selected case is a series of commemorative activities marking the centenary of the death of Phan Chau Trinh (1926 - 2026) – a leading Vietnamese intellectual and cultural figure-conceived as a creative academic "living lab" in which a scholarly conference, digital exhibition, documentary film, arts programme, and public engagement coexist within a multi-component space. The study is guided by three research questions:

(1) Can participant feedback data from an academic–cultural event series be standardised into a set of QA–KPI indices?

(2) What is the reliability and operational value of this index system?

(3) What does the use of QA–KPI suggest for the governance of knowledge impact and dissemination in cultural and arts education?

Theoretically, the paper contributes to the literature on performance measurement and management control by demonstrating that experiential data can be elevated into a governance information layer in contexts where bibliometrics cannot provide adequate reflection. Practically, the paper proposes a dashboard-based approach to help cultural and arts educational institutions monitor organisational quality, perceived academic value, academic engagement, knowledge impact, and the capacity to sustain participant communities.

In this study, the term QA–KPI is used as an operationally constructed compound concept, referring to a system of key performance indicators oriented towards quality assurance at the operational level. To avoid terminological confusion, the paper distinguishes clearly between "indicator" and "index". An "indicator" is understood as an observable variable, signal, or specific measurement quantity; for example, the 20 Likert-scale statements in the questionnaire are measurement indicators (items). In the field of bibliometrics, publication counts, citation counts, the h-index, or journal-level metrics serve as bibliometric indicators. An "index" (or composite indicator) is defined as an aggregated measure constructed from multiple component indicators, which can be standardised, compared, and used in governance. This conceptualisation aligns with methodological literature on composite indicators, whereby individual indicators can be selected, normalised, weighted, and aggregated into a single index to reflect a multidimensional phenomenon (OECD, European Union, & EC-JRC, 2008; UNECE, 2019). Under this conceptualisation, OQI, AVI, AEI, KII, and FPI are the five QA–KPI indices; the observable variables constituting each index are the measurement indicators. It should be noted that QA–KPI is neither a pre-standardised term in international literature, nor a complete evaluation system, accreditation standard, or nationally standardised index set. The most appropriate compound term in this paper is a "quality-assurance-oriented KPI dashboard", emphasising that the KPI component provides a structured data layer for monitoring and comparison, while the QA component orients data use towards quality assurance and improvement. This system is employed as an operational tool to standardise participant feedback data into information that can be stored, compared, and visualised.

2. LITERATURE REVIEW AND CONCEPTUAL FRAMEWORK

2.1. Measurement Challenges in Creative Knowledge Organisations

In knowledge organisations, particularly higher education institutions and creative education units, the question of what to measure has become a central governance issue. Unlike commercial enterprises, where effectiveness can be reflected through revenue, costs, or productivity, academic organisations create value through products and processes that are more difficult to quantify. This is especially evident in the fields of culture and the arts, where scholarly output encompasses not only articles and monographs but also exhibitions, performances, documentary films, digital products, and public dialogue. In this context, a continued near-exclusive reliance on bibliometric indicators risks narrowing the concept of scholarly value, while simultaneously overlooking the social and educational impacts that are central to creative academic ecosystems.

Research assessment reform efforts over more than a decade have consistently emphasised these limitations. DORA calls for the elimination of journal-based metrics as proxies for research quality (DORA, 2024). The Leiden Manifesto affirms that quantitative indicators should play only a supporting role and must be contextualized (Hicks et al., 2015). CoARA extends this spirit by promoting the diversity of outputs and a responsible, multidimensional assessment approach (Coalition for Advancing Research Assessment, 2022). Recent studies on research quality in the creative arts continue to reinforce this argument. Lewandowska et al. (2024, pp. 644, 650) demonstrate that quality judgement in creative arts research cannot be reduced to bibliometric performance, as artistic development, disciplinary judgement, originality, and peer review continue to occupy a central role. This reinforces the need to distinguish between assessing the intrinsic quality of research and measuring the reception, participation, and dissemination of knowledge. In this sense, QA–KPI does not replace the assessment of the "intrinsic artistic/scholarly quality" of a product or activity that assessment still requires professional peer judgement from colleagues in the field, including artists, researchers, lecturers, expert panels, or scholarly reviewers. Instead, QA–KPI supplements a layer of governance evidence regarding how learners and the public receive, experience, engage with, and disseminate knowledge from academic and cultural activities.

Nevertheless, the principles of responsible research assessment primarily provide guidance on the cautious use of indicators, while there remains a shortage of operational tools enabling educational institutions to transform learner and public feedback into structured governance data.

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This gap is particularly evident in cultural and arts education, where many academic activities are hybrid in nature, combining research, creative practice, and public communication. A programme integrating a conference, exhibition, documentary film, and arts performance may simultaneously function as a space of knowledge production, knowledge reception and dissemination, and a learning environment. Accordingly, the task is not to replace scholarly assessment with a new metric, but to develop a way of transforming experiential data into governance information sufficiently structured to support quality assurance and the improvement of academic and cultural activities.

2.2. Multidimensional performance measurement systems and their limitations in creative contexts

Performance measurement theory provides a direct foundation for approaching this issue. Neely, Gregory, and Platts (2005) define performance measurement as the process of quantifying the effectiveness and efficiency of actions; accordingly, a performance measurement system is a set of measures used to quantify both the efficiency and effectiveness of operations. More importantly, these authors argue that a measurement system cannot be understood merely as a list of indicators, but must be examined simultaneously across three levels: individual measures, the entire system of measures as a whole, and the relationship between that system and the organisation's operational environment.

The Balanced Scorecard of Kaplan and Norton (1992) extends the performance measurement logic by demonstrating that organisational effectiveness cannot be assessed solely through financial metrics. This model emphasises four complementary perspectives: financial, customer, internal processes, and innovation–learning. The critical point here is not to increase the number of indicators, but to select a sufficiently concise set of measures capable of linking strategic vision with operational action. In the context of cultural and arts education, if the governance of creative academic activities relies solely on publication outputs or financial metrics, many important dimensions–such as perceived academic value, academic engagement, knowledge impact, and the capacity to sustain participant communities–will be overlooked.

However, classical performance measurement frameworks require adaptation when applied to creative academic environments. Neely et al. (2005) as well as Kaplan and Norton (1992) primarily developed their arguments in business contexts or organisations with relatively stable value chains, where customers, products, processes, and outcomes can be defined more clearly. In cultural and arts education, customers may simultaneously be learners, the public, colleagues, artists, or community partners; "products" may be knowledge, experiences, public dialogue, or community connection; and "outcomes" may emerge at multiple and varying points in time. Consequently, if existing performance measurement frameworks are applied directly without adaptation, institutions may reproduce the very reductionist logic that research assessment reforms are attempting to overcome. This suggests the need for a supplementary theoretical lens on how measurement systems are used not merely on the structure of the indicators.

2.3. From diagnostic control to interactive control

Simons (1991) theory on top management attention to control systems provides a particularly suitable foundation. Simons argues that management control systems are frequently used as diagnostic tools such as setting goals, comparing actual outcomes, and reporting significant variances to trigger corrective actions. In many contexts, however, top managers do not solely rely on control systems for monitoring; rather, they selectively use certain systems interactively to focus organisational attention on strategic uncertainties, factors that could derail the organisation's vision for the future. He outlines four typical conditions of an interactive control system. First, the information generated becomes an important and recurring agenda addressed at the highest levels of management. Second, the process demands frequent and regular attention from operating managers at all levels. Third, data are interpreted and discussed in face-to-face meetings among superiors, subordinates, and peers. Finally, the system relies on the continual challenge and debate of underlying data, assumptions, and action plans. By employing these management tools interactively, top executives can guide organisational learning and influence the formation of new strategic initiatives

If QA–KPI were positioned purely as a diagnostic system, it would easily be reduced to a post-event performance scorecard: low scores trigger adjustments, high scores signal success. But when placed within the logic of interactive control, its role changes substantially. In this case, the index system does not aim to affirm five strictly independent components at the level of psychometrics. Rather, it creates a minimal structure through which leadership and stakeholders can jointly observe important dimensions of scholarly impact, thereby organising dialogue, setting priorities, and identifying strategic uncertainties in creative academic governance. Subsequent management control research reinforces this argument while also cautioning against treating "interactive control" and "diagnostic control" as fixed properties of a system. Bisbe and Otley (2004) demonstrate that the effects of interactive use on innovation depend on how control systems are mobilised in practice. Tessier and Otley (2012) further refine Simons' levers of control framework by distinguishing managerial intentions from participant perceptions of control–a distinction directly relevant to QA–KPI: a dashboard designed to serve dialogue may still be perceived as a monitoring mechanism if deployed in a punitive or compliance-oriented manner.

2.4. Research gap and conceptual framework

Although KPIs are common measurement tools for quantifying the effectiveness and efficiency of actions, their direct application to creative academic environments may lead to rigid monitoring and an impoverishment of hard-to-measure scholarly values. To address this risk, this study proposes the compound concept of QA–KPI (Quality Assurance–Key Performance Indicators) as an operational construct. Specifically, QA–KPI is conceived as a quality-assurance-oriented KPI dashboard, wherein participant feedback data are transformed into composite indices that can be standardised, compared, visualised, and used for governance dialogue. Within this concept, the KPI component provides a structured data layer for monitoring various dimensions of academic–cultural experience, while the QA component orients data use towards quality assurance and improvement. In other words, QA–KPI is not a substitute evaluation model or an accreditation system, but rather an operational tool that enables educational institutions to observe organisational quality, perceived academic value, academic engagement, knowledge impact, and the potential for future participation. This positioning draws on the performance measurement tradition, wherein the value of measurement lies not in a discrete list of indicators, but in its capacity to link organisational goals, actions, and environmental feedback (Neely et al., 2005), while simultaneously embedding data utilisation within the logic of interactive control–whereby data is not used to automate verdicts or replace expert judgement, but serves as an information anchor for managers, lecturers, and learners to engage in dialogue regarding quality improvement (Simons, 1991).

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Research assessment reforms have identified the problems of dependence on bibliometrics but have not yet provided sufficient concrete operational tools at the organisational level. Performance measurement theory has outlined how to design multidimensional measurement systems but has been developed primarily in business contexts. Management control research has shown that how a system is used matters more than the system itself. However, relatively few studies have transformed participant experiential feedback into an interactive control tool for cultural and arts education.

On this basis, the study constructs a QA–KPI framework comprising five operational indices: OQI (Organisational Quality Index), reflecting the organisational conditions and foundational experience of academic activities; AVI (Academic Value Index), representing the degree to which participants perceive the intellectual depth and scholarly significance of the content; AEI (Academic Engagement Index), reflecting the degree of participants' engagement within the academic space; KII (Knowledge Impact Index), representing the perceived knowledge impact following the activity; and FPI (Future Participation Index), reflecting the potential for sustaining the participant community. These five indices should not be understood as five validated constructs of research quality, but as five operational levers enabling educational institutions to observe different dimensions of knowledge impact and dissemination. From a complementary perspective, Letmathe and Meyer (2025) also demonstrate that management control systems can influence knowledge acquisition and innovation performance, thereby reinforcing the argument that how a measurement system is mobilised is just as critical as its structural design.

3. RESEARCH METHODOLOGY

3.1. Research design and case selection

The study employs a cross-sectional case study design, combining quantitative analysis with supplementary qualitative interpretation from open-ended questions. This design is appropriate because the study does not aim to establish a fully validated measurement model for the entire higher education system, but rather to test the feasibility of transforming participant feedback data into a governance information layer in a specific creative academic context–serving more as an exploratory governance study than as a confirmatory causal investigation.

The selected case is the series of centenary commemorative activities for Phan Chau Trinh (1926–2026), organised as a multi-component event incorporating a scholarly conference, a digital exhibition, a documentary film, and an arts programme. From a research perspective, this case operates as a creative academic living lab in which multiple forms of knowledge production, presentation, and dissemination coexist. The choice of this culturally specific case is not intended to emphasise its uniqueness, but to provide a data-rich context for observing how scholarly knowledge intersects with the experiences of learners and the public. Rather than affirming a universally applicable model, the paper draws on a specific case to propose design principles transferable to analogous creative contexts.

3.2. Data collection and sample

Data were collected through an online survey administered immediately following the conclusion of the event series. Each questionnaire comprised: (1) participant information; (2) 20 observable variables measured on a 5-point Likert scale; and (3) an overall satisfaction item accompanied by two open-ended questions inviting additional comments. Data were cleaned, coded, and analysed using RStudio 2025.05.1+513.

The sample comprises 268 valid responses. The majority of respondents were female (75.8%), under 25 years of age (94.8%), and regular full-time students (91.4%). In terms of components attended, participants were distributed across: scholarly conference (29.8%), digital exhibition (25.8%), documentary film (29.5%), arts programme (48.9%), and full programme attendance (63.1%; multiple selections permitted). This sample profile indicates that the dataset primarily reflects how young learners receive, interpret, and disseminate scholarly value–constituting evidence of learner- and participant-based impact rather than peer-reviewed assessment of research quality.

3.3. Measurement scale

Twenty observable variables on a Likert scale are used as measurement indicators (items). These indicators are organised into five composite indices, each comprising four indicators: OQI, AVI, AEI, KII, and FPI. These five indices are employed as operational indices for the governance dashboard, rather than being assumed to be fully validated psychometric scales measuring five independent constructs. In the initial validation phase, the measurement indicators constituting each index are evaluated for internal reliability and factor structure; subsequently, the score of each index is aggregated and standardised to a 0–100 scale to facilitate description, comparison, visualisation, and managerial dialogue. This approach is consistent with the methodological literature on composite indicators, whereby individual indicators can be selected, normalised, and aggregated into a single index to reflect a multidimensional phenomenon (OECD, European Union, & EC-JRC, 2008; UNECE, 2019). Simultaneously, it aligns with performance measurement research, which posits that the value of a measurement system lies not merely in the internal structure of the measures, but in its capacity to link measurement data with managerial action (Kaplan & Norton, 1992; Neely et al., 2005).

3.4. Data analysis

The data analysis procedure comprises five steps. First, descriptive statistics are used to characterise the sample and identify data trends. Second, Cronbach's alpha is employed to assess the internal reliability of the measurement indicators constituting each index. Third, exploratory factor analysis (EFA) combined with parallel analysis is used to examine the data structure. Fourth, scores are standardised to a 0–100 scale to facilitate comparison and dashboard visualisation. Fifth, Spearman correlations are computed to identify the relationship between each QA–KPI index and overall satisfaction. Open-ended responses are also read and thematically grouped to supplement the interpretation of quantitative results.

An important methodological note concerns the tension between the two-factor cognitive structure and the five-index governance framework. Parallel analysis suggests retaining two factors rather than five separate factors, indicating that participants tend to perceive their experience through a more condensed structure, broadly corresponding to organisational quality and academic impact/engagement. However, from a governance perspective, maintaining the five indices of OQI, AVI, AEI, KII, and FPI remains justified if they are positioned as operational levers rather than entirely distinct psychological constructs. According to Simons (1991), the value of an interactive control system lies not in perfectly reflecting individual cognitive structures, but in its capacity to focus organisational attention on strategic uncertainties, stimulate dialogue, and support action adjustment.

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These analytical steps are consistent with the study's objective: to examine whether QA–KPI possesses sufficient initial reliability and utility to function as a governance tool, rather than to confirm a causal measurement model. Accordingly, EFA results and parallel analysis are used for the cautious interpretation of data structure, while the five indices are maintained at the dashboard level to support monitoring, comparison, and the prioritisation of interventions in knowledge impact and dissemination governance.

4. RESULTS

4.1. Reliability and factor structure

Reliability testing results indicate that all five composite indices demonstrate high internal consistency. Cronbach's alpha ranges from 0.888 for OQI to 0.947 for FPI, indicating that the measurement indicators constituting each index exhibit sufficient cohesion for descriptive and correlational analyses (Table 1).

Table 1. Reliability Results and Exploratory Factor Analysis

Part A. Reliability of Measurement Indicators Constituting Each Operational Index

Index	No. of Items	Cronbach's α	Min r.drop	Max r.drop	Min Loading	Max Loading
OQI	4	0.888	0.712	0.780	0.632	0.884
AVI	4	0.938	0.834	0.876	0.508	1.017
AEI	4	0.921	0.748	0.864	0.332	0.724
KII	4	0.915	0.750	0.869	0.339	0.948
FPI	4	0.947	0.854	0.897	0.553	0.850

Part B. Summary of EFA for the Entire System of Measurement Indicators

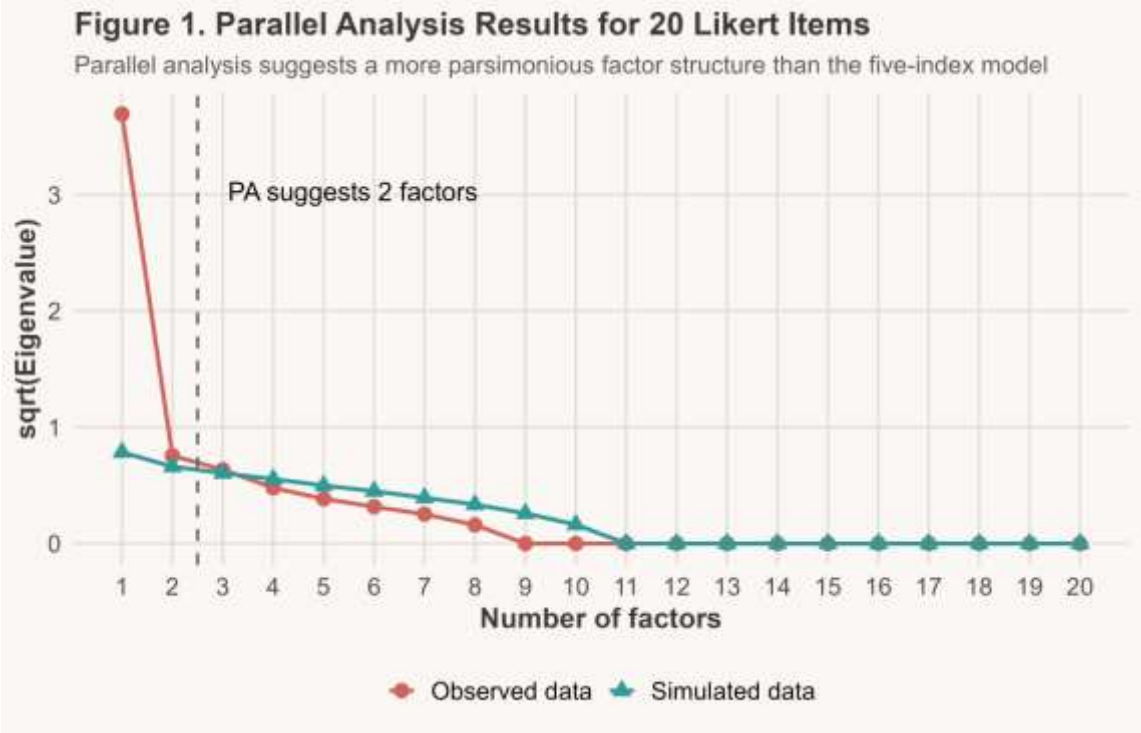
Parameter	Value
Number of observable variables	20
KMO	0.853
Bartlett's chi-square	9923.421
Bartlett's df	190
Bartlett's p-value	< 0.001
Factors suggested by parallel analysis	2
RMSEA	0.193
TLI	0.802
RMSR	0.013
Total variance explained, 5-factor model	88.60%
Total variance explained, 2-factor model	63.00%

Note: r.drop is the corrected item-total correlation of the measurement indicators. Factor loadings are presented as ranges for conciseness. Parallel analysis is used to determine the number of factors to retain. In this table, OQI, AVI, AEI, KII, and FPI are composite indices; the observable variables constituting them are measurement indicators.

At the level of data structure, EFA results indicate that the data are suitable for exploratory factor analysis, with KMO = 0.853 and a statistically significant Bartlett's test. However, parallel analysis suggests retaining two factors rather than five separate factors. Although the five-factor solution explains 88.6% of total variance, the fit indices of RMSEA = 0.193 and TLI = 0.802 indicate that caution is warranted in interpreting a five-dimensional structure.

Two-factor EFA with oblimin rotation shows that AVI, AEI, KII, and FPI primarily load on the first factor, interpretable as academic impact and engagement; while OQI primarily loads on the second factor, reflecting organisational quality. **Figure 1** illustrates the results of the parallel analysis. Results indicate that the data structure better corresponds to a two-factor solution than to a five-factor model. This suggests that participants tend to perceive their experience in a more condensed structure than the five initial indicator groups.

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Source: Authors' analysis based on 268 valid responses.

Note: The figure presents the results of parallel analysis applied to 20 Likert-scale observable variables. Observed eigenvalues clearly exceed simulated eigenvalues only for the first two factors; accordingly, results suggest retaining a two-factor structure rather than the initial five-index model.

This result does not mean that the five QA–KPI indicators lose their utility. Rather, it is necessary to distinguish between the cognitive structure of participants and the indicator structure at the governance level. Participants may perceive their experience along two broad dimensions, yet educational institutions still need the five indicators–OQI, AVI, AEI, KII, and FPI–to monitor different operational aspects, organise discussion, and prioritise improvements.

4.2. Standardised QA–KPI scores

After standardisation to a 0–100 scale (to facilitate interpretation, cross-index comparison, and dashboard visualisation), all five indices achieve positive levels: AVI = 89.0; KII = 88.8; AEI = 87.5; FPI = 87.4; OQI = 86.1. These results indicate that the event series was rated positively across all measured dimensions. In terms of content, the high AVI score indicates that participants perceived the content as having scholarly value; the high KII score indicates the programme was viewed as having knowledge impact; and the high AEI and FPI scores suggest that academic engagement and future participation intentions were also relatively strong. Table 2 presents this positive picture clearly.

Table 2. Standardised QA–KPI Scores (0–100) and Spearman Correlations with Overall Satisfaction

Index	n	Mean	SD	Median	Min	Max	Rating	Spearman's ρ	p-value
AEI	268	87.5	15.5	100	18.8	100	Good	0.657	4.82×10^{-34}
AVI	268	89.0	15.0	100	18.8	100	Good	0.589	4.69×10^{-26}
FPI	268	87.4	16.4	100	12.5	100	Good	0.603	1.46×10^{-27}
KII	268	88.8	14.9	100	25.0	100	Good	0.601	2.67×10^{-27}
OQI	268	86.1	16.1	93.8	25.0	100	Good	0.669	1.22×10^{-35}

Source: Authors' analysis based on 268 valid responses.

Note: Index scores are standardised to a 0–100 scale; higher scores reflect more positive assessments. Spearman's ρ is the rank-order correlation coefficient between each QA–KPI index and overall satisfaction.

The uniformly high scores should be interpreted in light of two methodological possibilities that have been acknowledged: ceiling effects and a tendency to evaluate more favourably than reality. Accordingly, the managerial significance of the results does not lie in concluding that "everything is good", but in reading the relative structure among the indices. OQI scores relatively lower than the other four indices–while still at a positive level–indicating that organisational quality and the foundational experiential layer of academic activities (i.e., the initial organisational

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experience enabling participants to access the programme, such as information, registration/check-in, reception, venue, coordination, and timing) retain considerable room for improvement. Conversely, the high scores of AVI and KII indicate that the relative strengths of the event series lie in scholarly content depth and perceived knowledge impact. Accordingly, the value of QA–KPI in this case is not to classify pass/fail, but to support the identification of relative strengths and intervention priorities within a creative academic experience.

4.3. Managerial leverage points via correlation with overall satisfaction

Spearman correlation analysis indicates that all five indices are positively and significantly correlated with overall satisfaction (all $p < 0.001$). The two strongest correlations are OQI ($\rho = 0.669$) and AEI ($\rho = 0.657$). The remaining indices–FPI, KII, and AVI–also exhibit clear positive correlations, though comparatively lower.

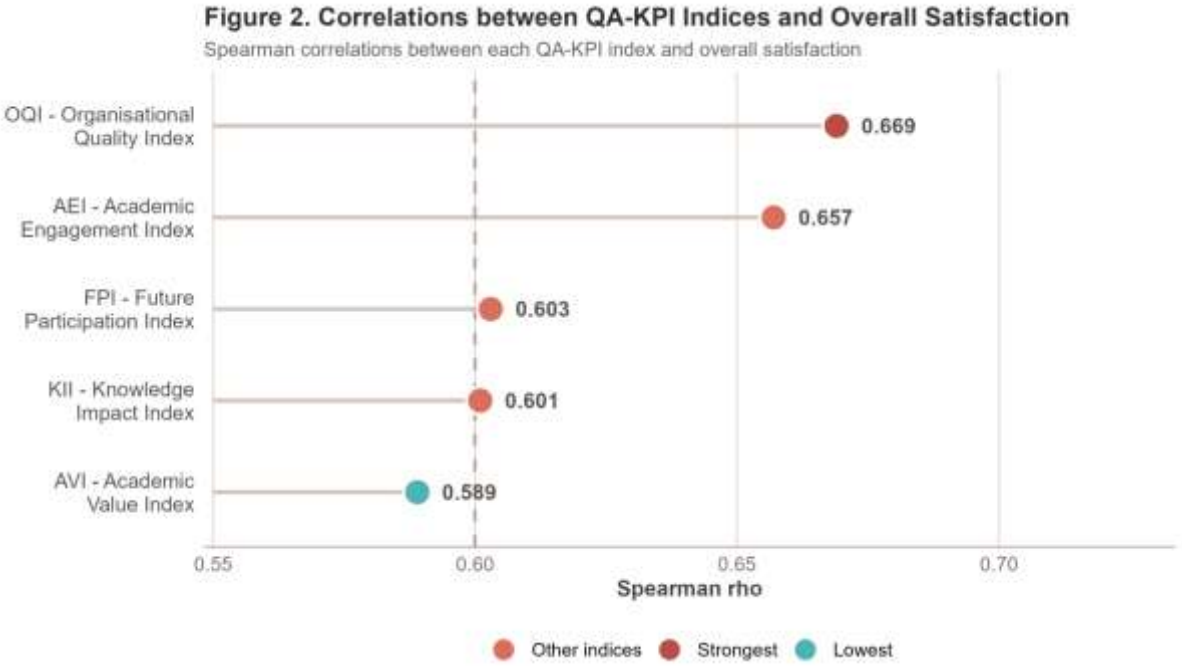


Figure 2 visualises this distinction.

Source: Authors' analysis based on 268 valid responses.

Note: The figure displays Spearman's rank-order correlation coefficients (ρ) between each of the five QA–KPI indices and overall satisfaction. OQI and AEI exhibit the strongest correlations and are identified as key managerial leverage points for improving the overall participant experience.

This finding carries important managerial implications. If the short-term goal of the educational institution is to improve the overall participant experience, intervention priorities should not be based solely on which index has the lowest or highest mean score, but on which index has the strongest relationship with overall satisfaction. OQI and AEI emerge as managerial leverage points–intervention points most likely to produce a discernible effect on the overall experience. This suggests that for similar activity series, educational institutions should attend not only to scholarly content depth, but should also devote greater attention to organisational arrangements, coordination, and the design of interactive rhythms to enhance participants' academic engagement.

A notable finding is that the index with the highest mean score is not the index with the greatest operational weight. AVI achieves the highest mean but has a lower correlation with overall satisfaction than OQI and AEI. This reflects an important principle of dashboard governance: a dimension rated highly does not necessarily represent the dimension most capable of producing the greatest change in the overall experience. Accordingly, QA–KPI enables educational institutions to distinguish between content strengths and operational leverage points, supporting more evidence-based decision-making compared with simply reading mean scores. The pairwise Spearman correlations among the five QA–KPI indices range from 0.742 to 0.870, indicating that the indices are fairly closely interrelated. Participants who rate scholarly value highly also tend to rate knowledge impact, engagement, and future participation highly. However, since no coefficient exceeds 0.90, the five indices do not exhibit signs of excessive overlap and may still be used as distinct perspectives in governance.

4.4. Qualitative evidence on participants' academic and artistic experience

Of the 268 valid responses, 166 provided comments on the most impressive content (61.9%) and 133 offered suggestions for programme improvement (49.6%). The qualitative responses indicate that participants were particularly impressed by the arts programme, artistic performances, documentary film, digital exhibition, and scholarly conference.

The most prominent thematic group was arts and aesthetic experience, with 158 responses (59.0%) highlighting performance items or artistic activities. This indicates that the scholarly value of the activity series was perceived not only through knowledge reception, but also through emotional experience and direct participation in the cultural–artistic space.

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Additionally, 81 responses (30.2%) addressed organisational aspects or offered improvement suggestions, primarily concerning duration, coordination, spatial arrangement, communication, guest introduction, and personnel management. These responses provide useful signals for enhancing organisational quality in subsequent programmes.

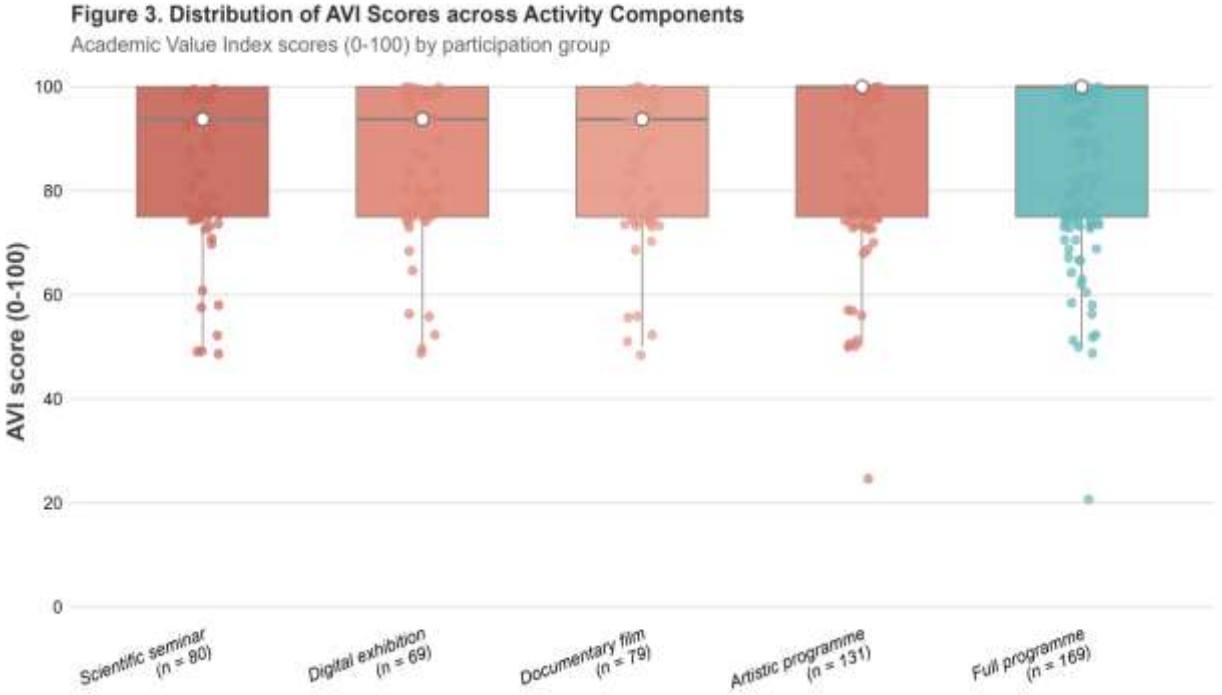
Overall, the qualitative feedback indicates that QA–KPI can supplement satisfaction scores by more clearly identifying the content that creates strong impressions and the areas requiring improvement in programme governance.

4.5. Experiential differences across programme components

To clarify the diagnostic value of the QA–KPI framework, the study analyses the distribution of the Academic Value Index (AVI) across each programme component. Figure 3 shows that AVI scores are generally maintained at high levels across all groups, with medians concentrated near the top of the scale. This reflects participants' positive perceptions of the scholarly value of the activity series. However, the degree of score dispersion varies across components. The arts programme group and the full programme group have larger sample sizes–n = 131 and n = 169 respectively–yet some lower values remain relative to the general level. Meanwhile, the conference, exhibition, and documentary film groups have high AVI medians, though interquartile ranges indicate some individual variation in the participant experience. This suggests that perceptions of scholarly value are not entirely uniform across activity types. This finding indicates that QA–KPI not only measures overall satisfaction but also helps identify components that warrant closer monitoring and more targeted improvement.

From a governance perspective, these differences provide useful signals for programme adjustment particularly regarding content design, activity coordination, and the assurance of experiential quality across participant groups. Thus, subgroup analysis contributes to affirming the role of QA–KPI as a diagnostic and decision-support tool in the governance of cultural and arts education.

Figure 3. Distribution of AVI Scores across Activity Components



Source: Authors' analysis based on 268 valid responses.

Note: Boxplots display the median and interquartile range; individual dots represent each participant's score.

Figure 3 presents the distribution of AVI scores across five programme components. Boxplots display the median and interquartile range, while individual dots represent each participant's score. Overall, AVI scores across all five components are concentrated in the upper range of the 0–100 scale, indicating that participants positively assess the scholarly value of the programme across multiple activity types. Although some individual variation is present, the general trend suggests that perceived scholarly value is relatively consistent throughout the entire activity series.

5. DISCUSSION

5.1. Knowledge impact and knowledge dissemination

An important question arising from the research findings concerns what this QA–KPI system actually measures. Given that the survey sample consists primarily of students and young participants, the indices should not be understood as direct measures of research quality or the scholarly competence of authors. Instead, QA–KPI reflects how scholarly content is received, experienced, engaged with, and disseminated by participants within a specific community. Accordingly, these indices are better suited to measuring knowledge impact and knowledge dissemination. As such, QA–KPI does not replace peer review or bibliometrics, but supplements a governance evidence layer regarding the degree of reception, participation, and scholarly experience. This approach is consistent with the spirit of the Leiden Manifesto and The Metric Tide, emphasising the responsible use of quantitative indicators in specific contexts and in combination with expert judgement (Hicks et al., 2015; Wilsdon et al., 2015). In a hybrid assessment model, peer review retains a central role in scholarly quality assessment; bibliometrics supports the

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tracking of traditional research outputs; and QA–KPI provides structured evidence of perceived impact, degree of engagement, and knowledge dissemination capacity–particularly in academic activities linked to creative practice, community education, and public engagement.

5.2. QA–KPI as an interactive control tool and cautious interpretation

Parallel analysis results suggest a two-factor structure rather than five separate factors as in the initial QA–KPI framework. This is an important finding, indicating that participants may not clearly distinguish OQI, AVI, AEI, KII, and FPI as five entirely independent perceptual constructs. Rather, their experience tends to converge around two broader dimensions: one related to organisational quality and one related to perceived scholarly impact/engagement. This requires cautious interpretation. That is QA–KPI should not yet be presented as a fully validated psychometric measurement model. The fact that indicator groups exhibit high internal reliability does not imply that they are five independent constructs at the individual cognitive level; accordingly, the statistical analyses in this study should be regarded as preliminary validation evidence of data consistency.

Nevertheless, the tension between the two-factor cognitive structure and the five-index operational framework does not undermine the governance value of QA–KPI, provided this toolkit is approached through the logic of an interactive control system. According to Simons (1991), an interactive control system is not used merely for monitoring, pass/fail evaluation, or simple performance reporting, but to attract leadership attention, activate dialogue, and support action in situations of strategic uncertainty. Under this lens, QA–KPI is not an event performance scorecard, but an information structure that enables institutions to observe how participants receive, experience, and disseminate scholarly–artistic value.

This understanding explains why the five indices are maintained at the operational dashboard level. In governance practice, indices need not be fully statistically independent to be useful. OQI, AVI, AEI, KII, and FPI function as five "attention anchors" associated with different questions and intervention directions: OQI addresses organisational conditions and initial participant experience; AVI addresses scholarly depth and significance; AEI addresses the level of engagement within the academic space; KII addresses perceived knowledge impact; and FPI represents the potential for sustaining the participant community.

The value of QA–KPI therefore lies not in perfectly reproducing the cognitive structure of participants, but in the capacity to provide structured signals for establishing a common language. Through this, managers, lecturers, and organisers can open a space for dialogue, debate assumptions, and agree on quality improvement directions. To reinforce this argument, subsequent studies should validate the QA–KPI model using methods such as CFA or SEM on multi-stakeholder samples; one viable development direction is a two-tier model, in which the cognitive tier comprises two broad dimensions, and the operational tier comprises five detailed indices directly serving governance.

5.3. Supplementing peer review and bibliometrics towards a hybrid assessment model

It should be emphasised that QA–KPI does not directly compete with bibliometrics or peer review, but supplements them within a hybrid assessment model. Bibliometrics offers strengths in its ability to quantify, compare, and track traditional research outputs; peer review offers strengths in disciplinary depth, scholarly quality judgement, and the intrinsic value of a work. However, both approaches have limitations when confronting academic–creative activities that are practice-based, involve public engagement, or entail community education. In such cases, QA–KPI may serve as a supplementary information layer, allowing observation of perceived scholarly impact, the degree of engagement, and knowledge dissemination capacity. The advantage of QA–KPI therefore lies not in replacing existing measures, but in enriching the governance picture of scholarly activities. This supplementation is particularly important in the context of cultural and arts education. If bibliometrics alone is used, institutions risk overlooking much of the process of knowledge organisation, reception, and public dissemination. If peer review alone is used, institutions may evaluate scholarly depth yet may not capture learning impact, engagement, or the capacity to sustain participant communities. Accordingly, the appropriate recommendation is not to transition from one assessment model to another, but to develop hybrid assessment models. In such models, peer review continues to occupy a central role in scholarly quality assessment; bibliometrics supports the tracking of traditional research outputs; and QA–KPI supplements structured evidence of impact, dissemination, and engagement in creative academic contexts.

5.4. Practical implications and transformation in cultural and arts education

For cultural and arts educational institutions, QA–KPI helps transform discrete feedback data into a structured governance information layer. The tool supports institutions in identifying whether an activity is strong in content but weaker in organisation; whether participants are satisfied but not genuinely academically engaged; and whether knowledge impact is sufficiently strong to sustain future participant communities. In the studied case, OQI and AEI are the two prominent leverage points, indicating that improving the overall experience depends not only on scholarly content, but also on organisation, coordination, communication, interactive rhythm, and participation space design.

The transformation value of the QA–KPI framework does not reside in the specific Phan Chau Trinh event, but in the design principles of the tool. The first principle is that when scholarly outputs are diverse and difficult to quantify using traditional indicators, educational institutions need a multidimensional dashboard to monitor knowledge impact and dissemination. The second principle is that the dashboard must balance standardisation and contextualisation: sufficiently uniform for comparison across activities, yet flexible enough to reflect the specificities of each creative context. The third principle is that learner and public feedback does not replace peer review but can provide important evidence of impact and engagement. In this sense, QA–KPI may be adapted for cultural and arts educational institutions in different contexts, provided the indices are calibrated to specific goals, activity types, and participant groups. In systems with established impact assessment traditions such as the UK REF, QA–KPI can supplement impact case studies with a structured data layer on how learners and the public receive knowledge. In Australia, given that ERA has been discontinued and a new assessment framework is under development, QA–KPI should be situated within the broader spirit of engagement/impact assessment, rather than tied rigidly to a specific evaluation mechanism. In the United States context, the tool may help educational institutions build periodic evidence of the impact of academic–creative activities on learners and communities. The critical condition for successful transformation is that QA–KPI must be used as a system for dialogue and learning, rather than as a top-down monitoring mechanism.

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In other words, the transferability of this framework lies not in replicating the index set, but in adapting the dashboard logic–standardising experiential data, contextualised comparison, and using data to improve quality–for each specific cultural and arts educational environment.

5.5. Limitations and directions for future research

This study has several limitations that must be clearly acknowledged. First, the sample consists predominantly of young learners and regular full-time students; accordingly, the results primarily reflect learner-based impact rather than the perspectives of lecturers, artists, managers, or industry professionals. Second, scores for all five indices are uniformly high, increasing the likelihood of ceiling effects and a tendency toward social desirability bias, while simultaneously reducing the capacity to differentiate across measurement dimensions. Third, EFA and parallel analysis results reveal a tension between the two-factor cognitive structure and the five-index operational structure; this indicates that the current framework is useful for governance but does not yet constitute a robustly validated measurement model. Fourth, data were collected at a single point in time and from a single measurement source, precluding causal conclusions or the tracking of change over time.

From these limitations, three directions for future development may be identified. In the short term, it is necessary to extend the survey to other stakeholder groups–including lecturers, artists, researchers, partners, and professional guests–to form a multi-stakeholder dataset. In the medium term, the measurement structure should be validated using confirmatory factor analysis (CFA) or structural equation modelling (SEM) on a new sample, while exploring the feasibility of a two-tier model: a more condensed cognitive tier and a more detailed operational index tier. In the long term, QA–KPI could be integrated into a broader research data infrastructure–such as an internal quality assurance dashboard or a Current Research Information System (CRIS)–to monitor knowledge impact and dissemination longitudinally. Developed in this direction, QA–KPI would serve not only to summarise an individual activity, but could become a governance information layer supporting evidence-based governance of creative academic work.

6. CONCLUSION

This study addresses an increasingly pressing issue in creative higher education: many academic activities generate genuine knowledge value yet cannot be adequately reflected by bibliometric indicators or traditional output measures. In response, the study proposes QA–KPI as an operational instrument for standardising participant feedback data into a structured governance information layer.

Through the case of a multi-component academic–cultural event series, the study demonstrates that experiential data can be organised into five operational indices: organisational quality, academic value, academic engagement, knowledge impact, and future participation intent. Empirical results indicate that all five indices exhibit high reliability; moreover, organisational quality and academic engagement are the two dimensions most strongly associated with overall satisfaction. Qualitative evidence and component-level analysis further indicate that QA–KPI can support the identification of differences in participant experience, rather than simply aggregating an overall satisfaction score.

The principal contribution of the study is not to affirm QA–KPI as a complete research quality measurement model, but to reposition it as a instrument for monitoring knowledge impact, knowledge dissemination, and academic engagement within creative academic ecosystems. In this direction, the study contributes to broadening the discussion on performance measurement in higher education by demonstrating that experiential data can be elevated into a governance information layer that supplements peer review and bibliometrics.

The path forward is not to replace existing assessment standards with a new set of KPIs, but to develop hybrid assessment models. In such models, peer review retains a central role in scholarly quality judgement; bibliometrics supports the tracking of traditional outputs; and QA–KPI supplements structured evidence of knowledge impact, knowledge dissemination, and academic engagement. The future of research assessment in creative fields does not lie in replacing scholarly judgement with metrics, but in enriching that judgement with contextualised data layers, sufficiently flexible to reflect the multidimensional nature of knowledge and scholarly impact.

REFERENCES

1) Australian Research Council. (2022). *ERA 2023 evaluation framework*. https://zenodo.org/records/13480728
2) Bisbe, J., & Otley, D. (2004). The effects of the interactive use of management control systems on product innovation. *Accounting, Organizations and Society*, *29*(8), 709–737. https://doi.org/10.1016/j.aos.2003.10.010
3) Coalition for Advancing Research Assessment. (2022). *Agreement on reforming research assessment*. https://www.coara.org/wp-content/uploads/2025/11/2022_07_19_rra_agreement_final.pdf-3.pdf
4) DORA. (2024). *Guidance on the responsible use of quantitative indicators in research assessment*. https://doi.org/10.5281/zenodo.10979644
5) Hicks, D., Wouters, P., Waltman, L., de Rijcke, S., & Rafols, I. (2015). Bibliometrics: The Leiden Manifesto for research metrics. *Nature*, *520*(7548), 429–431. https://doi.org/10.1038/520429a
6) Kaplan, R. S., & Norton, D. P. (1992). The balanced scorecard: Measures that drive performance. *Harvard Business Review*, *70*(1), 71–79.
7) Letmathe, P., & Meyer, C. (2025). Levers of control: Impact on innovation. *Journal of Corporate Accounting & Finance*. Advance online publication. https://doi.org/10.1002/jcaf.70000
8) Lewandowska, K., Ochsner, M., & Kulczycki, E. (2024). Research quality criteria in the creative arts. *Studies in Higher Education*, *49*(4), 639–653. https://doi.org/10.1080/03075079.2023.2272152
9) Neely, A., Gregory, M., & Platts, K. (2005). Performance measurement system design: A literature review and research agenda. *International Journal of Operations & Production Management*, *25*(12), 1228–1263. https://doi.org/10.1108/01443570510633639 (Original work published 1995)
10) OECD, European Union, & EC-JRC. (2008). *Handbook on constructing composite indicators: Methodology and user guide*. OECD Publishing. https://doi.org/10.1787/9789264043466-en

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11) Research Excellence Framework. (2022). *Overview report by Main Panel D and Sub-panels 25 to 34*. https://www.ref.ac.uk/publications/overview-report-by-main-panel-d-and-sub-panels-25-to-34/
12) Simons, R. (1991). Strategic orientation and top management attention to control systems. *Strategic Management Journal*, *12*(1), 49–62. [suspicious link removed]
13) Tessier, S., & Otley, D. (2012). A conceptual development of Simons' levers of control framework. *Management Accounting Research*, *23*(3), 171–185. https://doi.org/10.1016/j.mar.2012.04.003
14) UNECE. (2019). *Guidelines on producing leading, composite and sentiment indicators*. United Nations Economic Commission for Europe.
15) Wilsdon, J., Allen, L., Belfiore, E., Campbell, P., Curry, S., Hill, S., Jones, R., Kain, R., Kerridge, S., Thelwall, M., Tinkler, J., Viney, I., Wouters, P., Hill, J., & Johnson, B. (2015). *The metric tide: Independent review of the role of metrics in research assessment and management*. Higher Education Funding Council for England. https://responsiblemetrics.org/the-metric-tide/

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