A Conceptual Model of Educational Inspection and Self-Assessment Outcomes in Higher Education: The Mediating Role of Feedback and the Moderating Role of Quality Culture

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Abstract: - This study develops and empirically validates a conceptual model explaining how inspection activities influence self-assessment outcomes in higher education institutions, with particular emphasis on the mediating role of feedback quality and the moderating role of quality culture. A quantitative design using PLS-SEM was employed on a dataset of 377 respondents directly involved in quality assurance processes across Vietnamese higher education institutions. Inspection was operationalized as a multidimensional construct, while self-assessment outcomes were measured across three domains. Moderation and moderated mediation were further examined using regression-based approaches. The results reveal a highly asymmetric causal structure. Feedback quality emerges as a dominant amplification mechanism, exerting substantially stronger effects on outcomes than inspection variables. Mediation is selective rather than uniform, with only specific inspection dimensions operating through feedback. Contrary to theoretical expectations, quality culture does not exhibit significant moderating effects, indicating that its influence is structural rather than conditional. This study contributes to the literature by (i) reconceptualizing the inspection–feedback–improvement relationship as a mechanistic system, (ii) identifying feedback as an amplification mechanism rather than a passive mediator, and (iii) challenging the conventional treatment of quality culture as a moderating variable. The findings provide both theoretical refinement and practical implications for transitioning toward feedback-centered, learning-oriented quality assurance systems aligned with ESG 2015.

Key-Words: - Inspection, Self-Assessment, Internal Quality Assurance (IQA), Quality Culture, PLS-SEM, ESG 2015.

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1 Introduction

In the context of higher education reform and regional integration, inspection–review–internal evaluation has become increasingly central to the quality assurance (QA) systems of higher education institutions (HEIs), [1]. As governance models shift

from regulation-based control to autonomy and accountability, HEIs are required to build internally driven quality assurance (IQA) cycles capable of self-operation, monitoring [1], and continuous improvement in alignment with international standards such as the ESG 2015 of the European Higher Education Area (EHEA). Within this cycle, inspection/review functions not merely as a mechanism for identifying non-conformities but also as an instrument of organizational learning that strengthens reflective capacity, supports procedural adjustment, and nurtures a sustainable quality culture.

In Vietnam, Circular No. 12/2017/TT-BGDĐT and accompanying accreditation guidelines mandate that each HEI conduct periodic self-assessments accompanied by internal inspection and monitoring activities. However, reports indicate a significant gap between inspection findings and actual improvements, leading to a phenomenon often described as "assessment for accreditation" rather than "assessment for enhancement", [1]. This situation underscores the need to examine the inspection → feedback → improvement mechanism within the IQA context, in order to identify which aspects of inspection meaningfully contribute to improving the quality and effectiveness of institutional self-assessment, [1], [2].

Internationally, [3] found out in 2020, [4] will find out in 2025, and [5] found out in 2024 that educational inspection is really effective when the people giving feedback are good at it, the inspection teams know what they are doing, and everything is fair. The faculty is involved.

The "3P" model of IQA, which includes Purposes, People, and Processes, is important because it makes sure that what we want to learn, the people who are involved, and the way we do things all work together. This model thinks of inspection as a part of a cycle, the PDCA cycle, which is Plan, Do, Check, and Act, rather than just something we have to do for administration. IQA and the PDCA cycle are connected to inspection and the "3P" model. The interaction between inspection and quality culture generates an "amplification effect" that enhances the reflexivity, evidence-based orientation, and improvement focus of self-assessment outcomes.

Against this background, this article aims to understand how inspection activities affect the quality self-assessment results of universities. We want to know:

(1) How do internal and external inspections impact the outcomes of self-assessment?

(2) Which parts of the inspection have an effect?

(3) Does this effect grow when a university has a quality culture and quality assurance system in place?

Answering these questions is important for two reasons. It helps with research by supporting the idea that inspection leads to learning and improvement. It also provides advice for Vietnamese universities that are shifting from just following rules to really improving their quality. This will help these universities govern their quality better and make their self-assessment practices more sustainable and transparent. By looking into this, we can help Vietnamese universities improve their quality self-assessment.

2 Theoretical Foundation

2.1 Internal Quality Assurance under the 3P Model and Quality Culture

Internal Quality Assurance in education is seen as a system that is part of how a school is run, rather than just a set of things to do to follow rules. The 3P model. Purposes, People, and Processes. Is a way to understand how Quality Assurance systems work together to help a school learn and improve. The Purposes part makes sure that what Quality Assurance does is in line with what the school wants to achieve, what students should learn, and how the school can get better. This means that, by just looking back to see what went wrong, Quality Assurance looks forward to seeing how things can be improved.

The People part is important because it reminds us that people are what make Quality Assurance work. It is the teachers, administrators, and students who have to be involved and care about Quality Assurance for it to be effective. The Processes part is about having a regular way of doing things using data to make decisions and always trying to improve. This is similar to what [6] said in 2013.

The 3P model also helps us understand what a quality culture is. Quality culture is not something that exists on its own [1], but it is what happens when Purposes, People and Processes work together. It is about the values and norms that everyone in the school shares and how these help the school get better all the time. This is what some researchers, like [7], said in 2008. Others, like [8], said in 2017. It is also what organizational learning theory says, which is that schools can only get better if everyone is working together and sharing ideas.

So quality culture is like a foundation that helps Quality Assurance work rather than something that directly causes things to happen. It is what helps schools improve in a way, rather than just trying one thing and then stopping. The 3P model and quality culture are important for Internal Quality Assurance in education to really make a difference. Internal Quality Assurance, in education and the 3P model, can help schools learn and improve, and quality culture is a big part of this.

2.2 Faculty Engagement as a Translational Mechanism in IQA

Faculty engagement is an important part of how schools get better.

Faculty members are not just the people being evaluated, they are also the ones who figure out what the evaluations mean and what to do with that information.

When faculty members are really engaged, they are actively looking at themselves and their own teaching they are helping to decide how they will be evaluated. They are taking charge of what happens after the evaluation.

All of these things are necessary to make changes to how we teach, as [9].

We can see from the research that the way we inspect and make sure schools are doing a job is not as important as making sure the faculty members are really involved in the process.

This is what [3] found in 2020 and what [4] found in 2025.

When faculty members think the inspections are helpful and fair, they start to think more about their teaching, and the school as a whole starts to learn.

When inspections seem like just a bunch of rules to follow, or do not really relate to what is happening in the classroom, faculty members do not really get involved.

This is what some experts call " coupling," where there are rules in place, but they do not really change how things are done, as [10] said in 1978.

So faculty engagement is like a bridge between getting feedback and actually making changes.

It is the "People" part of the 3P model, which means it is about the faculty members. It is how we take the feedback we get and turn it into something that actually helps us get better.

Faculty engagement is very important because it helps us understand what the evaluations mean and what we should do with that information, and it helps us make sure that the evaluations are actually leading to changes in how we teach.

Faculty engagement is what makes the evaluations useful. It is what helps us to really improve the way we teach, and that is why faculty engagement is so important for faculty members and for the school as a whole.

2.3 Evolving Paradigms in Quality Assurance Research

The field of quality assurance in education has changed a lot over the past thirty years. At first, quality assurance models were mostly about making sure people did what they were supposed to do and following the rules. This was because people in charge wanted to make sure everyone was meeting the minimum standards, [11]. Now people are looking at quality assurance in a different way. They want to use evidence to make things better. They want the people who work at the institutions to take charge of making sure the quality is good, [12], [13].

Some people looked at all the research on quality assurance from 1993 to 2022. They found out that people are talking more about making quality, not just controlling it. They also found out that self-assessment is a part of internal quality assurance.

This means that the institutions are looking at themselves to see how they can improve, or just getting ready for someone else to come and check on them, [12]. This new way of thinking is part of an idea that says we should use evaluation to make things better, not just to judge them, [6].

Now, people who study quality assurance are saying that feedback and the use of data are very important. They also say that we should keep looking at what we're doing and making changes as we go. Some studies have shown that the quality of the feedback and the people who are giving it are more important than how we check on things, [3], [4]. This shows us that quality assurance systems are complicated and involve a lot of people and things. The outcomes we get depend on how all these things work. Quality assurance systems are like socio-technical systems, where outcomes emerge from the interaction between processes, actors, and contextual conditions, and quality assurance is what we are really talking about here: quality assurance in higher education, [14].

2.4 Self-Assessment, ESG 2015, and Alignment with Inspection

The Standards and Guidelines for Quality Assurance in the European Higher Education Area, also known as ESG 2015, give a foundation for

quality assurance systems. ESG 2015 says that internal self-assessment is key to quality assurance. It emphasizes being transparent, involving stakeholders, making decisions based on data, and always improving.

The European Network for Quality Assurance, or ENQA, in 2015 noted these points. Self-assessment is not a one-time task. A continuous process that is part of how institutions govern themselves. A main point of ESG 2015 is that inspection and self-assessment processes must work together. When inspections follow ESG principles, they can make internal quality assurance mechanisms better. They do this by giving feedback that's useful and can be acted on, and this feedback is part of how institutions learn and improve. This helps create a path from inspection to feedback to improvement.

In this path, evaluation directly leads to outcomes, as noted by [3] in 2020. On the other hand, when inspection and internal quality assurance processes do not work together, it can cause problems and reduce effectiveness. If inspection is seen as an external control that is not connected to what the institution wants to achieve its findings will not be used much in practice.

This results in assessment being done for accreditation not for actual improvement. This issue was seen in Vietnam. So quality assurance systems work well only if inspection is integrated with quality assurance making sure that external evaluation and internal improvement processes match.

3 Research Methodology

3.1 Conceptual Framework

This study looks at how educational inspection affects the results of self-assessment in educational institutions. It pays attention to how the quality of feedback and the quality of culture of a place affect these results. The study uses ideas from research on how well inspections work, internal quality assurance, and what organizations learn from their experiences. It tries to add to what we know about these things. Educational inspection is a part of this study, and it helps us understand self-assessment outcomes in higher education institutions.

Inspection practices are conceptualized as a multidimensional system reflecting how inspection is designed and implemented within IQA systems.
This construct is grounded in:

[1] A review of studies shows that how well inspections work really depends on things like how they're done, not how often they are done [3];

[2] Research findings also stress that having a good team getting feedback and talking to stakeholders is key [4];

[3] There is a model called the 3P model, which stands for Purposes, People and Processes. It helps put inspections into a quality assurance system that follows a plan-do-check-act approach [5].

This perspective aligns with the broader shift from “quality control” to “quality enhancement” in higher education, [6], [15].

Feedback quality is conceptualized as a mediating construct capturing the extent to which inspection produces actionable insights.

Studies have shown that feedback is really important for people to learn and get better.

1. Feedback helps people learn and improve, as we can see from the work of [16].
2. Feedback is like a connection between looking at how people are doing and helping them get better, which is something that [17] talked about in 2009.
3. When we are talking about quality assurance, feedback helps to connect the characteristics of how we inspect things and the outcomes we get, as seen in the work of [3] and [9].

Thus, feedback quality functions as the central transmission mechanism in the inspection–improvement process.

Quality culture refers to shared values and practices that support continuous improvement [7]. In this study, it is operationalized in conjunction with IQA maturity, including PDCA implementation, data transparency, and organizational learning. Empirical evidence suggests that quality culture acts as a moderating condition, enhancing the effectiveness of QA processes, [5], [8].

Self-assessment outcomes are thought of as something with parts, including how good the report is, how complete the evidence is, and how much improvement happens after the assessment, [14], [15]. This is in line with what ESG 2015 says, where self-assessment is a main way to make things better, and with ideas about evaluating to make improvements. The European Network for Quality Assurance, or ENQA, said this in 2015. The Organization for Economic Co-operation and Development, or OECD, also talked about it in 2013 with their evaluation for improvement ideas. Self-assessment is a part of this, and it is used to make quality better, as ESG 2015, the OECD, and

ENQA suggest, with self-assessment being important for quality enhancement.

The framework specifies (Figure 1, Appendix):

1. Direct effects: Inspection practices influence self-assessment outcomes;
2. Mediated effects: Feedback quality transmits the effects of inspection;
3. Moderated effects: Quality culture shapes the strength of these relationships.

This reflects a dynamic inspection–feedback–improvement system, consistent with organizational learning theory, [10].

For convenience in quantitative analysis, the components are briefly coded in Table 1 (Appendix). This coding ensures alignment between conceptualization, measurement, and structural modeling.

3.2 Research Samples

Data were collected through a survey that ran for eight weeks. The survey questions were sent out through email at work groups for quality assurance professionals and direct contacts with academics to reach people who are actively involved in quality assurance.

Prior to the survey, a small group of quality assurance experts tested the survey to make sure the questions were clear, relevant, and easy to answer. After testing, the final survey was sent out with an explanation of why the study was being done and what was expected of participants.

To ensure data quality, several checks were put in place. Responses were checked to make sure they were complete, and any with a lot of missing information were removed. The responses were also checked for consistency to identify any that seemed fake or not thought out.

Reminders were also sent out regularly to encourage people to participate without making it mandatory.

The final dataset of 377 valid observations satisfies established requirements for PLS-SEM analysis, exceeding the minimum threshold suggested by the “10-times rule” and ensuring sufficient statistical power for detecting medium effect sizes, [18].

The sample is spread across three types of educational institutions. 41.9% of respondents are from public universities, 36.1% from non-autonomous public universities, and 22.0% from private universities (Table 2, Appendix). This mix helps represent governance structures in the higher education system. Respondents come from three groups involved in quality assurance. The largest group is faculty members who take part in self-assessment or inspection, making up 40.8%. Then there are programme administrators and QA officers at 33.4% and staff handling accreditation and evidence documentation at 25.8% (Table 2, Appendix). Most respondents, over 80%, have less than two years of experience in quality assurance activities.

Many report regularly or leadingly participating in inspections, showing the sample is well-informed. The sample's suitability comes from its relevance and composition. Respondents are directly involved in quality assurance, inspection, and self-assessment in roles like management, academics, and technical areas. This ensures the data reflects experience, which is vital for understanding inspection practices, feedback quality and improvement outcomes. Unlike staff surveys, this study targets those directly involved in these processes, making the measurements more valid.

The sample includes stakeholder groups offering a broad view of QA processes. It covers system design (administrators), implementation (faculty), and operational support (accreditation staff). This variety of perspectives reduces bias. Aligns with previous research on distributed quality assurance systems, [7], [9].

The samples spread across autonomous, non-autonomous, and private institutions introduce variation in governance and autonomy. These factors influence quality assurance systems. By including types of institutions, the sample can capture how inspection practices differ and lead to various improvement outcomes. The respondents' high level of experience and involvement in inspections means the dataset is not just large but rich in information. This provides a basis for testing the proposed model using PLS-SEM.

This study follows the World Education Research Association's (WERA) principles, ensuring participation is voluntary, informed, and confidential for all respondents.

3.3 Measurement Structure and Scale Reliability

The way we measured things was checked using a two-step approach that experts recommend, including looking at how reliable the measurements are, if they are valid, and if they are different from each other, [18].

As you can see in Table 3 (Appendix), all the things we were measuring show that they are consistent. To be specific:
Cronbach's Alpha is between 0.848 and 0.958
McDonald's Omega is between 0.888 and 0.965

1. Split-half reliability is between 0.853 and 0.955

All these numbers are higher than 0.7, which is what experts say they should be, so we can be sure that the measurements are reliable.

The measurement model, which includes McDonald's Omega, gives us an idea of how reliable the measurements are, especially when we are measuring complex things, [19]. This is particularly important for this study because inspection practices are complex and have parts.

The results in Table 4 (Appendix) show that the convergent validity of the results is established and that we have two numbers to look at:

1. The Composite Reliability of the results in Table 4 (Appendix) ranges from 0.887 to 0.965.
2. The Average Variance Extracted of the results in Table 4 (Appendix) ranges from 0.529 to 0.799.

This means the results in Table 4 (Appendix) give us information about the convergent validity of the results.

All values meet the recommended thresholds (CR > 0.7; AVE > 0.5), confirming that the constructs explain a substantial portion of the variance in their indicators (Fornell & Larcker, 1981).

Notably, the dependent variables exhibit high AVE values (0.757–0.799), indicating strong convergence. In contrast, independent variables show moderate AVE values, reflecting their multidimensional nature – consistent with prior QA research, [20].

Discriminant validity was assessed using the HTMT criterion (Table 5, Appendix). All HTMT values are below the conservative threshold of 0.85, indicating that constructs are empirically distinct, [21].
Importantly:

1. Inter-correlations among independent variables are low
2. Feedback Quality shows stronger associations with outcomes, consistent with its mediating role

These findings are much in line with what other people have said before about how feedback is really important for making things better. People like [16] back in 2007, and [17] in 2009, have all talked about how feedback is the thing that connects evaluation and improvement.

Overall, the measurement model demonstrates:
1. Strong reliability
2. Adequate convergent validity
3. Clear discriminant validity

Thus, the measurement structure is deemed robust and suitable for subsequent structural model analysis.

4 Research Results

4.1 Structural Model Evaluation and Mechanistic Analysis

The results of the model show that things are not equal and are arranged in layers. This means that there are differences in how we can explain things, how things affect each other, and how strong these effects are. We see this kind of unevenness more and more in structural equation modeling. It means that the causes of things are complicated and do not always follow a line. The strength of an explanation. The path it takes to cause something else does not always match up in a simple way, as seen in the work of [22] and [23]. The structural model results really highlight this unevenness and complexity.

The model has a problem with explaining things. It does a good job of explaining what happens in the end with numbers like 0.526 to 0.564.. When it comes to the part that is supposed to help figure out how we got there, which is Feedback Quality, it does a very bad job with a number as low as 0.029. This shows that even though the model is good at explaining what happens, it is not good at explaining how it happens. This means that feedback is not a simple result of inspection characteristics. There are things that affect it, like the context or the organization, that we cannot see. This is like what some people said, like [24] and [25] in 2008, that when we try to figure out how things work, we often leave out important details about what happens earlier on.

When you look at the effect sizes of things, it becomes really clear that there is a paradox. The things that have to do with inspecting something have a moderate effect on things with effect sizes of 0.012 to 0.077. On the other hand, the quality of the feedback has a really big effect with effect sizes of 0.779 to 0.866 (Table 6, Appendix). This means that one thing has a lot influence on the results than

other things. In words, the way people inspect things has an effect mainly because it makes other things happen rather than because it directly causes something to happen. This is like what happens in systems where one thing helps explain why something else happens. It is not a direct thing. This is what some researchers, like [22] found out in 2022. Also, what [26] found out in 2016.

The direct effects further confirm this pattern. While inspection variables have coefficients ranging from approximately 0.07 to 0.18, Feedback Quality demonstrates coefficients around 0.63 – approximately 4 to 8 times larger (Table 7, Appendix). This reflects a dominant predictor structure, where the mediator behaves as a quasi-primary driver of outcomes. In SEM terminology, this suggests a strong endogenous centrality of the mediator, a condition often observed in models where process variables (e.g., feedback) act as key transmission hubs, [27].

However, the mediation analysis reveals a heterogeneous pattern. Only the competence of inspection teams shows significant indirect effects, while other variables do not (Table 8, Appendix). This suggests the presence of selective or partial mediation, rather than a uniform mediating mechanism. Technically, this indicates that different inspection dimensions operate through distinct causal pathways – some through feedback, others directly. This finding fits with the idea of mediation. It shows that multiple mechanisms work at the same time. They do not follow one pathway. This is, like what [28] in 2010.

Another critical insight emerges from the combination of high Q^2 values (0.404–0.445) and low R^2 for the mediator (Table 9, Appendix). This implies that the model predicts outcomes effectively but does not adequately capture the internal transmission mechanism. In predictive-oriented SEM, such divergence between predictive relevance and explanatory adequacy suggests that the model captures outcome variance without fully specifying the underlying causal process, [29].

This pattern suggests that the model fits the outcomes but under-specifies the process, highlighting the need for moderation analysis (addressed in Section 4.2). In organizations, when things are not clearly defined, it usually means there are other things at play that we do not see. These things can be rules that only work in situations or factors that affect what is happening around us, but they are not included in our model [30].

Overall, the structure of our model has three technical characteristics:

(1) The way we explain things is not the same on both sides

(2) When we get feedback, it has an effect and makes things stronger

(3) There are many different ways that feedback works

These findings show that the inspection process works well because it helps to create good feedback that we can use to make things better. Inspection does not work because of what it does directly, but because it helps to make feedback that is good and that we can use to improve. This idea is supported by what we know about feedback. Feedback is a part of learning and making things better, as we can see from the work of Hattie and Timperley, and Black and Wiliam. Feedback helps us to learn and to do things better. This is what the inspection process is trying to do. The feedback that we get from inspection helps to make things better. This is why inspection is important.

4.2 Moderation and Moderated Mediation Analysis

This part looks at the results from Section 4.1. Checks if the quality of inspections depends on how mature the quality culture is at a place. It also checks if this affects how feedback is given. To do this, the analysis is done in two steps: (1) first, it checks if the quality culture directly affects the inspections; (2) then it checks if the quality culture affects how feedback is given after an inspection.

The moderation results (Table 10, Appendix) reveal a highly consistent yet non-conditional pattern. All interaction coefficients between inspection variables and quality culture (β_interaction) are extremely small (on the order of 10^{-5}) and statistically insignificant ($p > 0.10$) across all dependent variables. This holds across all inspection dimensions as well as the mediating construct.

From a statistical perspective, the near-zero interaction effects indicate negligible conditional variance. The inclusion of interaction terms does not meaningfully increase explanatory power ($R^2 \approx$ 0.03–0.05), suggesting that the relationship between inspection practices and outcomes remains invariant across levels of quality culture.

Table 11 (Appendix) demonstrates a strongly asymmetric structure. Feedback quality (MV_FQ) exhibits consistently large effects ($\beta \approx 0.52$–0.58), while inspection variables show moderate direct effects ($\beta \approx 0.07$–0.17)

This pattern reflects a leverage structure in which feedback acts as the primary transmission mechanism. Meanwhile, interaction effects

(MV_FQ × Mod_QC) remain negligible, indicating that mediation is not conditionally moderated.

Thus, the model effectively reduces to a non-moderated mediation structure, where the feedback mechanism operates independently of contextual variation.

Bootstrap results (Table 12, Appendix) reveal heterogeneous mediation. Only selected variables show significant indirect effects, indicating selective mediation rather than a uniform mechanism.

Overall, the results reveal:

No significant moderation effects
Strong dominance of mediation
Asymmetric explanatory structure

This suggests that the inspection–feedback–improvement system operates as a mechanistic process rather than a conditional one. The thing that makes inspections really work is that they give us information to act on. This is more important than the situation or circumstances that the inspection is being done in. Inspections are only good if they give us feedback that we can actually use to make things better.

5 Discussion and Policy Implications

5.1 Discussion

This study has some results. It shows that the way things work is not the same on both sides, and this is a deal when we think about it. We learned three things that add to what we already know about making sure the quality of higher education is good.

First, we did not find any evidence that quality culture changes the results. All the numbers we looked at were very small. Did not mean anything, which tells us that the relationships between how inspections are done and how self-assessments turn out are the same no matter what the quality culture is like. This means that quality culture does not really change the results. It is more like the background or the situation that everything else happens in. This is what other people have said before, like [7] in 2008, and [8] in 2017, who thought of quality culture as a set of values that are part of an organization and as a condition that affects the organization. The higher education quality assurance research is what we are talking about here, and the quality culture is a part of it. The study of higher education quality assurance is important. The findings of this study reveal a lot about quality culture and its role in higher education quality assurance research. However, the present findings also raise an important theoretical critique: modeling quality culture as a moderating variable in SEM frameworks may misrepresent its nature, as its influence appears to be systemic and diffuse rather than interaction-based.

Second, feedback quality emerges as a dominant amplification mechanism within the model. Its effect sizes and coefficients substantially exceed those of all inspection-related variables, indicating that feedback is not merely a mediating conduit but a central leverage point. This finding extends existing feedback theory. While [16] identify feedback as a powerful influence on learning, and [17] conceptualize it as a bridge between assessment and improvement, both perspectives primarily treat feedback as a transmission mechanism. The present study advances this view by demonstrating that feedback also amplifies the effects of inspection, transforming input influences into stronger outcome impacts. This suggests that the effectiveness of inspection lies less in procedural characteristics and more in its capacity to generate high-quality, actionable feedback.

Third, the analysis shows that inspection dimensions do not all work in the same way. Some inspection aspects, like the competence of the inspection team, have an impact, but others do not. This means that different inspection parts work through different methods. This finding matches the idea that mediation's not always complete, [28]. It also suggests that mediation only happens under conditions depending on the independent variable. This challenges the assumption in statistical models that one mediator controls all relationships.

These findings suggest that the relationship between inspection, feedback, and improvement is a process-based system. Inspection does not directly lead to improvement; it leads to feedback, which then drives improvement. This helps to move quality assurance research from control-based models toward learning-based and process-based frameworks. It also shows that future research should focus on mechanisms and learning processes, not just on conditional effects.

5.2 Policy Implications

The study found some things that can help us make quality assurance systems better in higher education. First, we need to change the way we do inspections. Of just checking if people are doing things right, we should focus on giving them helpful feedback that they can use to improve. This

means inspection teams should give feedback that is based on facts and can be used to make changes.

Second, the quality of feedback is really important. We should make sure that feedback is good and that people use it to make decisions. To do this, we need to make inspection teams create standards for feedback and make sure feedback is part of the decision-making process.

Third, we need to think about quality culture in a way. Of just talking about it, we need to make it a part of how we do things. This means we should include quality culture in how we govern, collect data, and work with stakeholders.

All of these things point to one change: we need to move from just controlling quality to creating a system that helps people learn and improve. This is what other countries are doing. It is especially important for countries like Vietnam that are creating new quality assurance systems. Quality assurance systems like the one in Vietnam need to focus on feedback and learning to help higher education improve.

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Artificial intelligence (AI)-assisted tools were used solely to improve the language, grammar, and readability of the manuscript. All research ideas, study design, data collection, data analysis, interpretation of findings, and scientific conclusions were developed, verified, and approved by the authors, who take full responsibility for the integrity and accuracy of the work.

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APPENDIX

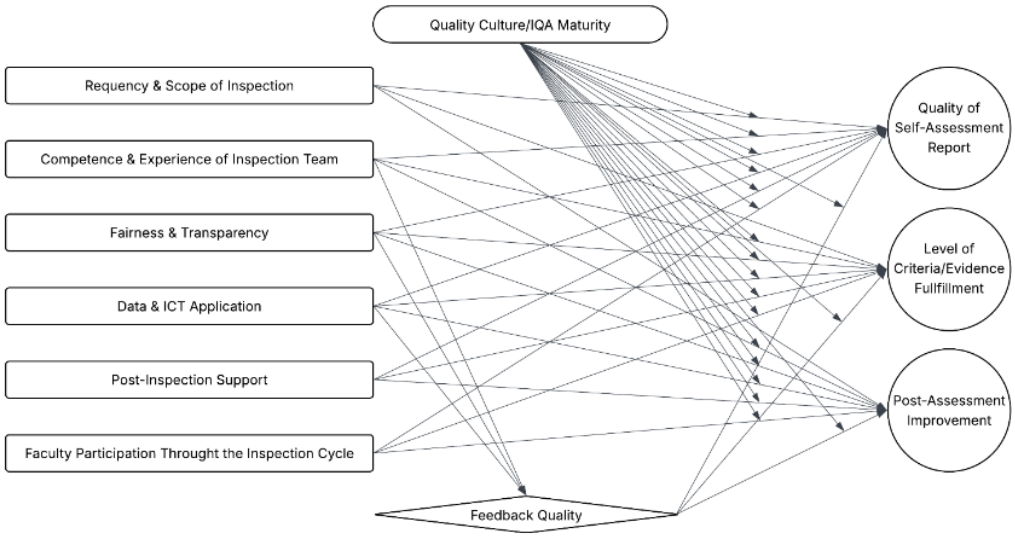

Fig. 1: Research Model
Source: By Authors' conceptualization

Table 1. Coding Observed Variables

	Factor	***Num. of Observed***	***Code***
Independent Variables			
1	Requency & Scope of Inspection	7	IV_RS
2	Competence & Experience of Inspection Team	8	IV_CE
3	Fairness & Transparency	7	IV_FT
4	Data & ICT Application	8	IV_DI
5	Post-Inspection Support	6	IV_PI
6	Faculty Participation Throught the Inspection Cycle	9	IV_FP
Mediating Variable			
7	Feedback Quality	6	MV_FQ
Moderator Variable			
8	Quality Culture/IQA Maturity	6	Mod_QC
Dependent Variables			
9	Quality of Self-Assessment Report	7	DV_SR
10	Level of Criteria/Evidence Fullfillment	7	DV_CF
11	Post-Assessment Improvement	8	DV_PA

Source: Developed by the Authors based on the research model

Table 2. Summary of Sample Statistics

		Frequency	***Percentage (%)***
Type of Institution	Autonomous Public University	158	41.9
	Non-autonomous Public University	136	36.1
	Private University	83	22.0
Role in Quality Assurance Activities	Programme Administrator/QA Officer	126	33.4
	Faculty Members Involved in Self-Assessment or Inspection	154	40.8
	Accreditation and Evidence Staff	97	25.8
Total		377	100

Source: By Authors calculation using IBM SPSS Statistics 27.0

Table 3. Result of the reliability assessment of the scale

Factor	***Cronbach's Alpha***	***McDonald***	***Split-Half***
IV_RS	0.869	0.899	0.859
IV_CE	0.874	0.901	0.866
IV_FT	0.875	0.903	0.875
IV_DI	0.892	0.914	0.899
IV_PI	0.848	0.888	0.853
IV_FP	0.898	0.917	0.901
MV_FQ	0.873	0.904	0.880
Mod_QC	0.876	0.906	0.878
DV_SR	0.958	0.965	0.955
DV_CF	0.953	0.961	0.947
DV_PA	0.954	0.961	0.952

Source: By Authors calculation using IBM SPSS Statistics 27.0

Table 4. Convergent validity of the measurement model

Construct	***rho_A***	***CR***	***AVE***
DV_CF	0.953	0.961	0.779
DV_PA	0.954	0.961	0.757
DV_SR	0.958	0.965	0.799
IV_CE	0.886	0.900	0.529
IV_DI	0.902	0.913	0.568
IV_FP	0.910	0.916	0.549
IV_FT	0.903	0.901	0.566
IV_PI	0.860	0.887	0.566
IV_RS	0.876	0.897	0.555
MV_FQ	0.874	0.904	0.612
Mod_QC	0.898	0.905	0.614

Source: By Authors calculation using SmartPLS 3

Table 5. Discriminant validity – the HTMT criterion of the measurement model

	DV_CF	***DV_PA***	***DV_SR***	***IV_CE***	***IV_DI***	***IV_FP***	***IV_FT***	***IV_PI***	***IV_RS***	***MV_FQ***
DV_PA	0.662									
DV_SR	0.613	0.636								
IV_CE	0.266	0.251	0.195							
IV_DI	0.147	0.127	0.210	0.073						
IV_FP	0.137	0.176	0.133	0.108	0.069					
IV_FT	0.165	0.145	0.111	0.075	0.079	0.109				
IV_PI	0.132	0.177	0.241	0.076	0.091	0.097	0.064			
IV_RS	0.174	0.175	0.224	0.094	0.077	0.063	0.108	0.083		
MV_FQ	0.745	0.760	0.749	0.147	0.075	0.083	0.109	0.081	0.130	
Mod_QC	0.156	0.121	0.122	0.075	0.069	0.074	0.156	0.057	0.145	0.055

Source: By Authors calculation using Smart PLS 3

Table 6. Effect Size

	DV_CF	***DV_PA***	***DV_SR***	***MV_FQ***
IV_CE	0.048	0.038	0.015	0.016
IV_DI	0.020	0.015	0.064	0.003
IV_FP	0.013	0.028	0.012	
IV_FT	0.015	0.012	0.002	0.008
IV_PI	0.014	0.031	0.077	
IV_RS	0.019	0.018	0.041	
MV_FQ	0.779	0.860	0.866	

Source: By Authors calculation using IBM SPSS Statistics 27.0

Table 7. Direct Effect

→		***β***	***t-value***	***p-value***
IV_CE	DV_CF	0.152	4.402	0.000
	DV_PA	0.133	4.070	0.000
	DV_SR	0.081	2.174	0.030
	MV_FQ	0.125	2.657	0.008
IV_DI	DV_CF	0.098	2.749	0.006
	DV_PA	0.082	2.163	0.031
	DV_SR	0.169	4.792	0.000
	MV_FQ	0.057	1.116	0.265
IV_FP	DV_CF	0.079	2.085	0.037
	DV_PA	0.114	3.179	0.001
	DV_SR	0.073	1.925	0.054
IV_FT	DV_CF	0.085	2.355	0.019
	DV_PA	0.073	2.214	0.027
	DV_SR	0.026	0.719	0.472
	MV_FQ	0.086	1.758	0.079
IV_PI	DV_CF	0.082	2.257	0.024
	DV_PA	0.119	3.548	0.000
	DV_SR	0.185	5.247	0.000
IV_RS	DV_CF	0.096	2.319	0.020
	DV_PA	0.092	2.790	0.005
	DV_SR	0.136	4.122	0.000
MV_FQ	DV_CF	0.623	21.005	0.000
	DV_PA	0.638	21.349	0.000
	DV_SR	0.630	20.700	0.000

Source: By Authors calculation using IBM SPSS Statistics 27.0

Table 8. Indirect Effect

→ via MV_FQ		***β***	***t-value***	***p-value***
IV_CE	DV_CF	0.078	2.692	0.007
	DV_PA	0.080	2.695	0.007
	DV_SR	0.079	2.676	0.007
IV_DI	DV_CF	0.035	1.125	0.261
	DV_PA	0.036	1.116	0.264
	DV_SR	0.036	1.123	0.261
IV_FT	DV_CF	0.054	1.756	0.079
	DV_PA	0.055	1.761	0.078
	DV_SR	0.054	1.763	0.078

Source: By Authors calculation using IBM SPSS Statistics 27.0

Table 9. Predictive Power and Model Fit

	R Square	***R Square Adjusted***	***Q^2***	***SRMR***	***NFI***
DV_CF	0.526	0.517	0.404	0.047	0.845
DV_PA	0.550	0.541	0.410		
DV_SR	0.564	0.555	0.445		
MV_FQ	0.029	0.021	0.016		

Source: By Authors calculation using IBM SPSS Statistics 27.0

Table 10. Results of Moderation Analysis

DV	***IV***	□ ***(Interaction)***	***p***	***R^2***
DV_CF	IV_CE	3.69E-05	4.79E-01	4.12E-02
	IV_DI	-3.92E-05	5.04E-01	5.25E-02
	IV_FP	7.97E-05	1.91E-01	3.17E-02
	IV_FT	-1.63E-05	7.79E-01	3.71E-02
	IV_PI	8.34E-05	1.30E-01	3.56E-02
	IV_RS	7.78E-06	9.02E-01	3.32E-02
	MV_FQ	-5.18E-05	2.84E-01	2.85E-01
DV_PA	IV_CE	1.90E-05	7.10E-01	4.35E-02
	IV_DI	9.68E-06	8.68E-01	3.31E-02
	IV_FP	-3.55E-05	5.53E-01	3.45E-02
	IV_FT	-6.79E-05	2.35E-01	4.64E-02
	IV_PI	3.78E-05	4.85E-01	3.93E-02
	IV_RS	2.34E-06	9.70E-01	3.77E-02
	MV_FQ	1.14E-05	8.05E-01	3.22E-01
DV_SR	IV_CE	-5.50E-05	2.97E-01	3.23E-02
	IV_DI	-4.23E-05	4.73E-01	5.46E-02
	IV_FP	-4.19E-05	4.95E-01	2.99E-02
	IV_FT	4.50E-05	4.48E-01	1.96E-02
	IV_PI	3.49E-05	5.26E-01	4.82E-02
	IV_RS	3.37E-05	5.97E-01	3.74E-02
	MV_FQ	-2.91E-05	5.33E-01	3.40E-01

Source: By Authors calculation using IBM SPSS Statistics 27.0

Table 11. Structural Path Coefficient for Moderated Mediation Model

DV	***IV***	□ ***(IV)***	□ ***(MV)***	□ ***(Interation)***
DV_CF	IV_CE	1.11E-01	5.18E-01	-5.91E-05
	IV_DI	1.53E-01	5.18E-01	-4.48E-05
	IV_FP	8.44E-02	5.25E-01	-5.61E-05
	IV_FT	7.95E-02	5.17E-01	-4.53E-05
	IV_PI	8.99E-02	5.24E-01	-6.09E-05
	IV_RS	1.01E-01	5.22E-01	-5.60E-05
	MV_FQ	5.26E-01	5.26E-01	-5.18E-05
DV_PA	IV_CE	1.01E-01	5.39E-01	4.79E-06
	IV_DI	7.36E-02	5.42E-01	1.48E-05
	IV_FP	9.34E-02	5.44E-01	6.67E-06
	IV_FT	8.69E-02	5.36E-01	1.86E-05
	IV_PI	1.03E-01	5.43E-01	1.01E-06
	IV_RS	9.88E-02	5.41E-01	7.37E-06
	MV_FQ	5.46E-01	5.46E-01	1.14E-05
DV_SR	IV_CE	8.22E-02	5.80E-01	-3.46E-05
	IV_DI	1.69E-01	5.76E-01	-2.15E-05
	IV_FP	1.12E-01	5.84E-01	-3.48E-05
	IV_FT	-4.99E-03	5.86E-01	-2.96E-05
	IV_PI	1.65E-01	5.82E-01	-4.59E-05
	IV_RS	1.29E-01	5.80E-01	-3.45E-05
	MV_FQ	5.85E-01	5.85E-01	-2.91E-05

Source: By Authors calculation using IBM SPSS Statistics 27.0

Table 12. Bootstrap Results for Indirect Effects in the Moderated Mediation Model

DV	*IV*	*Indirect Mean*	*CI Lower*	*CI Upper*
DV_CF	IV_CE	3.82E-02	-1.19E-02	8.55E-02
	IV_DI	2.69E-02	-2.83E-02	8.34E-02
	IV_FP	1.22E-02	-4.44E-02	7.14E-02
	IV_FT	5.95E-02	6.07E-03	1.12E-01
	IV_PI	1.52E-02	-4.38E-02	7.21E-02
	IV_RS	3.23E-02	-2.36E-02	9.06E-02
	MV_FQ	5.28E-01	4.40E-01	6.15E-01
DV_PA	IV_CE	3.99E-02	-1.20E-02	9.17E-02
	IV_DI	2.75E-02	-2.60E-02	8.49E-02
	IV_FP	1.44E-02	-4.50E-02	7.45E-02
	IV_FT	6.28E-02	1.06E-02	1.17E-01
	IV_PI	1.50E-02	-4.15E-02	7.38E-02
	IV_RS	3.56E-02	-2.02E-02	9.15E-02
	MV_FQ	5.42E-01	4.60E-01	6.36E-01
DV_SR	IV_CE	4.33E-02	-7.02E-03	9.78E-02
	IV_DI	2.94E-02	-3.00E-02	8.59E-02
	IV_FP	1.49E-02	-4.92E-02	8.37E-02
	IV_FT	6.92E-02	1.32E-02	1.25E-01
	IV_PI	1.52E-02	-4.81E-02	8.08E-02
	IV_RS	3.73E-02	-2.35E-02	1.04E-01
	MV_FQ	5.85E-01	4.98E-01	6.74E-01

Source: By Authors calculation using IBM SPSS Statistics 27.0

Contribution of Individual Authors to the Creation of a Scientific Article (Ghostwriting Policy)

Trieu Thi Thu: Conceptualization; Methodology; Formal analysis; Project administration; Writing – original draft; Nguyen Anh Tuan: Investigation; Data curation; Validation; Writing – review & editing; Hoang Thi Lan: Methodology; Formal analysis; Visualization; Validation; Writing – review & editing; Hoang Thi Minh Hue: Supervision; Project administration; Academic review; Writing – review & editing. All authors have read and approved the final version of the manuscript.

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The datasets generated and analyzed during the current study are maintained by the corresponding author. Because the data were collected under confidentiality agreements with the participants, they are not publicly available. Anonymized data may be made available from the corresponding author upon reasonable request for research purposes.

Conflict of Interest

The authors declare that they have no known financial interests, personal relationships, or competing interests that could have influenced the work reported in this paper.