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## **Review of the Doctoral Dissertation**

**by Ms. Mengyu Cao, entitled “The role of the education quality assurance system in shaping relationships among university education quality, academic citizenship behaviour and academic performance”, written under the supervision of Dr hab. Rafał Haffer, Prof. UMK, and Prof. Oivind Strand, Faculty of Economic Sciences and Management, Nicolaus Copernicus University in Toruń.**

### **1. Formal and Legal Basis for Preparing the Review**

The formal basis for preparing this review is a letter from the Chair of the Scientific Council for the Discipline of Management and Quality Sciences at Nicolaus Copernicus University in Toruń, Dr hab. Agata Sudońska, Prof. UMK, dated 22 July 2025, informing me that the Council has entrusted me with the role of reviewer of the doctoral dissertation of Ms. Mengyu Cao.

The legal basis for the proceedings is Article 187 of the Act—Law on Higher Education and Science of 20 July 2018 (Dz.U. 2018, Nr 65, poz. 1668).

Taking into account the statutory requirements applicable to doctoral theses, the assessment of Ms. Mengyu Cao's dissertation considered the following criteria:

- for assessing the Doctoral Candidate's general theoretical knowledge: the significance of the issues addressed in the dissertation; the quality of the literature review (breadth, detail, currency, systematisation, critique/discussion) and the conclusions drawn from it; the accuracy in identifying research gaps and problems; and the construction of the thesis structure;
- for assessing the Doctoral Candidate's ability to conduct independent scientific work: the correctness in formulating objectives and the research problem; the research procedures and methods; the clarity of reporting research results; and the quality of the research toolkit;
- for assessing the originality of the solution to the scientific problem and the application of the Doctoral Candidate's own research results: the uniqueness of the author's way of solving the research problem; and the usefulness of the conclusions and recommendations for academics and practitioners arising from the presented research.

## 2. Assessment of General Knowledge

The concept of the Candidate's doctoral dissertation addresses an issue important to both theory and practice—namely, the quality of education in higher education and its linkages with students' loyalty, their academic citizenship behaviour, and academic performance in different cultural contexts. This subject is of great importance because contemporary universities operate in conditions of increasing competition, internationalisation, and digital transformation. Education quality is no longer merely a service category; it directly affects graduates' readiness for the labour market, the social development and innovativeness of economies, and public trust in academic institutions.

Particularly significant is the positioning of the study in two distinct cultural contexts—Poland and Norway—which makes it possible to capture both the common elements arising from the Bologna Process and the differences resulting from divergent cultural patterns.

The topic undertaken in the dissertation has therefore been aptly selected, is important and current, and its choice demonstrates the Candidate's good awareness of contemporary issues in management and quality sciences. It is worth emphasising the originality of the research problem adopted—the Candidate identified a lack of unequivocal approaches examining the linkages between education quality and students' academic citizenship behaviour (ACB), as well as a shortage of comparative cross-cultural research. The author of the dissertation sought to explain these relationships by drawing on classical concepts (including expectancy and dissonance theory and social exchange theory) and Hofstede's cultural dimensions, which together formed an original and innovative research model.

The Candidate correctly identifies the so-called “quality paradox”—a situation in which Quality Assurance Systems (QAS) focus mainly on managerial and control dimensions rather than genuinely influencing teaching practice. In response, the Candidate indicates the need to redefine the role of the student—from a passive recipient to an active participant in the education process. This shift in perspective is both the theoretical foundation and the point of departure for further analyses.

An important theoretical asset of the dissertation is the identification of research gaps. The Candidate notes that many issues remain unresolved in prior research on education quality in higher education. In particular, the direct relationship between university education quality (UEQ) and academic citizenship behaviour (ACB) has been scarcely analysed, and the role of student loyalty (SL) as a mediator in this relationship has been insufficiently examined. The literature also lacks in-depth analyses of the significance of ACB for shaping academic performance (AP), which leaves this relationship unclear. Previous studies have primarily focused on service-oriented approaches to quality and student satisfaction, while only to a limited extent attempting to capture these relationships from a cross-cultural perspective. There is a particular shortage of studies addressing the contexts of Central and Eastern Europe. Identifying these gaps and building a research model

with hypotheses H1–H11 on this basis demonstrates the Candidate's ability to critically analyse the literature and translate it into a research design.

The literature review covers both classical conceptions of quality (Deming, Juran, Garvin, Crosby) and the most recent empirical and theoretical studies (from 2022–2025). A consistent systematisation of the issues is noticeable—from the presentation of general approaches, through the development of quality concepts, to their application in education and their operationalisation into specific research constructs. The bibliography of the dissertation is extensive and well-selected, comprising 293 items. This attests to the wide scope of the search and the Candidate's ability to use diverse sources in building the theoretical foundations of the study. Among the sources used are 28 items from the last five years, which, to some extent, provides a link to current scholarly debates. It may be noted, however, that a higher share of the most recent publications would further increase the value of the analysis, strengthening its currency and even more clearly embedding the study in contemporary theoretical and empirical discussions.

The selection of sources meets the standards of a doctoral dissertation in management and quality sciences. No major formal shortcomings were identified, although in a few places greater consistency in the use of abbreviations (UEQ, SL, ACB, AP) would be desirable, as well as clarification of certain references—for example, footnotes point to Hofstede 2001 and Hofstede 2001a, while the reference list includes Hofstede 2001a and Hofstede 2001b; likewise, the text cites Kline 1988 and Kline 2011, whereas the bibliography lists only Kline 1988.

The structure of the dissertation is clear and consists of theoretical, methodological, and empirical parts, which correspond well with one another. The general part of the literature review is primarily systematising in nature—the Candidate presents in an orderly way successive stages in the development of approaches to quality in higher education, from traditional forms of inspection through Total Quality Management concepts and ISO standards to contemporary institutional and supranational solutions, such as the European Standards and Guidelines (ESG) and ENQA. The frameworks for evaluating quality and the role of external accreditations (AACSB, EQUIS, ABET) are also discussed. As a result, the reader is provided with a coherent and logical introduction to the subject. The Candidate places particular emphasis on the student perspective—as a consumer of educational services but also as a member of the academic community whose voice makes it possible to capture nuances often overlooked by formal quality-measurement mechanisms. This shift from a purely service-oriented to a participatory and civic perspective is an important theoretical contribution of the dissertation.

I assess positively that the Candidate has successfully combined the descriptive dimension of literature systematisation with a critical reflection on its limitations. The author organises knowledge and builds a solid theoretical foundation while weaving elements of critical reflection into the narrative. The Candidate points to existing quality paradoxes and the limitations of contemporary systems—excessive formalisation and bureaucratisation of procedures, the risk of focusing on documentation at the expense of genuine improvements in teaching quality, and the

insufficient use of students' potential as active participants in the process. This shows the Candidate's research maturity and the ability to use the literature creatively.

The detailed literature review leading to the derivation of research hypotheses has been prepared in a systematic and logical manner. The Candidate consistently presents the successive constructs—education quality (UEQ), student loyalty (SL), academic citizenship behaviour (ACB), and academic performance (AP)—indicating their theoretical underpinnings (social exchange theory, cognitive consistency theory, Hofstede's cultural dimensions) and previous empirical research supporting the analysed relationships. The relations among the variables are presented clearly, and their interpretation is grounded in a rich body of literature.

At the same time, it can be observed that at times the review takes the form of a dense compilation of empirical studies, with less space devoted to a broader theoretical discussion of the limitations of the adopted concepts. For example, the dissertation adopts Hofstede's cultural dimensions as the basis for cross-cultural analysis, which is justified by their wide application in the literature. The choice of Hofstede as the foundation for cultural analysis should be regarded as justified and consistent with the adopted research model. At the same time, it is worth noting that other approaches, such as the GLOBE (Global Leadership and Organizational Behavior Effectiveness) framework, could enrich the analytical perspective with additional dimensions, e.g., performance orientation, human orientation, or students' individual values. These approaches allow not only country comparisons but also capturing intra-population variation, which could provide a valuable extension of the proposed model. This is not a shortcoming but rather a potential for further research, confirming that the dissertation opens a field for deeper reflection on the role of culture in quality assurance systems in higher education. Does the Candidate see the possibility and desirability of using other cultural models in the future, and in what way could they enrich the findings?

Student loyalty was measured using validated scales covering valuable indicators (such as declarations of continuing studies at the same university or recommending it to others), although these remain somewhat external to the student's everyday experience. In the literature, however, satisfaction with education—understood as the current satisfaction with the quality of teaching, relationships with instructors, or study conditions—is often treated as a direct predictor of loyalty. This observation prompts the question: would including satisfaction in the model allow better capture of the mechanisms shaping loyalty and explain cross-cultural differences in the analysed relationships? How does the Candidate assess the merits of such a solution?

It is also worth noting that the Candidate has managed to build a coherent structure for the entire dissertation. The chapters follow a logical sequence: Chapter 1 lays down the theoretical foundations and shows the complexity of the notion of quality; Chapter 2 develops the theoretical framework and derives the research hypotheses by analysing relationships between UEQ, SL, ACB, and AP, and it also identifies research gaps. Chapter 3 describes the mixed-methods methodology employed, discusses in detail the sampling, data collection procedures, measurement instruments, qualitative interviews, and quantitative analysis using PLS-SEM. Chapter 4 presents

the results of the quantitative and qualitative studies, analyzes the moderating effects of national culture, presents the case-study results for NCU and NTNU, and then conducts a comparative analysis; it ends with an integrated discussion, theoretical and practical conclusions, and a statement of limitations and directions for further research. This arrangement is clear, logical, and in line with standards in the discipline of management and quality sciences. Importantly, the proportions between the theoretical and the empirical sections are balanced—both parts are extensive, but neither unduly dominates. The reader thus perceives both a broad theoretical context and the empirical justification for the results.

To sum up, the first of the conditions listed in the introduction is fulfilled: the dissertation demonstrates a high general level of the Candidate's theoretical knowledge. The Candidate has shown familiarity with classical and contemporary concepts, the ability to review them critically, the accurate identification of research gaps, and the logical linking of theory with an original empirical model. It can be stated that the dissertation reflects the current state of knowledge on the subject and provides a solid theoretical background appropriate for a person seeking the degree of doctor in the discipline of management and quality sciences.

### **3. Assessment of the Candidate's Ability to Conduct Independent Scientific Work**

The aim of the dissertation is defined as the identification and analysis of the impact of the design and practices of university quality assurance systems (QAS) on university education quality (UEQ), student loyalty (SL), academic citizenship behaviour (ACB), and academic performance (AP), as well as the examination of the mutual relationships among these constructs in different cultural contexts—Polish and Norwegian. This aim should be assessed as ambitious and demanding, as it integrates an institutional perspective with a psychosocial approach and assumes capturing the role of cultural moderators in shaping the analysed relationships.

In the introduction, the Candidate clearly justifies the selection of the two universities—NCU and NTNU—pointing to their shared institutional foundation within the Bologna Process and to their contrasting cultural profiles according to Hofstede's theory. This justification shows that the research aim was not chosen arbitrarily but was logically linked to the research context and grounded in the literature.

The main objective is consistently broken down into six research questions (qualitative component) and eleven research hypotheses (quantitative component). The coherence of this arrangement is clear—questions RQ1–RQ6 concern the functioning of QAS in university practice (procedures, metrics, the role of students, similarities and differences), while hypotheses H1–H11 are based on social exchange theory, cognitive consistency theory, and Hofstede's cultural dimensions, examining the UEQ–SL–ACB–AP relationships and cultural moderations. The whole forms a logical sequence and addresses the research problem well. For complete transparency, it would, however, be advisable to add in Chapter 4 brief one- or two-sentence summaries directly answering

each RQ and a table summarising the status of all hypotheses, which would allow the reader to quickly assess the full achievement of the objectives.

The methodology presented in the doctoral dissertation deserves a positive assessment, as it is based on solid theoretical foundations and built on a broad literature review. The Candidate consistently applied a mixed-methods approach, combining quantitative and qualitative methods, which made it possible to capture the complexity of the phenomenon studied. The application of data triangulation and reference to classical methodological works (including Yin; Braun and Clarke; Hair) increases the credibility of the results and situates the study within recognised scholarly practice.

The use of a mixed-methods case study approach is fully adequate to the research problem undertaken. Already in the introduction, the Candidate emphasises that such a combination of methods makes it possible to capture both the quantitative relationships between variables and the qualitative determinants of how quality systems function. The conscious selection of respondent groups—students, teaching staff, and administration—also draws attention, as it enables analysis from the perspective of all key stakeholders. Placing this reflection at the outset of the dissertation demonstrates substantial methodological awareness and holistic planning of the research process. The selection of the two universities—NCU in Poland and NTNU in Norway—was justified in both institutional terms (mature QAS within the Bologna Process) and cultural terms. In this way, the Candidate ensured structural comparability while simultaneously capturing cultural differences.

In the quantitative component, data were collected from 242 students (165 in Poland, 77 in Norway) using validated measurement scales for all main constructs. The analysis was carried out using structural equation modelling with PLS-SEM (WarpPLS 8.0), a solution appropriate for moderate sample sizes and complex models. Reporting covers both measurement models (validity, reliability, convergence, discriminant validity) and structural models, as well as the analysis of indirect and moderating effects. This attests to a strong command of statistical tools.

In the qualitative component, 15 interviews were conducted (6 at NCU, 9 at NTNU) with representatives of administration, teaching staff, and students. This selection shows that the Candidate approached the quality system from a stakeholder perspective, incorporating multiple viewpoints. Thematic analysis and cross-case synthesis made it possible to capture similarities and differences in how QAS functions at the two universities.

Particular attention should be paid to the careful preparation of the research instruments. The use of previously validated scales, the questionnaire translation process, and pilot testing indicate great care for measurement accuracy. Likewise, the decision to apply PLS-SEM should be assessed positively; this method is particularly suitable for analysing complex models with mediating and moderating effects when sample sizes are moderate. The detailed description of analytical procedures evidences the Candidate's high level of methodological awareness.

I assess the Candidate's research craftsmanship positively. It is clearly visible that the Candidate was able to plan and carry out a complex research process and appropriately select methods suited to the questions and hypotheses. A strong point is the integration of quantitative and qualitative data. The presentation of results is clear, grounded in tables, indices, and quotations, and the discussion is logically linked to the literature.

A few aspects could be expanded to provide a fuller picture of the research. In comparative studies, it is good practice to aim for greater balance between samples to avoid situations in which one national context is overly represented. The lack of such balance creates a risk that observed cross-country differences result more from sample disproportions than from genuine cultural determinants. The imbalance here—165 respondents from Poland versus 77 from Norway—naturally limits the statistical power of analyses in the Norwegian part. Although the Candidate rightly indicates that the samples meet the minimum PLS-SEM requirements, this difference may affect comparability and should be discussed more broadly among the study's limitations. Similarly, in the qualitative component, student interviews constitute a relatively small fraction (two interviews in Poland and three in Norway). This limitation is rightly noted in the Limitations chapter, though for clarity it should also be signposted in the presentation of results.

It is also worth noting that the operationalisation of academic performance (AP) was reduced to a single GPA indicator. This is a practical and functional solution, yet also relatively simplified. Measuring academic performance based on a single question about grade average may reduce measurement validity and lead to over-generalisation. To strengthen credibility, future work should plan to triangulate this indicator with administrative data or indices of student engagement.

For example, the GPA indicator could be complemented with measures of learning engagement and self-regulation (planning, motivation), as well as with indicators of soft skills and employability readiness, which would make it possible to capture educational outcomes and their practical value more comprehensively. Did the Candidate consider such an extension of the measurement, and how does she assess its usefulness in future studies?

The Candidate examines the influence of Hofstede's cultural dimensions (including power distance, collectivism, and masculinity) on the analysed constructs, using the Yoo, Donthu, & Lenartowicz (2011) scale, which adapts Hofstede's cultural dimensions for measurement at the individual level. This solution is often used in contemporary cross-cultural research; however, the literature emphasises that Hofstede's original concept was developed for national-level analyses, and its application to individuals requires detailed justification. Therefore, in interpreting the results, it is important to clearly define the boundaries of this approach to avoid the risk of oversimplifying conclusions about the "influence of culture."

Please clarify why the Candidate decided to apply this adaptation and what interpretive limits she notices for conclusions based on individual-level measurements of cultural dimensions.

It is commendable that the dissertation signals the risk of common method variance (CMV). To increase transparency, it would be helpful to specify which procedures or statistical tests were used

to mitigate it. Additionally, given that the Candidate was a student at one of the universities analysed, it is worth reflecting on how this situation could have affected her research perspective and interpretation of results. What measures did the Candidate take or consider to limit the possibility of unintentional bias?

The carefully prepared comparative section also significantly enhances the scientific value of the dissertation. The Candidate juxtaposes the experiences of two different contexts—Polish and Norwegian—indicating both similarities resulting from the shared Bologna framework and differences conditioned by culture and institutions. The analysis clearly shows that the Candidate does not stop at a simple description but strives to interpret the observed phenomena in the light of the theories cited. On the other hand, in the case-study section, there are repetitions of the same themes—for example, the lack of transparency of the system in Poland or the participatory character of solutions in Norway recur several times in a similar form. Consolidating these fragments into a single strong statement would avoid the impression of repetition and would strengthen the clarity of the message.

I assess the research process positively—it is correct, coherent, and adequate to the adopted aims and research problem. The Candidate has shown that she can independently translate theoretical gaps into hypotheses and research questions, choose appropriate methods, collect and analyse data, and then present and interpret the results clearly.

Of particular note is the methodological rigour of the quantitative analyses. The Candidate consistently carries out successive stages of measurement and structural model analysis, verifies the validity and reliability of research tools, and applies appropriate statistical criteria (including model-fit tests). Thanks to this, the quantitative results presented are credible, well-documented, and meet the requirements of empirical research in management and education.

In conclusion, the doctoral dissertation fully confirms that the Candidate possesses the ability to conduct scientific research independently and at a high level. The suggested additions are of a fine-tuning nature and do not diminish the cognitive value of the dissertation. Overall, the work testifies to the Candidate's scientific maturity and confirms that the second of the stated conditions for obtaining the doctoral degree in the discipline of management and quality sciences has been met.

#### **4. Assessment of the Originality of the Scientific Problem's Solution and the Application of the Candidate's Own Research Results**

The doctoral dissertation makes a significant and original contribution to research on the quality of education in higher education. The originality of the approach lies in the creation and empirical testing of an original research model that combines four key constructs—University Education Quality (UEQ), Student Loyalty (SL), Academic Citizenship Behaviour (ACB), and Academic Performance (AP)—and examines both their direct relationships and mediating and moderating

roles. Of particular value is the inclusion of cultural factors as moderators, which makes it possible to understand why similar mechanisms operate differently in different contexts.

This approach deserves a positive assessment. In the literature, studies on education quality usually focus either on service dimensions (e.g., student satisfaction, university reputation) or on academic outcomes (e.g., GPA), and only rarely integrate student loyalty and their citizenship behaviour within a single model. The Candidate treats the student in a novel way—not only as a client in a service relationship, but also as a member of the academic community whose loyalty and civic engagement can co-shape the quality and effectiveness of the system. Including ACB in the research model and treating it on a par with student loyalty is a particularly original solution.

The comparative perspective also merits recognition. Selecting Poland and Norway as examples of universities operating within the same Bologna framework but in different cultural contexts (low vs. high power distance, differences in femininity/masculinity, individualism/collectivism) made it possible to capture the moderating effects of culture, which to date have been analysed to a limited extent. In this way, the dissertation not only confirms universal relationships (e.g., positive UEQ–SL and SL–ACB links) but also shows that others (e.g., UEQ–AP, ACB–AP) are strongly dependent on cultural context.

The Candidate's empirical findings are accurate, detailed, and up-to-date. Confirmation of most hypotheses in both countries indicates the consistency of the model, while partial confirmations and rejections (e.g., no significant moderations in H8, non-significant mediations in H7) attest to reliability in reporting. It is particularly valuable that the Candidate did not avoid unexpected results but instead proposed interpretations—for example, the small number of student interviews and the different mode of operation of QAS in Norway as explanations of the differences. This approach demonstrates research maturity and scholarly integrity.

The practical value of the dissertation is very high. The recommendations are specific, data-driven, and tailored to the context of each university. In the case of Poland (NCU), particular emphasis is placed on the need for greater transparency of feedback systems, more effective inclusion of students in QAS structures, and limiting excessive formalisation of processes. For Norway (NTNU), the recommendations focus on better documentation and systematisation of activities and further strengthening of dialogue with students within the already existing participatory mechanisms. All conclusions are detailed and have a clearly applicable character—they can be used both in university management practice and in shaping quality policy in higher education.

These recommendations could gain even greater practical traction if they were supplemented with sample implementation tools. In this way, they would have not only the character of strategic guidance but also of practical tips that universities could implement almost directly.

The proposed research model appears to have transferability potential—even though the analysis was conducted in Poland and Norway, its construction and operationalisation could also be applied in other countries and types of universities. Does the Candidate share this view and consider the

model to be universal, or does she see it rather as a tool limited to the specificities of the contexts studied?

The dissertation also has a timeless and forward-looking dimension. The Candidate rightly observes that the development of quality systems must go hand in hand with digitalisation and the use of artificial intelligence, as well as with the need to create flexible, culturally adapted solutions. This emphasises the awareness that quality assurance systems cannot be static but must evolve together with technology and with students' changing expectations.

To sum up, the dissertation is original, innovative, and has great cognitive and applicative value. The Candidate has created an original research model that brings together, in a novel way, the dimensions of education quality, student loyalty, students' civic behaviour, and academic performance, and additionally includes cultural moderations. The research findings are current, detailed, and consistent with the literature, and the practical recommendations are relevant and useful for both universities and policymakers. Also noteworthy is the Candidate's high methodological awareness, evident in the careful and balanced interpretive language and the attention to clear data presentation.

The arguments presented make it possible to state unequivocally that the doctoral dissertation constitutes an original solution to a scientific problem and an original application of research results in academic and social practice, adequate to the requirements for doctoral theses in the discipline of management and quality sciences. Thus, the third of the required criteria has been met.

## **5. Conclusion of the Review**

In summary, having conducted the review of Ms. Mengyu Cao's doctoral dissertation, it should be stated that the thesis constitutes an original and valuable solution to a scientific problem in the field of management and quality sciences. The Candidate has fully demonstrated the ability to conduct independent scientific research, combining solid theoretical foundations with a carefully designed and executed empirical part. The obtained results have both cognitive and applicative character—they deepen knowledge about quality assurance systems in higher education from a cross-cultural perspective and simultaneously provide practical recommendations that can be used by universities and institutions responsible for quality policy.

An analysis of the dissertation's content shows that the Candidate possesses general theoretical knowledge, methodological competencies, and research craftsmanship at the level required of individuals seeking the doctoral degree in the discipline of management and quality sciences.

Taking into account the adopted assessment criteria, I state unequivocally that the reviewed doctoral dissertation by Ms. Mengyu Cao, entitled "The role of the education quality assurance system in shaping relationships among university education quality, academic citizenship behaviour and academic performance", written under the academic supervision of Dr hab. Rafał Haffer, Prof. UMK, and Prof. Øivind Strand, at the Faculty of Economic Sciences and

Management, Nicolaus Copernicus University in Toruń, meet the conditions specified in Article 187 of the Act—Law on Higher Education and Science of 20 July 2018 (Journal of Laws 2018, No. 65, item 1668). In view of the above, I recommend that the dissertation by Ms. Mengyu Cao be accepted by the Scientific Council for the Discipline of Management and Quality Sciences at Nicolaus Copernicus University in Toruń and that she be admitted to the public defence.

### **Podsumowanie**

**Biorąc pod uwagę przyjęte kryteria oceny, jednoznacznie stwierdzam, że recenzowana rozprawa doktorska mgr Mengyu Cao pt. „The role of the education quality assurance system in shaping relationships among university education quality, academic citizenship behaviour and academic performance” napisana pod kierunkiem naukowym dr hab. Rafała Haffera, prof. UMK oraz Prof. Oivinda Strand, na Wydziale Nauk Ekonomicznych i Zarządzania Uniwersytetu Mikołaja Kopernika w Toruniu, spełnia warunki określone w art. 187 ustawy *Prawo o szkolnictwie wyższym i nauce* z dnia 20 lipca 2018 r. (Dz.U. 2018, Nr 65, poz. 1668). W związku z powyższym rekomenduję przyjęcie rozprawy mgr Mengyu Cao przez Radę Dyscypliny Naukowej Nauki o Zarządzaniu i Jakości Uniwersytetu Mikołaja Kopernika w Toruniu oraz dopuszczenie jej do publicznej obrony.**

A handwritten signature in blue ink, appearing to read "Małgorzata Baser".