



A Systematic Review of Determinants of Participant Satisfaction and Loyalty in Professional Certification Services

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Abstract

Purpose: This study synthesizes evidence on how service quality, assessor or instructor competence, facilities, and digitalization shape participant satisfaction and loyalty in service institutions, with particular relevance to professional certification.

Research Methodology: A bounded systematic literature review was conducted on ten empirical studies published between 2018 and 2026. The studies were coded by service context, focal variables, outcome relationships, and mediation findings, and were synthesized through directional vote counting and thematic comparison.

Results: Service quality showed the broadest and most consistent positive association with satisfaction. Competence was strongly related to satisfaction in education and training settings, facilities generally supported satisfaction, and digitalization improved access, speed, and transparency. Satisfaction frequently connected service factors with loyalty, although mediation was not universal across behavioral outcomes.

Conclusions: The evidence supports an integrated pathway in which operational service factors generate satisfaction and trust, which in turn strengthen repeat use and recommendation. Certification institutions should combine reliable service processes, calibrated assessors, adequate testing facilities, and integrated digital systems rather than treating these factors as isolated improvements.

Limitations: The corpus is limited to ten studies, most of which come from adjacent service settings rather than professional certification, and their heterogeneity prevents meta analysis.

Contributions: The review offers a certification focused framework linking four operational antecedents to satisfaction and loyalty, together with practical implications and a research agenda.

Keywords: Assessor Competence, Digitalization, Participant Loyalty, Service Quality, Systematic Literature Review

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1. Introduction

Professional certification institutions operate at the intersection of education, labor market assurance, and public trust. Their participants do not merely purchase a routine service. They submit evidence of competence, interact with authorized assessors, use testing facilities and information systems, and expect an objective decision that may affect their employment or career mobility. Satisfaction therefore reflects both the quality of the service encounter and confidence in the credibility, fairness, accessibility, and efficiency of the certification process. Because certification decisions rest on expert

judgment, participants are especially sensitive to whether assessments are perceived as fair and consistent ([Oudkerk, Govaerts, Jaarsma, & Driessen, 2018](#)). Loyalty is equally important, because repeat certification, progression to higher schemes, and recommendations to colleagues support institutional sustainability and reinforce the reputation of the certification system.

The service management literature offers several explanations for these outcomes. The SERVQUAL model identifies reliability, responsiveness, assurance, empathy, and tangibles as the central dimensions of perceived service quality ([Parasuraman, Zeithaml, & Berry, 1988](#)), and later research has refined these dimensions for electronic services and education ([Blut, 2016](#); [Teeroovengadum, Nunkoo, Grönroos, Kamalanabhan, & Seebaluck, 2019](#)). Customer loyalty theory views repeat use, cross purchasing, recommendation, and resistance to competitors as behavioral expressions of a durable relationship ([Griffin, 2005](#)). Marketing theory further positions satisfaction as an evaluative response produced when actual performance is compared with prior expectations ([Kotler & Keller, 2022](#)). Across industries, satisfaction has been shown to be strongly linked to loyalty and to the performance of organizations ([Otto, Szymanski, & Varadarajan, 2020](#)). Research on customer experience adds that satisfaction is formed across a sequence of touchpoints rather than in a single encounter ([Lemon & Verhoef, 2016](#)). In a professional certification setting, these perspectives imply that administrative service, assessor competence, facilities, and digital access may work together to create satisfaction and eventually loyalty.

Existing empirical research, however, is fragmented across online commerce, higher education, training institutions, automotive services, financial services, public administration, retailing, and public utilities. Service quality is often examined as a general antecedent of satisfaction, while competence is usually studied through teachers or lecturers rather than competency assessors ([Osman & Saputra, 2019](#)). Facilities are commonly assessed in hospitality or commercial services, and digitalization is frequently investigated in public administration ([Lindgren, Madsen, Hofmann, & Melin, 2019](#)). The growing use of digital platforms for registration, communication, and results has also made electronic service quality an increasingly important part of the participant experience ([Rita, Oliveira, & Farisa, 2019](#)). Studies also differ in whether satisfaction is treated as an outcome, a mediator, or a predictor of loyalty ([Fida, Ahmed, Al-Balushi, & Singh, 2020](#)). This diversity provides useful evidence but makes it difficult to identify which findings can be transferred to professional certification services.

The literature review of the master's thesis from which this article was derived assembled ten studies that are directly relevant to the proposed relationships among service quality, competence, facilities, digitalization, satisfaction, and loyalty. These studies show recurring positive patterns but also reveal differences in mediation, service context, and the role of technology. A structured synthesis of such evidence can clarify consistent patterns and gaps that are not visible in individual studies ([Snyder, 2019](#)). The present review addresses three questions. The first asks which service factors are most consistently associated with satisfaction and loyalty. The second asks how satisfaction functions within the relationship between service factors and loyalty. The third asks what conceptual and managerial implications can be transferred to professional certification institutions. The novelty of the review lies in combining four operational antecedents and two participant outcomes in one framework focused on certification.

2. Literature Review and Hypothesis/es Development

2.1 Service Quality

Service quality is commonly defined as the gap between what customers expect and what they perceive they receive. The SERVQUAL model operationalizes this gap through five dimensions, namely reliability, responsiveness, assurance, empathy, and tangibles ([Parasuraman et al., 1988](#)). The model has been adapted to many settings. In higher education, service quality has been shown to shape student satisfaction, institutional image, and loyalty ([Ali et al., 2016](#)), and specialized scales such as HESQUAL capture academic, administrative, and support dimensions that influence

satisfaction and loyalty ([Teeroovengadum et al., 2019](#)). Reviews of quality in higher education also emphasize that quality is multidimensional and depends on both teaching and administrative processes ([Prakash, 2018](#)).

In commercial settings, service quality consistently predicts satisfaction and loyalty in banking ([Fida et al., 2020](#), [Özkan et al., 2020](#), [Supriyanto et al., 2021](#)), retailing ([Slack et al., 2020](#)), airline services ([Hapsari et al., 2017](#)), after sales service ([Shokouhyar et al., 2020](#)), and home delivery services ([Uzir et al., 2021](#)). Evidence from several Asian countries shows that the effect of service quality on satisfaction and loyalty is robust across cultures ([Gong & Yi, 2018](#)). Research also indicates that combining standardized processes with personalized service can improve perceived quality and loyalty ([Kasiri et al., 2017](#)), which is relevant to certification institutions that must apply common standards while responding to individual participants.

2.2 Satisfaction and Loyalty

Satisfaction is an evaluative judgment that results from comparing performance with expectations ([Kotler & Keller, 2022](#)). Research on public services shows that expectations and satisfaction change over time and that satisfaction depends on how actual experience compares with prior beliefs about service performance ([Hjortskov, 2019](#)). A review of more than two decades of research confirms that customer satisfaction is associated with loyalty, word of mouth, and organizational performance, although the strength of these links varies across contexts ([Otto, Szymanski, & Varadarajan, 2020](#)).

Loyalty refers to a durable commitment that is expressed through repeat purchase, recommendation, and resistance to alternatives ([Griffin, 2005](#)). Satisfaction often mediates the relationship between service quality and loyalty, but other factors such as perceived value, corporate image, and reputation also play a role. In some settings, service quality affects loyalty both directly and through satisfaction ([Fida, Ahmed, Al-Balushi, & Singh, 2020](#); [Supriyanto, Wiyono, & Burhanuddin, 2021](#)), while in others certain quality dimensions influence disloyalty more strongly than loyalty ([Slack, Singh, & Sharma, 2020](#)). These findings suggest that satisfaction is important but may not be sufficient to explain loyalty in every service context.

2.3 Competence and Assessment Credibility

In knowledge intensive services, the competence of staff is a central determinant of perceived quality. In education, the competence and quality of teachers are among the strongest predictors of student satisfaction ([Osman, & Saputra, 2019](#); [Kanwar, & Sanjeeva, 2022](#)). In professional certification, the equivalent role is played by assessors, who interpret competency standards, collect and evaluate evidence, and communicate decisions. Research on competency based assessment shows that assessors do not simply add up evidence but interpret complex information and form holistic judgments ([Oudkerk, Govaerts, Jaarsma, & Driessen, 2018](#)), and that subjectivity in such judgments must be managed through clear standards and calibration ([Bacon, Holmes, & Palermo, 2017](#)). Perceived fairness is also crucial, because participants who experience assessment as unfair tend to lose trust in the assessor and the institution ([Rasooli, DeLuca, Rasegh, & Fathi, 2019](#)). These insights suggest that assessor competence influences satisfaction largely through its effect on the credibility of the certification decision.

2.4 Facilities and Digitalization

Facilities correspond to the tangibles dimension of service quality and include physical spaces, equipment, and supporting amenities. Their importance varies by context, and they often function as basic conditions whose absence causes dissatisfaction. Digitalization, in turn, has transformed how services are delivered. Electronic service quality depends on dimensions such as website design, fulfillment, security, and customer service ([Blut, 2016](#)), and it influences satisfaction, trust, and repurchase intention in online services ([Rita, Oliveira, & Farisa, 2019](#)). Customer experience is formed across a journey of touchpoints, which means that improvements in one stage can be undermined by problems in another ([Lemon & Verhoef, 2016](#)).

In the public sector, digitalization changes the encounter between citizens and institutions and requires attention to usability, inclusion, and trust ([Lindgren, Madsen, Hofmann, & Melin, 2019](#)). Digital transformation involves not only technology but also changes in processes and organizational culture ([Mergel, Edelmann, & Haug, 2019](#); [Vial, 2019](#)), and adaptive governance is needed to keep digital services stable and responsive ([Janssen & van der Voort, 2016](#)). The adoption of digital services depends on perceived usefulness and ease of use ([Chen & Aklikokou, 2020](#)) and on facilitating conditions that support users ([Venkatesh, Thong, & Xu, 2016](#)). For certification institutions, these findings imply that digital systems must be reliable, easy to use, and integrated across the entire participant journey.

2.5 Conceptual Framework

Drawing on the literature above, this review proposes that four operational factors, namely service quality, assessor or instructor competence, facilities, and digitalization, shape participant satisfaction and trust, which in turn influence loyalty in the form of repeat certification and recommendation. The relationship between satisfaction and loyalty may be conditioned by contextual factors such as price, perceived certificate value, employer requirements, and the availability of alternatives.

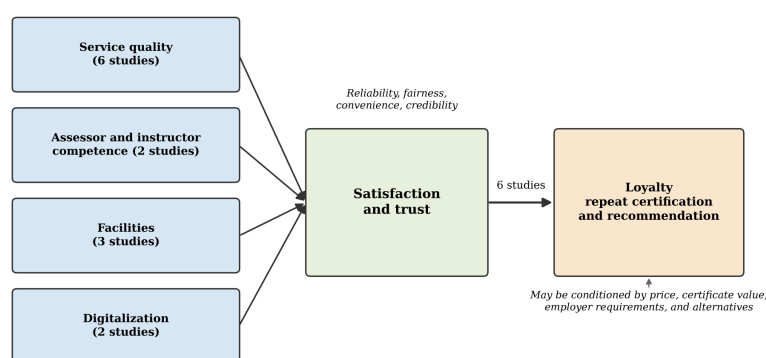


Figure 1. Integrated framework of service factors, satisfaction, and loyalty in professional certification services

Figure 1 presents the integrated framework that guides this review, together with the number of included studies that address each relationship. The four operational factors on the left are expected to create perceptions of reliability, fairness, convenience, and credibility, which build participant satisfaction and trust. Satisfaction and trust are then expected to strengthen loyalty, expressed as repeat certification and recommendation, while contextual factors such as price, certificate value, employer requirements, and alternatives may condition this final link. The figure shows that service quality and the satisfaction to loyalty link have the broadest evidence base, whereas competence and digitalization are supported by fewer studies.

2.6 Review Design and Scope

This article used a bounded systematic literature review. Systematic reviews follow explicit procedures for identifying, selecting, and synthesizing studies so that their conclusions are transparent and replicable ([Snyder, 2019](#); [Kraus, Breier, & Dasí-Rodríguez, 2020](#)). The review corpus was restricted to the ten empirical studies explicitly identified in the review of previous research in the master's thesis from which this article was derived. This approach transforms the thesis literature review into a journal article without reporting a database search or screening process that was not conducted. The study should therefore be interpreted as a systematic synthesis of a documented corpus rather than an exhaustive review of all publications available internationally, which is consistent with the view that review designs should be matched to their purpose and scope ([Paul & Criado, 2020](#)).

3. Research Methodology

3.1 Eligibility and Data Extraction

A study was retained when it met three criteria, following the recommendation that eligibility criteria in systematic reviews be stated explicitly and in advance ([Page, McKenzie, Bossuyt, Boutron, Hoffmann, Mulrow, Shamseer, Tetzlaff, Akl, Brennan, Chou, Glanville, Grimshaw, Hróbjartsson, Lalu, Li, Loder, Mayo-Wilson, & McDonald, 2021](#); [Xiao, & Watson, 2019](#)). It reported empirical findings, it examined at least one focal factor, namely service quality, human competence, facilities, or digitalization, and it connected that factor with satisfaction, loyalty, purchasing behavior, or another closely related service outcome. For each included study, information was extracted on the year of publication, the service context, the principal antecedent, the focal outcome, the direction of the relationship, and the presence or absence of mediation, using a structured extraction approach that supports transparent comparison across studies ([Paul, Lim, Hao, & Bresciani, 2021](#); [Siddaway, Wood, & Hedges, 2019](#)). Because the included studies were heterogeneous and their effect sizes were not directly comparable, the extracted information was prepared for a synthesis without meta analysis ([Campbell, McKenzie, Sowden, Katikireddi, Brennan, Ellis, Hartmann-Boyce, Ryan, Shepperd, Thomas, Welch, & Thomson, 2020](#)). The corpus covered publications from 2018 to 2026 and included commercial, educational, training, financial, public service, retail, and utility settings, which is consistent with the view that literature reviews in service research can draw on diverse contexts to advance conceptual understanding ([Lim, Kumar, & Ali, 2022](#)).

3.2 Synthesis Procedure

The studies were first organized in an evidence matrix. Directional vote counting was then used to identify whether findings supported a positive relationship, a nonsignificant relationship, or a mediation pathway. Because the studies used different samples, measures, sectors, and statistical procedures, their effect sizes were not sufficiently comparable for meta analysis. A thematic synthesis was therefore conducted across five themes, namely service quality, competence, facilities, digitalization, and the mechanism linking satisfaction and loyalty. The findings were then interpreted in light of the broader literature on service quality, satisfaction, loyalty, assessment, and digital services.

4. Results and Discussions

4.1 Characteristics of the Included Studies

The ten studies were distributed across a wide range of service environments. Six examined service quality, two focused on competence in education or training, three included facilities, and two directly examined the digitalization of administrative or public services. Satisfaction was the most common immediate outcome, while loyalty or purchasing behavior was typically positioned further downstream. Nine studies reported quantitative relationships, and the study of digital administration by [Ilham and Skd \(2025\)](#) provided qualitative evidence concerning speed and transparency.

Table 1. Included studies and principal evidence

Study	Context	Principal Evidence
Sumarlinah et al. (2022)	MSMEs and digital marketing	Service quality improved satisfaction, but the indirect influence on purchasing power through satisfaction was not significant
Urfany and Muthohar (2022)	Online commerce	Service quality improved satisfaction, and satisfaction mediated loyalty
Ito et al. (2023)	Maritime training	Teacher quality had a very strong relationship with satisfaction ($r=0.843$), and satisfaction supported loyalty

Study	Context	Principal Evidence
Mujahidin et al. (2018)	Higher education	Competence improved satisfaction, and satisfaction mediated loyalty
Jumawan and Prasetyo (2024)	Automotive service	Service quality, price, and facilities jointly improved satisfaction
Rohmah et al. (2024)	Financial services	Service quality and facilities improved satisfaction, and satisfaction supported loyalty
Saputra and Suryani (2026)	Local public service	Digitalization had a positive significant effect ($\beta=0.721$) and explained 46.8 percent of the variation in satisfaction
Ilham and Skd (2025)	District administration	Digitalization increased service speed and transparency, while infrastructure and user capability remained challenges
Novianti et al. (2018)	Retail	Service quality improved satisfaction, and satisfaction mediated loyalty
Yesi (2021)	Public utility	Service quality and facilities improved satisfaction, and satisfaction mediated loyalty

Table 1 lists the ten included studies together with their service context and principal evidence, synthesized from the review of previous research in the thesis. The table shows that the corpus covers commercial, educational, training, financial, and public service settings, but none of the studies was conducted in a professional certification institution. It also shows that nine of the ten studies found positive effects of service factors on satisfaction, while the only clearly nonsignificant result concerned the indirect path from service quality to purchasing power reported by [Sumarlinah et al. \(2022\)](#). This pattern provides the basis for the thematic synthesis that follows.

4.2 Service Quality as the Most Consistent Antecedent

Service quality showed the widest empirical coverage and the most consistent positive direction across online commerce, MSMEs, automotive services, financial services, retailing, and public utilities. Responsiveness, reliability, accurate information, interactions that build trust, and perceived fairness reduced the gap between expectations and actual experience ([Jumawan & Prasetyo, 2024](#), [Novianti et al., 2018](#), [Rohmah et al., 2024](#), [Sumarlinah et al., 2022](#), [Urfany & Muthohar, 2022](#), [Yesi, 2021](#)). This consistency mirrors international evidence that service quality is a robust predictor of satisfaction across sectors and cultures ([Gong & Yi, 2018](#), [Slack et al., 2020](#)). For professional certification, the finding implies that service quality is a necessary foundation rather than an optional enhancement. It may not explain the entire experience, however, because certification includes an expert judgment process that is more consequential than ordinary customer contact.

4.3 Competence as a Credibility Mechanism

The two studies focused on competence produced strong positive evidence. [Ito et al. \(2023\)](#) reported that teacher quality was strongly correlated with participant satisfaction in a maritime training institution, while [Mujahidin et al. \(2018\)](#) found that lecturer competence improved student satisfaction and indirectly supported loyalty. These results are consistent with broader research showing that the quality of teaching staff is among the strongest drivers of satisfaction in education ([Osman & Saputra, 2019](#), [Kanwar & Sanjeeva, 2022](#)). The transfer to certification services is direct but should be made carefully, because an assessor interprets standards, collects evidence, makes competency judgments, and communicates outcomes ([Oudkerk Pool et al., 2018](#)). When participants trust the assessor and perceive the assessment as fair, they are more likely to see the entire certification process as legitimate, even when the assessment is demanding or the outcome is not immediately favorable ([Rasooli et al., 2019](#)).

4.4 Facilities as Enabling and Hygiene Factors

Facilities were positively associated with satisfaction in automotive, financial service, and public utility settings ([Jumawan & Prasetyo, 2024](#), [Rohmah et al., 2024](#), [Yesi, 2021](#)). Cleanliness, comfortable waiting areas, complete equipment, accessibility, and supporting amenities reduce inconvenience and create a professional impression. This pattern suggests that facilities may operate as hygiene factors in certification institutions. Serious deficiencies can create dissatisfaction, but once minimum standards are met, additional investment may provide smaller gains than improvements in assessor competence or in the reliability of digital processes. The managerial objective should therefore be adequacy, accessibility, safety, and technological readiness rather than visual luxury.

4.5 Digitalization as an Access and Transparency Mechanism

Digitalization showed consistently favorable evidence. [Saputra and Suryani \(2026\)](#) found a substantial positive effect of the digitalization of local public services on community satisfaction, while [Ilham and Skd \(2025\)](#) concluded that administrative digitalization increased speed and transparency. Related evidence from electronic service settings also indicates that ease of use, information quality, and trust shape satisfaction ([Putri, & Marlina, 2021](#); [Rita, Oliveira, & Farisa, 2019](#)). For certification participants, an integrated digital journey may include online registration, electronic portfolio submission, automated completeness checks, schedule notifications, secure communication, status tracking, access to results, and certificate administration. The benefits of digitalization depend on system reliability, infrastructure, staff capability, and user friendly design ([Chen & Aklikokou, 2020](#)). A fragmented or unstable digital system can reproduce manual inefficiency and may even create new dissatisfaction, because experience is shaped across the entire journey rather than at a single touchpoint ([Lemon & Verhoef, 2016](#)).

4.6 Satisfaction and Loyalty Pathways

Satisfaction repeatedly appeared as the mechanism connecting service experience with loyalty. [Mujahidin et al. \(2018\)](#), [Novianti et al. \(2018\)](#), [Urfany and Muthohar \(2022\)](#), and [Yesi \(2021\)](#) reported mediation patterns, while [Ito et al. \(2023\)](#) and [Rohmah et al. \(2024\)](#) also linked satisfaction with loyalty. The pathway was not universal. [Sumarlinah et al. \(2022\)](#) found that satisfaction did not significantly transmit the effect of service quality to purchasing power, which indicates that satisfaction is influential but not sufficient for every downstream behavior. This is consistent with international studies showing that perceived value, image, and reputation also influence loyalty ([Özkan et al., 2020](#)). Price, necessity, institutional image, trust, switching barriers, perceived certificate value, and the availability of alternatives may therefore alter whether satisfaction becomes repeat participation.

Table 2. Cross study evidence pattern and interpretation for certification

Factor	Studies	General Pattern	Certification Interpretation
Service quality	6	Consistently positive for satisfaction	Baseline reliability, responsiveness, assurance, empathy, and accurate information
Human competence	2	Strong positive relationship with satisfaction and loyalty	Assessor expertise and integrity create institutional credibility
Facilities	3	Generally positive and dependent on context	Minimum adequacy prevents dissatisfaction, and facilities enable rather than define value

Factor	Studies	General Pattern	Certification Interpretation
Digitalization	2 direct plus supporting electronic service evidence	Positive through speed, access, and transparency	Integrated, stable, and user friendly systems improve the certification journey
Satisfaction to loyalty	6	Frequently supported, although mediation is not universal	Repeat certification depends on satisfaction together with trust, value, and contextual conditions

Table 2 summarizes the evidence pattern for each factor across the included studies and translates it into an interpretation for professional certification, based on the authors' synthesis. The table shows that service quality and the link between satisfaction and loyalty have the largest number of supporting studies, while competence and digitalization rely on only two direct studies each. It also shows that the role of each factor differs, as service quality provides a baseline, competence provides credibility, facilities provide enabling conditions, and digitalization provides access and transparency. This differentiation underpins the integrated explanation developed in the discussion.

4.7 Discussion

The combined evidence supports a layered model rather than an explanation based on a single factor. Service quality shapes the consistency of administrative interaction, assessor competence determines confidence in the expert judgment, facilities provide the physical and technological conditions for assessment, and digitalization determines accessibility, speed, visibility, and user control. These factors are operationally interdependent. A responsive staff member cannot compensate for an unstable registration system, a modern testing room cannot replace an unqualified assessor, and a competent assessor may still be evaluated negatively when procedures and the communication of results are unclear. This interdependence is consistent with the customer journey perspective, which holds that experience is formed by the cumulative effect of many touchpoints ([Lemon & Verhoef, 2016](#)).

The review therefore proposes an integrated sequence for professional certification services. Operational service factors create perceived reliability, fairness, convenience, and credibility. These perceptions generate satisfaction and trust, which then increase repeat use and recommendation. The sequence is compatible with SERVQUAL and customer loyalty theory ([Parasuraman et al., 1988](#), [Griffin, 2005](#)), but it extends them by emphasizing expert competence and digital process architecture as distinct features of certification services. It also aligns with evidence that satisfaction influences organizational performance through loyalty and word of mouth ([Otto et al., 2020](#)).

Several managerial implications follow. The first priority is to design service improvement as one connected certification journey, mapping every participant touchpoint from initial information and registration to evidence submission, assessment, feedback, results, and certificate issuance, with service standards that specify response times, document accuracy, escalation procedures, and transparent communication. The second priority is systematic assessor governance. Calibration, continuing professional development, occupational updating, observation of assessment practice, ethical reinforcement, and standardized briefing and feedback can reduce inconsistency and strengthen confidence ([Bacon et al., 2017](#), [Oudkerk Pool et al., 2018](#)). The third priority is to maintain facilities that are fit for purpose, including testing equipment, computers, internet access, room comfort, safety, sanitation, and accessibility, guided by assessment validity and participant accessibility rather than appearance alone. Institutions should also monitor satisfaction and loyalty separately, because satisfaction surveys capture immediate evaluation, whereas repeat certification and recommendation require longitudinal records and may be influenced by scheme availability, price, employer requirements, and certificate utility.

Table 3. Research agenda for professional certification services

Theme	Research Question	Suggested Design
Integrated model	Do service quality, assessor competence, facilities, and digitalization jointly predict satisfaction and loyalty in certification institutions	Survey across several institutions with structural equation modeling
Mediation	Do satisfaction and trust act as parallel or sequential mediators	Structural equation modeling with competing mediation models
Delivery mode	How do fully digital, hybrid, and face to face assessment models differ in participant outcomes	Comparative study across delivery modes
Participant type	Do first time and repeat participants evaluate certification services differently	Multigroup analysis
Actual loyalty	Does initial experience predict actual repeat certification	Longitudinal design linking surveys with institutional records

Table 3 presents a research agenda derived from the gaps identified in this review. Each row specifies a theme, a research question, and a suggested design. The agenda gives priority to testing the integrated model directly within certification institutions, examining satisfaction and trust as mediators, comparing digital and face to face delivery, distinguishing first time from repeat participants, and linking initial experience to actual repeat certification over time. Together, these studies would move the field from transferring evidence from adjacent sectors toward building evidence that is specific to professional certification.

5. Conclusions

This bounded systematic review of ten empirical studies shows that service quality, human competence, facilities, and digitalization each contribute to satisfaction through different but complementary mechanisms. Service quality has the broadest and most consistent support. Competence creates credibility in knowledge intensive services, facilities prevent operational inconvenience, and digitalization improves access, speed, and transparency. Satisfaction frequently supports loyalty and mediates the effect of service factors, although the pathway is not automatic for every behavioral outcome.

For professional certification institutions, the central implication is integration. Participant satisfaction and loyalty are most likely to improve when reliable service procedures, competent and ethical assessors, testing facilities that are fit for purpose, and stable digital systems operate as one coherent journey. Institutions should therefore avoid isolated improvement projects and coordinate service standards, assessor development, facility readiness, and digital transformation.

This review has important limitations. The corpus was predetermined by the literature review of the thesis and does not represent an exhaustive search across databases. The included studies were heterogeneous in sector, measurement, sample, and analytical method, which prevented meta analysis, and some evidence was transferred from adjacent settings rather than professional certification itself. The conclusions should therefore be regarded as an evidence informed conceptual synthesis rather than a definitive estimate of pooled causal effects. Future research should conduct a systematic review across databases and test the integrated model empirically in several certification institutions to validate the relative strength of these factors.

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Author Contributions

EKD contributed to the conceptualization of the study, data extraction, synthesis, and the writing of the original draft. S contributed to the supervision of the study, the refinement of the conceptual framework, and the review and editing of the manuscript. ST contributed to the review and editing of the manuscript and to the interpretation of the findings from an international perspective. All authors read and approved the final manuscript.

Conflict of Interest

The authors declare that there is no conflict of interest regarding the publication of this article.

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