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Service Innovation in Enhancing Academic Quality at Private Higher Education Institution in Gorontalo: An Integrative Conceptual Approach Based on the Diffusion of Innovation Theory

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Abstract

This study aims to explore service innovations in enhancing academic quality at private universities in Gorontalo. The smain problem identified is the low sustainability of innovation due to weak governance structures. Employing a qualitative approach with a case study method, the research was conducted at selected private universities in Gorontalo. Data were collected through interviews, observations, focus group discussions, and document analysis, and were analyzed thematically. The findings reveal that innovations are predominantly technical and administrative in nature and have yet to be fully integrated into institutional quality systems. Although the innovations demonstrate relative advantage, compatibility, complexity, trialability, and observability, their implementation remains suboptimal. The study recommends strengthening principles of sustainable innovation governance and integrating both intrinsic and extrinsic factors of the diffusion of innovation theory into institutional quality improvement practices. These findings offer conceptual contributions to the development of service innovations in higher education, particularly in a local contextual framework.

Keywords: *Service Innovation; Academic Quality; Private Universities; Diffusion of Innovation*

Introduction

Over the past decade, Indonesia's higher education landscape has faced increasing pressure to undergo transformation, particularly in enhancing academic quality (Wawak et al., 2023). Demands for more competent graduates, curriculum relevance, and effective academic services have pushed universities not only to survive but also to innovate continuously. Despite growth in institutions and enrolments, the country's higher education institutions rank low across global rating indicators (Burgess et al., 2023). Amidst this intensifying competition, private universities in regions like Gorontalo encounter

dual challenges: improving academic quality amid limited resources while also ensuring institutional competitiveness on a sustainable basis.

A qualitative approach is essential in understanding this issue because the social and institutional realities within private universities are complex, contextual, and often cannot be measured through quantitative methods alone (Mochnacs et al., 2024). Through a qualitative paradigm, researchers can deeply explore the internal dynamics of institutions, the perceptions of educational actors, and the forms of service innovation that emerge as responses to external pressures and internal needs. Research in this area is still growing in 2023 despite a slight decrease in 2022, indicating the continued relevance and importance of innovation studies in higher education (Arviansyah et al., 2024).

Service innovation in the private universities context does not necessarily refer to sophisticated technologies or drastic digital system overhauls. Rather, innovation may appear in simple yet impactful forms, such as more human centered service approaches, transparency in academic administration, or shifts towards more collaborative work cultures (Supriyanto et al., 2024). Therefore, it is crucial to explore how educational actors in Gorontalo's private universities perceive and implement innovation in their daily practices.

In this context, Everett M. Rogers' Diffusion of Innovation Theory becomes highly relevant. The aim of this exploratory case study was to gain insight into the ML adoption process using the lens of Rogers' Diffusion of Innovation Theory (Frei-Landau et al., 2022). This theory explains how an innovation is introduced, communicated, and adopted by individuals or groups within a social system (Rogers, 2003). Recent studies have demonstrated the continued applicability of Rogers' framework in educational contexts, particularly during periods of technological disruption (Sahin, 2006). Consequently, a conceptual approach that integrates this theory can help explain how academic service innovations are disseminated and embraced within the private universities environment in Gorontalo.

As educational entities that are often in a marginal position compared to public universities (Aneta & Nani, 2022), private universities in Gorontalo tend to have more flexibility in decision making but also face more significant implementation constraints. Higher education institutions in Indonesia are currently facing significant challenges in maintaining public trust, requiring them to uphold autonomy, transparency, accountability, and continuously meet standards for quality assurance and improvement (Pratiwi & Kusumah, 2023). These conditions create a space for the emergence of localized, context specific innovations that warrant in depth qualitative examination to fully understand their essence and relevance.

Previous studies have largely focused on the technical aspects of academic quality improvement, such as accreditation, curriculum development, or lecturer performance indicators (Marshall et al., 2024). However, research examining service innovation as a strategic tool for enhancing academic quality remains limited especially studies that incorporate diffusion of innovation theory as their core conceptual framework. A conceptual review of the higher education system based on open innovation (OI) perspectives emphasizes the need for more comprehensive frameworks in understanding innovation processes (Mochnacs et al., 2024). This is precisely where the contribution of this study lies: in building an integrative approach that bridges theory and practice.

The transformation of academic services is driven predominantly by individuals and groups (Wawak et al., 2023). The perceptions of university leaders, lecturers, administrative staff, and even students towards innovation significantly influence the success or failure of an initiative. The year 2023 was a time of rapid changes for higher education. Central to the changes was the integration of Generative AI (GenAI) in the already fast-moving digital transformation. Therefore, this research seeks to uncover the narratives, lived experiences, and adaptation strategies of key actors within the private higher education system.

Additionally, organizational culture and leadership dynamics within Gorontalo's private universities play a pivotal role in creating an innovation friendly climate. A culture that encourages collaboration, openness to change, and empowerment of human resources can act as a catalyst for the diffusion of service innovations. A qualitative approach allows researchers to capture these cultural dimensions in a nuanced and meaningful way.

More importantly, this study is not only concerned with what innovations have been implemented to improve academic quality, but also seeks to explore how and why these innovations emerged and were accepted by the academic community. Through in depth interviews, participatory observations, and document analysis, the researcher aims to construct a holistic understanding of the ongoing transformation process.

It is also vital to highlight that service innovation is not merely an institutional activity, but a socially meaningful process. Every innovation arises from specific needs, values, and social interpretations. Therefore, the qualitative paradigm offers a lens to better understand the subjective dimensions of innovation processes an aspect often overlooked in quantitative research.

By adopting an integrative conceptual approach grounded in diffusion of innovation theory, this study aims to provide a framework that is not only contextual and reflective, but also applicable for developing academic quality policies at the private universities level. The resulting model could serve as a valuable reference for other private university administrators in similarly situated regions, particularly given the contemporary challenges facing higher education institutions globally.

Research Methodology

This study employed a descriptive qualitative approach to gain an in depth understanding of the dynamics of service innovation in enhancing academic quality at private universities in Gorontalo Province. This approach was selected as it enables the researcher to explore social and institutional realities through the lived experiences of higher education actors (Creswell & Creswell, 2014). It allows for the capture of subjective meanings, processes, and challenges faced by educational institutions in implementing academic service innovations.

The research was conducted at three private universities with distinct institutional characteristics: Universitas Ichsan Gorontalo, Universitas Bina Taruna Gorontalo, and Universitas Nahdlatul Ulama Gorontalo. These institutions were purposively selected to represent variations in institutional age and accreditation status, offering a comparative view of innovation strategies and academic quality dynamics across different institutional contexts. Additionally, their geographical proximity within Gorontalo City and surrounding areas facilitated direct and intensive researcher interaction with the field.

The subjects of this study were individuals holding strategic roles within the university organizational structure, both directly and indirectly involved in the academic service innovation process. The primary informants included university Rectors, Presidents or Directors, Vice Rectors, Deans, Heads of Quality Assurance, Heads of Study Programs, and Lecturers. These informants were considered to have relevant insights and experiences to contextually explain how innovations are designed, implemented, and evaluated in relation to academic quality improvement.

To determine the informants, the study utilized stratified purposive sampling. This technique allowed for the deliberate selection of participants from various institutional strata, including leadership, quality management personnel, and academic implementers. Aligned with Patton’s perspective, purposive sampling is effective in eliciting rich and meaningful information from individuals who best understand

the research context (Patton, 2014). The diversity of informant roles also enabled the researcher to uncover varying perceptions and strategies in the implementation of service innovations.

Data collection was carried out through several key techniques, namely direct observation, semi structured in depth interviews, and focus group discussions. Observations were conducted within the university environment to observe innovation practices, inter unit interactions, and actual academic service conditions. These observations also helped the researcher comprehend the physical, social, and cultural contexts influencing innovation implementation. Meanwhile, the in depth interviews followed a flexible open ended guide, allowing the interviewer to adapt the flow of questions based on the dynamics of the conversation. This technique was effective in exploring informants' perceptions, experiences, and expectations regarding academic quality improvement through service innovation.

The data sources in this study consisted of primary and secondary data. Primary data were derived from interviews and direct observations conducted by the researcher. These data were narrative and contextual, providing a deep picture of the phenomena under study. Secondary data included supporting documents such as accreditation reports, internal quality policies, strategic planning documents, and relevant previous research findings. These documents were used to strengthen and broaden the researcher's understanding of the institutional context and policy landscape.

The data analysis technique employed was thematic analysis. The process began with data reduction, where key information directly related to the research focus was identified. This was followed by data presentation in the form of narratives, direct quotations from informants, and thematic maps illustrating the relationships between concepts. The final stage involved drawing conclusions based on identified patterns, relationships, and meanings. This analysis was conducted in a cyclical and reflective manner, in line with the principles of grounded theory in qualitative research (Miles & Huberman, 1994).

To ensure the validity and reliability of the findings, several validation strategies were applied. First, source triangulation was conducted by comparing data obtained from interviews, observations, and documents. Second, member checking was performed by seeking confirmation from informants regarding the researcher's interpretations. Third, the researcher maintained an audit trail a systematic record of the research process to provide transparency and traceability of data and analysis.

Results and Discussion

The adoption of service innovations has not yet reached optimal levels, despite various efforts made to enhance academic quality across the three private universities in Gorontalo. Service innovations in the education domain that have been implemented include the use of integrated academic information systems, learning management systems, blended learning processes, and project based learning methods, with outputs such as scholarly articles and books. The advantages of these innovations include improved efficiency in academic administrative services, which were previously manual, inefficient, prone to errors, and time consuming.

Digitalization has enabled the comprehensive integration of academic services ranging from course registration, academic transcripts, attendance, to Lecturer Workload and Higher Education Database (PDDikti) reporting, into a structured and interconnected system. These innovations are also considered compatible with the values, culture, and institutional needs of private higher education institutions in Gorontalo. Support for these innovations is reinforced by active user involvement, responsiveness to feedback, and alignment with national policy frameworks.

Ease of use is reflected in the reduced need for physical interaction, faster service delivery, and open access to systems anytime and anywhere via online platforms. The ability to trial systems prior to

full implementation has also had a significant impact on user acceptance and comfort in adapting to new technologies. The observability aspect of academic service innovations has become tangible, clearly demonstrated through service transparency, access to academic data, tracking of student and faculty activities, and accountability in external reporting such as accreditation and PDDikti submissions. This proves that digital transformation is not an abstract concept but one that delivers real, measurable change.

However, the implementation of digital based academic service innovations still faces fundamental, multidimensional challenges. Research findings indicate that adopting systems like Academic Information System, learning management systems, blended learning, and outcome based learning requires more than just technical readiness; it also demands organizational preparedness, human resource capability, and alignment with the academic community's work culture.

Meanwhile, innovation in research and community service is marked by policies promoting scientific publications and intellectual property rights, grant funding for research and service activities, and the empowerment of human resources through training, mentoring, and ongoing technical assistance. These initiatives aim to enhance lecturers' capacity to develop grant proposals, refine publication strategies, and deepen their understanding of national research policy directions.

Nevertheless, there are several constraints in the implementation of these programs. Structurally, limited funding remains the primary obstacle. The weak fiscal condition of institutions means that not all research and service proposals despite their promising substance can be funded. In addition, the lack of program socialization, the absence of an adequate mentoring system, weak reporting documentation, and underdeveloped digital systems all pose further challenges. In terms of human resources, gaps remain in research literacy and the ability to write proposals and academic articles, especially among young lecturers and students.

The Contribution of Conceptual Theoretical Novelty within the Local Context of Gorontalo

This study contributes to the development of the Diffusion of Innovation (DoI) theory by emphasizing that the success of innovation adoption and sustainability within private universities cannot be fully explained by Rogers' classical approach, which focuses primarily on perceptions of innovation characteristics. In practice, innovation adoption is far more complex and influenced by various external determinants that are structural and systemic in nature.

According to Rogers' Diffusion of Innovation theory, the adoption of innovation largely depends on how individuals or institutions perceive five core characteristics of an innovation: relative advantage, compatibility, complexity, trialability, and observability. These five characteristics possess strong theoretical relevance and have been widely validated across numerous innovation adoption studies.

However, in the context of private universities in Gorontalo, empirical findings indicate that the success of innovation is not solely shaped by perceptions of these innovation characteristics. On the contrary, external factors play an equally, if not more, decisive role and in many cases serve as the primary catalyst for change. The innovation processes that take place within private institutions, which typically operate with limited institutional capacity, are strongly influenced by structural and regulatory pressures from the external environment.

Therefore, this study argues for the reconstruction of the Diffusion of Innovation theory by integrating extrinsic dimensions that have been largely overlooked or insufficiently accommodated in Rogers' original theoretical framework. The four extrinsic dimensions identified in this study include:

1. Policy Pressure

In higher education, policies issued by the government, foundation boards, or accreditation agencies often serve as critical determinants in driving the adoption of innovation. This pressure can take the form of mandatory implementation of digital systems, performance indicator targets, and both incentives and sanctions embedded within specific policies. As stated by (Damanpour & Schneider, 2006), external pressure from regulators frequently acts as a catalyst that accelerates the innovation adoption process especially when institutions face demands for legitimacy and competitiveness. Such pressures may include requirements for adopting Academic Information Systems (SIAKAD), Learning Management Systems (LMS), digital reporting through the Higher Education Database (PDDIKTI), and achievement of performance metrics such as Key Performance Indicators (IKU), which form the basis for university performance evaluation.

In institutional theory, this is known as normative and coercive pressure (DiMaggio & Powell, 1983), whereby organizations conform to change not merely due to internal needs, but as a response to dominant external norms. As a result, innovation adoption in private universities is not always voluntary or driven by internal readiness, but is often shaped by normative and strategic external forces.

2. Infrastructure Availability

The second factor is the availability of supporting infrastructure, encompassing technological aspects (hardware and software), network connectivity, and sufficient funding. Without adequate infrastructure, even well designed innovations are unlikely to be implemented effectively.

The success of innovation adoption heavily depends on the availability of enabling infrastructure, including IT hardware and software, reliable internet connectivity, and sufficient financial support for system development. According to (Venkatesh et al., 2003), infrastructure conditions are part of “facilitating conditions” that directly influence users' intentions and behaviors in adopting new technologies. For private universities, funding limitations often serve as a major barrier to developing sufficient digital infrastructure. Nevertheless, as (Brynjolfsson & McAfee, 2014) point out, investing in digital infrastructure should not be seen as a cost, but rather a strategic long term investment that determines institutional competitiveness. In the era of Industry 5.0, higher education institutions are expected to integrate technology with human values, making infrastructure readiness a foundational requirement.

3. Institutional Ecosystem Readiness

This dimension refers to the extent to which an institution’s organizational structure, academic culture, and leadership style support change. Institutions with adaptive governance systems and inclusive leadership are better positioned to handle innovation driven disruptions compared to those with rigid bureaucracies resistant to change.

According to Kotter (1996), successful organizational transformation is influenced by a clear vision for change, strong leadership support, and a culture that promotes collaboration and renewal (Kotter, 1996). In private universities, challenges arise when rigid bureaucratic structures and centralized leadership stifle innovative initiatives. In contrast, institutions that foster adaptive governance and transformational leadership are more prepared to embrace change. This aligns with Fullan’s (2016) findings, which emphasize the importance of creating organizational environments conducive to continuous learning and innovation (Fullan, 2016). Therefore, institutional ecosystem readiness is a key indicator of an institution’s capacity to adaptively respond to external dynamics.

4. Human Resource Readiness

Innovation adoption fundamentally depends on the engagement of human resources who are prepared, competent, and committed to change (Abdussamad et al., 2015). In public administration innovation studies, humans are always central actors in determining the success of new system implementation (Aneta et al., 2014). Thus, human resource readiness in terms of capacity, motivation, and technological literacy is a critical precondition for successful innovation.

Bandura (1997) emphasizes the role of self-efficacy one's belief in their ability to acquire new skills as essential in determining how quickly and effectively individuals adapt to change (Bandura, 1997). This readiness encompasses cognitive (knowledge and skills), affective (motivation and commitment), and conative (readiness to act) dimensions. Mishra and Koehler's (2006) Technological Pedagogical Content Knowledge (TPACK) model asserts that technology integration in education can only be effective when educators possess a balanced blend of technological, pedagogical, and content knowledge (Mishra & Koehler, 2006). In private universities, strengthening the capacity of lecturers and administrative staff through continuous training is essential. Furthermore, cultivating an organizational culture that values learning will enhance human resource readiness in supporting innovation agendas.

Based on these four findings, this study proposes a reclassification within the Diffusion of Innovation (DoI) theory into two major categories, intrinsic factors those aligned with Rogers' original conceptualization, which include relative advantage, compatibility, complexity, trialability, and observability. Extrinsic factors a conceptual enrichment introduced by this study, comprising policy pressure, infrastructure availability, institutional ecosystem readiness, and human resource readiness.

Figure 1. Innovation Adoption Classification

These two categories are not positioned as a dichotomy in opposition to one another, but rather as two complementary dimensions. For private universities that face structural challenges and intense regulatory pressure, the four extrinsic dimensions are, in fact, key determinants of innovation sustainability. Therefore, the success of innovation in the context of private higher education cannot rely solely on the inherent characteristics of the innovation itself but must also consider the readiness and systemic support of the institutional environment.

Thus, this reconstruction is not merely conceptual in nature, but also addresses practical needs in understanding the phenomenon of innovation adoption in private universities. The addition of extrinsic dimensions to the Diffusion of Innovation theory, as proposed in this study, is expected to offer a significant theoretical contribution to innovation research in higher education especially within developing countries like Indonesia. Moreover, the model holds the potential to serve as a new, more contextual, applicable, and relevant framework for policymakers and stakeholders in the higher education sector.

Principles of Sustainable Innovation Governance

This study also reveals that the implementation of innovation within private universities in Gorontalo has not been fully optimal. Several innovations, although initially launched with high enthusiasm, have shown signs of stagnation at subsequent stages. As expressed in various interviews, initial enthusiasm is often not accompanied by consistent implementation.

In response to these conditions, this study proposes the principles of sustainable innovation governance as a second conceptual novelty in enriching the theory of innovation adoption. These principles include: commitment, consistency, communication, collaboration, coordination, cooperativeness, and creativity. These seven principles are not speculative; rather, they are crystallized from practices that have successfully sustained innovation in several private universities.

The findings of this study indicate that for adopted innovations to progress beyond short term policies or one off projects and instead continue to develop and deliver tangible impact, sustainable governance principles are essential. These principles, as identified from empirical practices in the field, are not merely normative discourse but serve to shape effective managerial patterns that support the continuity of innovation. This study contributes a conceptual novelty by developing principles of sustainable innovation governance based on real world practices within private universities in Gorontalo. These principles commitment, consistency, communication, collaboration, coordination, cooperativeness, and creativity have been identified and developed as key factors that directly contribute to sustaining innovation.

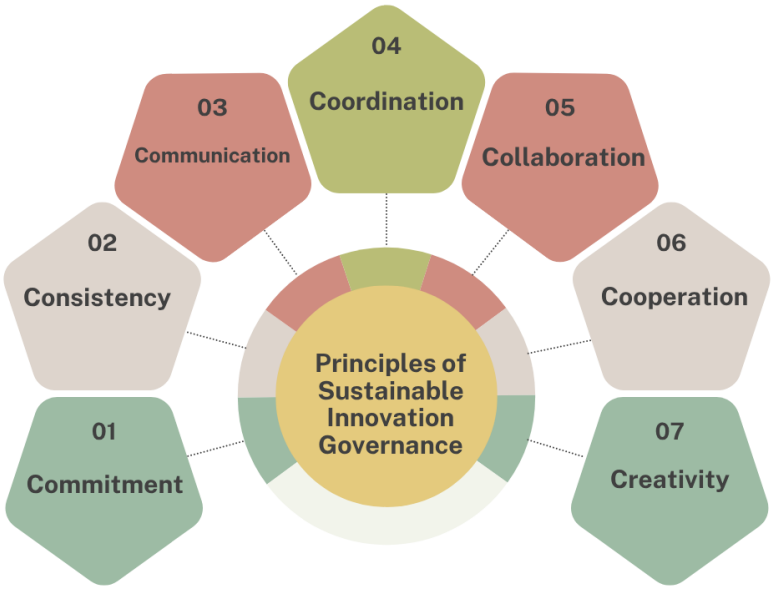

Figure 2. Principles of Sustainable Innovation Governance

The novelty of this study lies in the integration of these principles as operational indicators of innovation sustainability, an area that has not been extensively discussed in previous innovation adoption literature, which tends to focus more on the early phases of adoption.

In addition, this research contributes empirically through a case study in Gorontalo, showcasing real world practices and challenges on the ground, and constructing a practical model based on these principles that can be adopted and adapted across various higher education contexts. As such, this work enriches the literature on innovation management while offering a practical, evidence based guide that is both contextual and innovative.

The following outlines the seven principles that form an innovative culture resilient to both external pressures and internal institutional dynamics:

1. Commitment

In higher education innovation governance, commitment represents a strong resolve and dedication from institutions to allocate resources, develop policies, and take tangible actions in support of long term innovation processes. It reflects the willingness of leaders and stakeholders to position innovation as a key part of long term strategic planning. More than an intentional statement, commitment must be reflected in concrete policies that embed the innovation vision into the organization's strategic plan (Yasin et al., 2021).

Committed institutions not only issue declarations but demonstrate real support through clear policies, sufficient resource allocation, and exemplary leadership. As (Fullan, 2007) asserted, integrating an innovation vision into the strategic plan is essential for driving sustainable change. This is supported by the Transformational Leadership Theory (Bass & Bass Bernard, 1985), which posits that leaders' commitment to building a shared vision can inspire the entire organization to engage in transformation and innovation.

The dimension of commitment becomes even more nuanced when viewed through the lens of Organizational Commitment Theory (Meyer & Allen, 1991), which distinguishes three components: affective (emotional attachment), normative (moral obligation), and continuance (cost benefit considerations). All three play crucial roles in sustaining innovation in higher education. From the Resource Based View (Barney, 1991), commitment to allocating unique and valuable resources is seen as a key to an organization's competitive advantage.

Implementation of commitment is visible when a university allocates significant funding for faculty development programs, provides modern research facilities, and fosters a collaborative environment among faculties. Such commitment generates the momentum necessary to sustain innovation initiatives even amidst external challenges or pressures.

2. Consistency

Consistency represents the alignment and continuity in applying values, policies, and innovation practices over the long term. This element signals stability in the organization's strategic direction despite facing challenges and environmental changes. Consistency does not imply rigidity but reflects the ability to uphold core principles while remaining adaptive to evolving conditions.

Denison (1990) emphasized that a strong organizational culture enhances effectiveness and performance, suggesting that institutions demonstrating consistency are better equipped to endure environmental shifts (Denison, 1990). This is reinforced by the Competing Values Framework (Cameron

& Quinn, 2011), which positions consistency as one of four key cultural dimensions contributing to organizational effectiveness.

Higher education institutions that consistently embed innovation values into every aspect of operations foster an environment conducive to innovation. Such consistency generates predictability, enabling faculty and students to form realistic expectations about institutional support. When innovation values are internalized and upheld consistently, they cultivate a sense of security and trust among organizational members, which in turn facilitates collaboration and innovation.

Schein's Organizational Culture Theory (2010) explains that consistency in basic assumptions, values, and cultural artifacts creates stability and predictability that support innovation (Schein, 2010). Meanwhile, the Dynamic Capabilities Theory (Teece, 2007) asserts that consistent development of dynamic capabilities allows organizations to adapt continuously without compromising their core identity.

3. Communication

Communication in innovation governance functions as a two way, open, and participatory process of exchanging information, ideas, and knowledge across various levels and units within an organization. Beyond simply delivering messages, effective communication aims to foster shared understanding, build consensus, and facilitate the implementation of innovation throughout the institutional ecosystem.

Robbins and Judge emphasize that strategic communication not only serves to convey policies but also to cultivate a sense of ownership of innovation across all institutional levels (Robbins & Judge, 2019). The participatory dimension of communication is crucial, as it allows all members of the organization to contribute ideas, suggestions, and constructive feedback. Kotter adds that effective communication can generate a sense of urgency and motivation among organizational members to support desired changes (Kotter, 2012).

The theoretical foundation for communication in innovation can be traced to Shannon and Weaver's Communication Theory (1998), which provides a fundamental framework for effective communication processes (Shannon & Weaver, 1998). Within the context of innovation, Rogers' Diffusion of Innovation Theory (2003) offers a more specific perspective on the role of communication in disseminating and adopting innovations through social networks (Rogers, 2003).

Granovetter's Social Network Theory (1973) enriches this understanding by highlighting the importance of communication in building networks that support knowledge transfer and innovation (Granovetter, 1973). Daft and Lengel's Media Richness Theory explains how choosing the appropriate communication medium can enhance the effectiveness of complex information transfer (Daft & Lengel, 1986), while Buber's Dialogical Communication Theory emphasizes the importance of dialogic communication in fostering mutual understanding and authentic collaboration (Buber, 1970).

Effective communication practices can be observed when a university holds regular discussion forums between management and faculty. These forums allow for the exchange of ideas in curriculum development or teaching methods, while management can communicate strategic policy directions. Such dialogue fosters mutual trust and strong collaboration, which are essential in navigating innovation challenges.

4. Coordination

Coordination represents a systematic process of synchronizing, integrating, and aligning various activities, resources, and organizational units to work harmoniously in achieving shared innovation goals.

Without effective coordination, innovation initiatives may proceed in silos, leading to confusion, duplication of effort, and wasted resources that can hinder institutional progress.

In his Organizational Design Theory, Mintzberg identifies five fundamental coordination mechanisms relevant to innovation: mutual adjustment, direct supervision, standardization of work processes, outputs, and skills (Mintzberg, 1979). Each mechanism is suited to different levels of complexity and the nature of the innovation activities being conducted. Williamson's Transaction Cost Economics (1975) explains how effective coordination reduces transaction costs within organizations (Williamson, 1975), while Katz and Kahn's Systems Theory (2015) highlights coordination's role in maintaining balance and system integration (Katz & Kahn, 2015).

In practice, if a higher education institution launches a new innovation program without clear coordination between academic and administrative departments, resource overlaps or confusion in program implementation may occur. Effective coordination ensures that all parties share a common understanding of goals and the steps needed to achieve them.

Lawrence's Contingency Theory (1967) indicates that effective coordination mechanisms depend on an organization's level of differentiation and integration the more complex the structure, the more sophisticated the coordination needed (Lawrence, 1967). Galbraith's Information Processing Theory (1973) further explains how coordination can be enhanced through appropriate information systems (Galbraith, 1973), a highly relevant insight for the current era of digitalized higher education.

5. Collaboration

Collaboration refers to the process of cooperative work involving diverse individuals, units, or organizations to share knowledge, resources, and expertise in creating innovative solutions that could not be achieved individually. This principle emphasizes synergy and value creation through constructive interaction, where the collective outcome exceeds the sum of individual contributions.

Hargreaves and Fullan underscore that cross functional and inter professional collaboration fosters synergies that generate new ideas and creative approaches to problem solving (Hargreaves & Fullan, 2012). Effective collaboration not only enhances innovation quality but also strengthens support and commitment for proposed changes, as it is backed by multiple stakeholders.

Coleman's Social Capital Theory (1988) explains how collaborative networks create value through trust, norms, and social ties (Coleman, 1988). In higher education, such social capital is a valuable asset for accelerating innovation processes. Nonaka and Takeuchi's Knowledge Management Theory (1995) enriches this view by emphasizing the role of collaboration in converting tacit knowledge into explicit knowledge through processes of socialization, externalization, combination, and internalization (Nonaka & Takeuchi, 1995).

Chesbrough's Open Innovation Theory (2003) illustrates how collaboration with external actors can speed up and enhance the quality of innovation (Chesbrough, 2003). This is particularly relevant for higher education institutions that need to collaborate with industry, government, and communities to generate impactful innovations. Hackman's Team Effectiveness Theory (2002) and Ancona and Caldwell's Cross Functional Team Theory (1992) offer guidance on the conditions supporting effective team collaboration and the dynamics of cross functional cooperation within organizations (Hackman, 2002)(Ancona & Caldwell, 1992).

6. Cooperation

A cooperative attitude represents a behavioral orientation marked by individuals' or groups' willingness to work together in a spirit of mutual assistance, sharing, and support to achieve common goals. This attitude is grounded in mutual trust and a commitment to collective success, creating a positive atmosphere conducive to innovation development.

In his work on learning organizations, Senge argues that a cooperative spirit fosters institutional solidarity and reduces resistance to change (Senge, 1990). In innovation contexts, cooperation fosters a social environment that supports experimentation and collective learning. Cooperative environments reduce tensions and conflicts commonly associated with innovation, thereby creating a more productive and harmonious workplace.

Nash's Game Theory (1950) explains how cooperative strategies can lead to optimal outcomes for all parties, a concept known as the win win solution (Nash, 1950). Bandura's Social Learning Theory (1977) highlights the role of modeling and reinforcement in developing cooperative behavior (Bandura, 1977). When leaders and senior members demonstrate cooperative attitudes, they set an example that is likely to be emulated by others in the organization.

Organ's Organizational Citizenship Behavior Theory (1988) shows how cooperative behavior goes beyond formal responsibilities to contribute to organizational effectiveness (Organ, 1988). Batson's Prosocial Behavior Theory (1991) explores the altruistic motivations behind helping behavior (Batson, 1991), while Meyer and Allen's Trust Theory (1991) identifies a strong link between trust and cooperation in organizations (Meyer & Allen, 1991). Edmondson's Psychological Safety Theory (1999) adds that cooperative environments foster psychological safety, which is essential for learning and innovation (Edmondson, 1999).

7. Creativity

Creativity can be defined as the ability of individuals or organizations to generate new, useful, and original ideas, solutions, or approaches in response to challenges or opportunities. It involves cognitive processes that combine existing knowledge with new methods to create something that has never existed before. Within higher education institutions, creativity enables actors to respond to change adaptively, generate novel solutions, and enrich innovation practices.

Amabile identifies three core components of creativity: domain relevant skills, creativity relevant processes, and task motivation (Amabile, 2019). This model suggests that optimal creativity occurs when individuals possess expertise in their domain, understand creative processes, and are intrinsically motivated. Creative environments typically offer room for exploration and tolerate failure, fostering a culture that values new ideas and provides opportunities for experimentation.

Csikszentmihalyi's Systems Model of Creativity explains that creativity results from the interaction between the individual, the domain of knowledge, and the field or community of experts. This implies that creativity does not solely rely on individual abilities but also on the richness of the knowledge domain and the academic community's openness to new ideas (Csikszentmihalyi, 1998).

The Dual Process Theory (Wallas, 1926) outlines the creative process in stages: preparation, incubation, illumination, and verification. The Investment Theory of Creativity (Sternberg & Lubart, 1991) describes creativity as an investment in less popular but high potential ideas, similar to investing in undervalued stocks. Creative Climate Theory (Ekvall, 1996) identifies organizational climate dimensions that either support or inhibit creativity, while Intrinsic Motivation Theory (Ryan & Deci, 2000) emphasizes the role of intrinsic motivation in driving creative and innovative behavior.

When individuals feel psychologically safe to explore new ideas without fear of negative consequences, they are more likely to contribute to broader innovation processes. A creativity supportive environment provides freedom to take risks and learn from failure an integral part of the innovation journey.

Thus, these principles represent a dynamic, sustainability oriented approach to innovation governance, not just one focused on short term success. This aligns with the innovation governance literature (Cinar et al., 2019), which highlights the importance of a managerial ecosystem that not only fosters innovation but also nurtures and strengthens it through inclusive leadership and institutional structures.

Conceptually, these findings complement and extend the Diffusion of Innovation theory, which has traditionally emphasized the early adoption phase and the characteristics of innovations. This study demonstrates that in higher education particularly in private universities with their unique structural and cultural dynamics the sustainability of innovation is more heavily influenced by the quality of governance and the institutional ecosystem than by perceived advantages of the innovation itself.

Based on the theoretical contributions outlined above, the conceptual framework developed in this study is illustrated in the following figure:

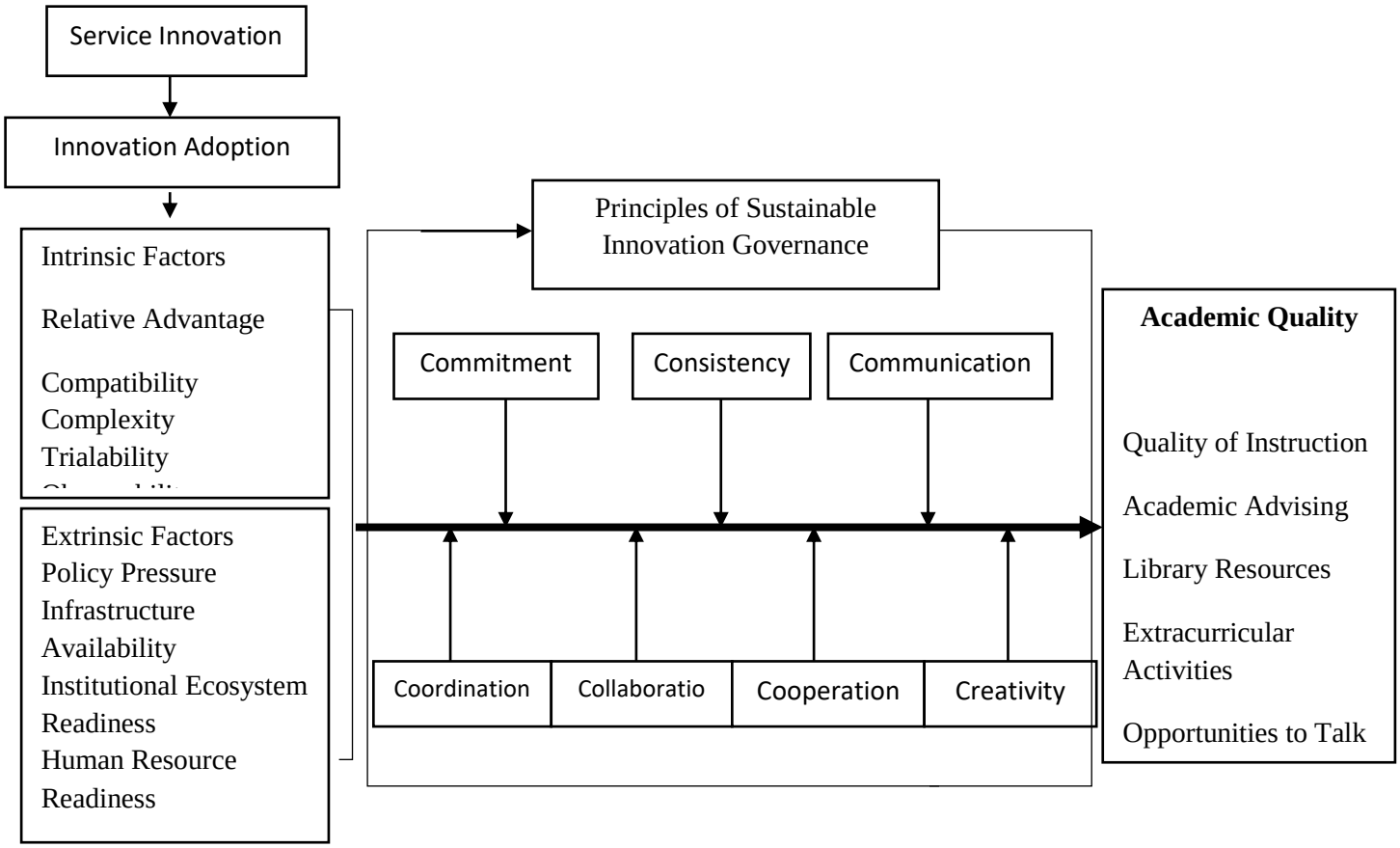

Figure 3. Theoretical Conceptual Framework Model of Service Innovation for Enhancing Academic Quality

Based on the theoretical conceptual framework model of service innovation for enhancing academic quality in private universities in Gorontalo, this model was developed through a theoretical synthesis combining Rogers' Diffusion of Innovation theory with newly developed constructs by the researcher, as well as the academic quality theory by Kotler & Fox. The model structure illustrates three main components: input (service innovation and innovation adoption), outcome (academic quality), and the principles of sustainable innovation governance, which serve as moderating variables. The construction of this framework aims not only to address theoretical gaps but also to provide practical guidance for effective implementation of service innovation in academic settings.

The model places Rogers' five intrinsic factors (2003) as fundamental constructs determining the success of service innovation adoption. Relative Advantage highlights that innovation must provide clear competitive benefits over existing service systems. Compatibility underscores the importance of alignment between innovation and the institution's existing values, experiences, and needs. Complexity indicates that the more difficult an innovation is to understand and use, the greater the barriers to adoption. Trialability and Observability complete the intrinsic construct by emphasizing the ability to test and observe innovation outcomes.

The model also internalizes four extrinsic factors as theoretical novelties that enrich the understanding of innovation adoption specific to higher education. Policy Pressure acknowledges the reality that educational institutions operate within a heavily regulated environment where government and regulatory policies can either drive or hinder service innovation adoption. Infrastructure Availability reflects the importance of technological and physical readiness as enablers of service innovation. Institutional Ecosystem Readiness encapsulates broader institutional preparedness, including organizational culture, governance systems, and network relationships supporting innovation implementation. Human Resource Readiness indicates that the success of innovation adoption in academic services also depends on staff competencies and willingness to embrace change.

The model further shows that service innovations initiated by private universities ultimately aim to enhance academic quality. It adopts Kotler & Fox's conceptualization of academic quality, comprising six dimensions: Quality of Instruction, as the core function of higher education institutions; Academic Advising, emphasizing the importance of personalized student support; Library Resources, highlighting the role of adequate learning infrastructure; Extracurricular Activities, acknowledging the value of holistic education beyond formal curriculum; Opportunities to Talk with Faculty, reflecting the significance of student faculty interactions; and Job Placement Services, representing the outcome orientation connecting education with employability and career success.

Although service innovations can directly impact academic quality, their long term success relies heavily on the institution's governance conditions. In this regard, sustainable innovation governance principles serve as moderating variables that can strengthen or weaken the influence of innovation on academic quality. The model identifies seven governance principles commitment, consistency, communication, coordination, collaboration, cooperativeness, and creativity as key moderators in the relationship between service innovation and academic quality. These principles are essential not only for individuals but also for institutions, ensuring that adopted innovations are sustained and not reduced to short term projects or initiatives.

Organizational commitment is a fundamental prerequisite for the success of service innovation. It reflects how seriously leaders and implementers are dedicated to executing consistent change. Without strong commitment, innovation adoption often remains temporary and lacks significant impact on academic quality. Consistency signals continuity and policy direction, which are crucial for strengthening systemic change within institutions. Without consistency, innovations tend to lose effectiveness and fail to contribute meaningfully to academic quality. Effective communication among academic stakeholders

determines the success of innovation implementation. Open, two way, data driven communication fosters shared understanding of innovation goals and benefits. Poor communication often results in resistance to change. Cross unit or cross functional innovations require high levels of coordination. When units are well coordinated, innovations integrate seamlessly into operational systems. Weak coordination often leads to partial or failed implementation. Collaboration among individuals, units, and even with external partners such as industry or research institutions broadens innovation scope and support. It creates space for sharing resources, ideas, and technologies that enhance academic quality. A cooperative culture reflects a supportive, open, and trusting work environment. When service implementers adopt cooperative attitudes, innovations are more smoothly executed and gain wider acceptance within the academic community. Creativity is a vital element in every innovation process. The ability of academic communities to think creatively shapes the quality of innovations and their capacity to address real academic challenges. Creativity also stimulates the emergence of new solutions that positively impact academic quality.

This conceptual model aims to bridge the gap between the generic diffusion of innovation theory and the specific context of higher education institutions in Indonesia. By integrating governance principles as moderating variables, this model contributes theoretically by expanding the understanding of factors behind innovation success. Practically, the findings from this study are expected to serve as a reference in designing more adaptive and sustainable service innovation policies within private universities.

Conclusion

This study concludes that service innovation in private universities in Gorontalo serves as a crucial instrument for improving academic quality amid limited resources, competitive pressures, and dynamic regulations. The main findings indicate that most innovations initiated by these institutions are technical and administrative in nature, such as the digitalization of academic systems, enhancement of student services, and improvement of learning procedures. However, these innovations are not yet fully integrated into internal quality assurance systems and tend to be unsustainable due to their heavy reliance on individual leadership, limited documentation, and the lack of regular evaluation. As a theoretical contribution, this research develops an integrative conceptual model based on Rogers' Diffusion of Innovation framework. The five core intrinsic constructs from Rogers' theory are positioned as pillars for successful adoption of service innovation. To expand the theoretical relevance within the regional higher education context, the study proposes four extrinsic constructs as elements of theoretical novelty: policy pressure, referring to the influence of regulatory support or constraints; infrastructure availability, concerning the readiness of technological and physical resources; institutional ecosystem readiness, which includes organizational culture and governance preparedness; and human resource readiness, highlighting the importance of competency and willingness to change among academic and administrative staff. The combination of intrinsic and extrinsic factors forms a contextual and applicable diffusion of innovation model, particularly suited to the development of academic services in resource limited private universities such as those in Gorontalo. Based on empirical practices observed in the three participating private universities, seven key principles were identified as essential for sustaining innovation: commitment, consistency, communication, collaboration, coordination, cooperativeness, and creativity. These principles have proven critical in building an adaptive and participatory managerial system capable of driving innovation organically from within the institution. Thus, innovation is not merely the responsibility of top leadership but is distributed across all elements of the academic community. Nonetheless, this study has several limitations. First, the limited scope of the research covering only three private universities in a single province restricts the generalizability of the findings to the broader national context of higher education. Second, most of the data collected were narrative and contextual, preventing quantitative measurement of the strength of relationships between the identified variables. Third,

constraints related to fieldwork duration and limited access to internal institutional documents affected the depth of several critical data points, particularly those related to innovation evaluation. Given these limitations, future research is recommended to develop a quantitative model based on the constructs identified in this study, allowing for broader validation and reliability testing. Additionally, further studies could explore the role of key actors (change agents) in the diffusion of academic innovations and how leadership dynamics influence institutional transformation. Comparative studies across provinces would also be valuable in examining the influence of social and cultural contexts on innovation governance in different types of higher education institutions in Indonesia.

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