# Local Innovators and the Development of "Smart Localities": Behaviors, Determining Factors, and Promotion Strategies in Mueang District, Maha Sarakham Province

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## Abstract

This study aimed to (1) examine the level of habitual innovative behavior among personnel who function as local innovators in local administrative organizations (LAOs) in Mueang District, Maha Sarakham Province; (2) analyze the factors influencing innovative behaviors; and (3) propose

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strategic guidelines for enhancing such behaviors to support the development of Smart Locality. A mixed-methods approach following an Explanatory Sequential Design was employed, consisting of quantitative data collected from 400 respondents and qualitative insights derived from open-ended responses and interpretive analysis.Quantitative findings revealed that the overall level of habitual innovative behavior among local innovators was high ($\bar{X}$ = 3.80, S.D. = 0.45). The highest-scoring dimension was transparent and modern public service ($\bar{X}$ = 3.90), followed by initiative (3.85), adaptability (3.80), innovation communication (3.75), and implementation behavior (3.70). Multiple regression analysis indicated that only managerial support ($\beta$ = 0.269, $p < .05$) and proactive learning of personnel ($\beta$ = 0.272, $p < .05$) significantly predicted innovative behavior, while digital technology utilization and innovative organizational climate did not show significant influence.Qualitative findings highlighted that the most frequently recommended strategy was establishing an Innovation Space within LAOs, enabling staff to experiment with new ideas without fear of failure. Other key recommendations included fostering idea-exchange forums between agencies and communities and providing Design

Thinking training to enhance creativity and problem-solving. Integrated findings suggest that nurturing innovative behavior requires an enabling environment that supports experimentation, active learning, and strong managerial backing factors essential for driving LAOs toward sustainable Smart Locality development.

**Keywords:** Local Innovators, Innovative Behavior, Smart Locality, Public Sector Personnel in Maha Sarakham, Development Management

## Introduction

Innovation within local administrative organizations (LAOs) plays a vital role in improving citizens' quality of life and strengthening sustainable local governance (Khaenamkhaew, Onjun, Damrongwattana, & Prathum, 2023). In an era where information technology and the concept of the "Smart Locality" increasingly shape public-sector transformation, LAOs require personnel who possess the capability to initiate, develop, and apply innovations to enhance operational efficiency and effectively address area-specific challenges (Krang et al., 2024; Lim & Chuangchai, 2023).

However, the promotion of local-level innovation in Thailand continues to face structural constraints. These include centralized administrative systems, limited financial resources, insufficient digital competencies among personnel (Nua-amnat, Brahmakappa, Pumturian, & Soonthondachar, 2021; Namwong & Chansirisira, 2020), and organizational cultures that are not yet conducive to creativity or experimentation (Phimkoh, Tesaputa, & Somprach, 2015). Despite these challenges, some LAO personnel exhibit characteristics of local innovators—such as creativity, openness to change, continuous learning, and systemic problem-solving (Pintong & Worapongpat, 2024). These traits enable the development of innovations that effectively respond to community needs (Sirisawat & Chaiya, 2025).

Maha Sarakham Province, known for its strong educational and cultural foundations as well as active civic engagement, has become a fertile ground for various forms of local innovation (Sinjindawong, Nuchniyom, & Pakakaew, 2023). In particular, personnel in LAOs within Mueang District play increasingly important roles as local innovators who drive new initiatives and public-sector improvements (Charoensuk, 2022). This context makes the district a compelling setting for examining the innovative behavioral traits of LAO personnel,

along with individual and organizational factors that influence the development of local innovation (Singhalert, 2017). Insights from such an investigation can guide the formulation of strategic directions aimed at transitioning toward “Smart Local Government” in practical and sustainable ways (Thirawan, 2025).

Although previous studies on local innovation have provided valuable conceptual and descriptive insights, several critical knowledge gaps remain. First, empirical evidence on the actual levels of habitual innovative behavior among LAO personnel in Thailand is still limited. Second, the causal influence of key factors—such as managerial support, proactive learning, digital technology utilization, and the organizational innovation climate—on the innovative behaviors of local innovators has not been clearly established. Third, research has rarely integrated quantitative findings with qualitative, practitioner-based perspectives to generate strategic guidelines grounded in real operational contexts. The present study aims to address these gaps by examining the habitual innovative behaviors of LAO personnel in Mueang District, Maha Sarakham Province; analyzing the factors that influence these behaviors; and proposing strategic guidelines to support the advancement of Smart Locality based on integrated quantitative and qualitative evidence.

## Research Objectives

1. To examine the level of innovative behavior among personnel who serve as local innovators in local administrative organizations (LAOs) in Mueang District, Maha Sarakham Province.

2. To analyze the factors influencing the innovative behaviors and habitual traits of local innovators in developing innovations within the work processes of local administrative organizations.

3. To propose strategic guidelines for promoting and enhancing the innovative behaviors of local innovators in order to support the tangible development of “Smart Locality” within local administrative organizations.

## Literature Review

This study aims to understand the behavioral traits of local innovators who play a key role in creating innovation within local administrative organizations (LAOs). Accordingly, the literature review focuses on five core areas: (1) concepts of innovators and public sector innovation; (2) behaviors and traits of innovators; (3) the concept of Smart Local Government; (4) factors promoting innovation in local public administration; and (5) related research studies.

### Concepts of Innovators and Public Sector Innovation

An innovator refers to an individual with the ability to think creatively, adopt unconventional perspectives, and transform ideas into concrete outcomes that hold organizational or societal value (Worapongpat, 2024a). Within the public sector, innovators are not necessarily researchers or engineers; rather, they may be personnel who contribute to improving work processes, public service delivery, or communication methods with citizens, thereby enhancing efficiency and effectiveness (Worapongpat, 2024b).In the context of local governance, innovation may take the form of participatory administration (Worapongpat, Wongkumchai, & Anuwatpreecha, 2024), the use of technology in managing public services, or the design of community-based initiatives that address local problems in creative and context-sensitive ways (Worapongpat, Cai, & Wongsawad, 2024).

### Behaviors and Traits of Innovators

The behavioral traits of innovators represent a combination of attitudes, values, and positive behaviors that enable change and new ways of thinking (Worapongpat, 2025a). Key traits include creativity, cognitive flexibility, risk-taking, systems thinking, and

lifelong learning. Organizations with personnel who exhibit such qualities are often capable of developing sustainable innovations with structural and long-term impact (Worapongpat, 2025b, 2025c).

### The Concept of Smart Local Government

The notion of Smart Local Government extends from the concept of the Smart City, adapted to the local administrative level (Worapongpat, 2025d). Its core components include the utilization of information and communication technology (ICT), data-driven management, and citizen participation.

### Transparency and good governance

This concept emphasizes the creation of efficient, intelligent, and citizen-responsive local governance structures that directly address community needs (Worapongpat, 2025e, 2025f). Factors Promoting Innovative Behavior in Local Public Administration Previous studies have highlighted multiple factors that influence innovative behavior, including:Individual-level factors: such as critical thinking ability and a positive attitude toward change (Worapongpat & Song, 2025). Organizational-level factors: such as open and supportive leadership styles and organizational cultures that encourage creativity (Worapongpat &

Arunyakanon, 2025) Policy and environmental factors: such as decentralization, support from central government agencies, and academic networks (Worapongpat & Boonmee, 2025).

## Conceptual Framework

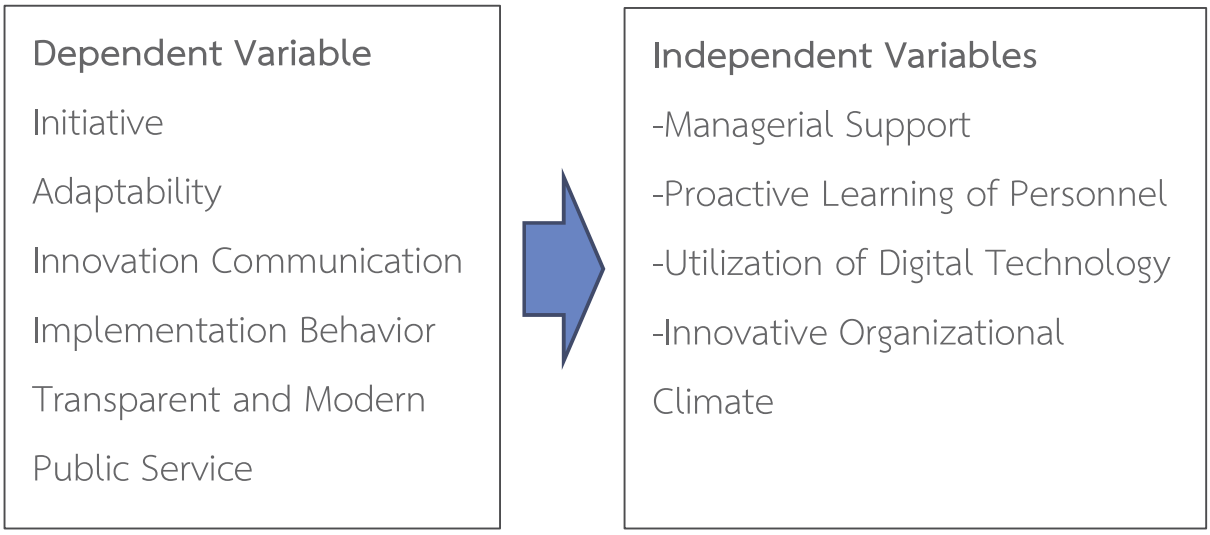


**Figure 1** illustrates the conceptual framework of the study.

## Research Methodology

This study employed a mixed-methods design, specifically a Sequential Explanatory Design (Creswell & Plano Clark, 2018). The research was conducted in two phases: Quantitative Phase: Collection and analysis of numerical data to examine levels of habitual innovative behaviors and the influence of managerial, individual, technological, and organizational factors.

Qualitative Phase: Follow-up qualitative inquiry designed to deepen understanding of the quantitative findings, clarify unexpected results, and explore how innovative behaviors manifest in daily work operations.

**Data Integration**

Integration occurred at two points

Connecting: Quantitative results were used to purposefully select participants for qualitative interviews (e.g., personnel with high or low innovative behavior scores).

Merging and Interpretation: Qualitative themes were merged with quantitative statistical results during the interpretation stage. This ensured that the explanations of key predictors were enriched with real-world examples, narratives, and contextual insights from LAO personnel.

This approach allowed the researcher to validate statistical trends, explain underlying mechanisms, and generate practical insights supporting Smart Local Government development.

### Population

The population consisted of personnel of Local Administrative Organizations (LAOs) in Mueang District, Maha Sarakham Province. These included:

- Municipal officials
- Sub-district municipalities
- Sub-district administrative organizations (SAOs)

### Sample

The sample included government officials, contract employees, and local civil servants working within the aforementioned LAOs.

The quantitative sample size was determined using Yamane's (1973) formula, based on population data from the Office of Local Administration Promotion, Maha Sarakham Province (e.g., a population of 500 required approximately 222 respondents).

For the qualitative phase, 10–15 key informants were selected based on purposeful sampling, using criteria derived from quantitative scores (e.g., high/low innovative behavior clusters).

**Research Instrument**

1. Quantitative Instrument: Questionnaire

The structured questionnaire consisted of four parts:

Section 1: Demographic information (gender, age, education, position, organizational type).

Section 2: Habitual innovative behaviors of local innovators: Initiative, Adaptability, Innovation communication, Implementation behavior, Transparent and modern public service.

Section 3: Influential factors:

Managerial support (X1)

Proactive learning of personnel (X2)

Utilization of digital technology (X3)

Innovative organizational climate (X4)

Section 4: Open-ended questions regarding further development of Smart Local Government.

Sections 2 and 3 used a five-point Likert scale.

2. Qualitative Instrument

A semi-structured interview guide was used to explore:

Real-world examples of innovative behaviors

Barriers and facilitators to innovation

Perspectives on digital transformation and smart governance

Contextual explanations for significant or non-significant statistical findings

### Instrument Development Process

The instruments were developed based on theories of public innovation, local governance, and smart local government.

Content validity was evaluated by three experts, and items with IOC ≥ 0.67 were retained.

A pilot test was conducted with LAO personnel outside the main sample.

Reliability was assessed using Cronbach's Alpha (acceptable threshold ≥ 0.70).

The qualitative interview guide was reviewed by experts to ensure clarity, relevance, and alignment with quantitative constructs.

### Data Collection

Formal permission was obtained from relevant agencies.

Questionnaires were distributed in paper and online formats.

Qualitative interviews were conducted after preliminary quantitative analysis.

Data were checked for completeness and consistency prior to analysis.

All qualitative interviews were audio-recorded (with consent), transcribed verbatim, and anonymized.

**Data Analysis**

Quantitative Analysis

Descriptive Statistics: frequency, percentage, mean, and standard deviation.

Inferential Statistics: Pearson's Correlation Analysis

Multiple Regression Analysis

Independent samples t-test and ANOVA (for demographic group comparisons)

Qualitative Analysis

A thematic analysis was applied using the following procedures:

Open coding to identify meaningful units.

Categorization into overarching themes.

Analytic memoing to link qualitative patterns with quantitative findings.

Extraction of illustrative quotes to enrich interpretation.

The analysis emphasized depth, focusing on experiences, perceptions, and organizational contexts rather than simple frequency counts.

### Data Integration and Interpretation

Final interpretation integrated both data strands:

Quantitative predictors (e.g., managerial support, digital utilization) explained by qualitative narratives showing real-life examples of innovation.

Qualitative themes helped interpret non-significant findings and reveal hidden organizational dynamics.

Integration strengthened the credibility and practical relevance of the findings for developing Smart Local Government in Maha Sarakham Province.

## Results

The findings revealed that the overall level of habitual innovative behavior among local innovators was high ($\bar{X}$ = 3.80, S.D. = 0.45). When considering each dimension, the results indicated that the highest mean score was found in *transparent and modern public service* ($\bar{X}$ = 3.90, S.D. = 0.58), followed by *initiative* ($\bar{X}$ = 3.85, S.D. = 0.62), *adaptability* ($\bar{X}$ = 3.80, S.D. = 0.67), *innovation communication* ($\bar{X}$ = 3.75, S.D. = 0.70), and *implementation behavior* ($\bar{X}$ = 3.70, S.D. = 0.66).

**Table 1** Levels of Habitual Innovative Behavior of Local Innovators

| Dimension | Mean ($\bar{X}$) | S.D. | Interpretation |
|---|---|---|---|
| Initiative | 3.85 | 0.62 | High |
| Adaptability | 3.80 | 0.67 | High |
| Innovation Communication | 3.75 | 0.70 | High |
| Implementation Behavior | 3.70 | 0.66 | High |
| Transparent and Modern Public Service | 3.90 | 0.58 | High |
| **Overall** | **3.80** | **0.45** | **High** |

Objective 2 : To analyze the factors influencing the behaviors and habitual traits of local innovators in developing innovations within organizational work processes. The results of multiple regression analysis showed that two factors significantly influenced habitual innovative behavior at the 0.05 level of significance, namely: Managerial Support ($\beta$ = 0.269, $p < 0.05$) Proactive Learning of Personnel ($\beta$ = 0.272, $p < 0.05$) Other variables, including *utilization of digital technology* and *innovative organizational climate*, did not significantly contribute to the prediction of innovative behavior.

**Table 2** Multiple Regression Analysis of Factors Influencing Habitual Innovative Behavior of Local Innovators

| Predictor | B | Std. Error | Beta | t | Sig. |
|---|---|---|---|---|---|
| Constant | 2.353 | 0.183 | - | 12.849 | 0.000 |
| Managerial Support (X1) | 0.175 | 0.031 | 0.269 | 5.622 | 0.000* |
| Proactive Learning of Personnel (X2) | 0.157 | 0.027 | 0.272 | 5.700 | 0.000* |
| Utilization of Digital Technology (X3) | -0.006 | 0.030 | -0.009 | -0.187 | 0.852 |
| Innovative Organizational Climate (X4) | 0.026 | 0.021 | 0.059 | 1.266 | 0.206 |

R = 0.440 | $R^2$ = 0.195 | Seest = 0.364

F = 23.166 | Sig. = 0.000*

*Significant at the 0.05 level

These results indicate that managerial support and proactive learning of personnel were the two most influential predictors of innovative behaviors among local innovators in Maha Sarakham LAOs. Conversely, digital technology adoption and innovative climate alone were not sufficient to significantly determine habitual innovative behaviors.

**Table 3** Recommendations for Developing and Promoting Innovative Behaviors of Local Innovators to Support the Concrete Advancement of Smart Local Government

| No. | Recommendation for Promoting Innovator Behaviors in LAOs | Frequency |
|---|---|---|
| 1 | Establish an “Innovation Space” within LAOs to allow personnel to experiment with new ideas | 42 |
| 2 | Promote forums for exchanging ideas between local agencies and the community | 36 |
| 3 | Provide training on “Design Thinking” for personnel | 33 |
| 4 | Utilize digital technology to support experimentation with new innovations | 28 |

From the table above, the most frequently suggested approach is the establishment of an Innovation Space within LAOs. This allows personnel to test and initiate new ideas without fear of failure. The second most recommended approach is the creation of forums for knowledge exchange between agencies and the community, which helps strengthen local innovation networks. Additionally, training in Design Thinking is emphasized to foster out-of-the-box thinking and creative problem-solving among personnel.

**Table 4** Comparative Analysis of Key Variables

| Variable / Analytical Aspect | Frequency / Score | Reason for High/Low Score | Academic Interpretation | Policy / Managerial Implication |
|---|---|---|---|---|
| Innovation Space | Highest (42) | 1) Local administrative organizations (LAOs) provide flexible spaces for experimentation and innovation development.<br>2) Personnel value opportunities for collaborative learning.<br>3) Local culture encourages participation. | Innovation spaces foster a sense of ownership and allow staff to test new ideas without fear of failure, promoting sustainable local innovation. | Establish co-working and learning spaces in all LAOs to nurture and incubate local innovation. |

Table 4 (Continued)

| Variable / Analytical Aspect | Frequency / Score | Reason for High/Low Score | Academic Interpretation | Policy / Managerial Implication |
|---|---|---|---|---|
| Digital Technology | Lower (28) | 1) Some personnel lack advanced digital skills.<br>2) Budget and infrastructure limitations.<br>3) Inequitable access to technology. | Although digital technology is critical for smart local governance, its practical implementation is constrained by resources and personnel readiness. | Invest in digital literacy, ICT infrastructure, and continuous hands-on training. |
| Executive Support | Relatively High | 1) Local executives recognize the importance of transitioning toward smart local governance.<br>2) Creative policies are implemented. | Policy-level support motivates personnel to initiate innovations. | Strengthen creative leadership and support for innovation-driven decision making. |

Table 4 (Continued)

| Variable / Analytical Aspect | Frequency / Score | Reason for High/Low Score | Academic Interpretation | Policy / Managerial Implication |
|---|---|---|---|---|
| Proactive Learning | Medium (33) | 1) Some personnel are highly motivated, while others focus on routine duties.<br>2) Skill development systems are not continuous. | Highlights skill imbalances within the organization. | Develop continuous learning programs and e-learning platforms suitable for local contexts. |
| Organizational Innovation Climate | Medium to High | 1) Opportunities exist for knowledge exchange.<br>2) Hierarchical structures remain a constraint. | Organizational culture is evolving but not yet fully pervasive. | Adopt Agile organizational structures to reduce hierarchical barriers and promote innovation. |

## Analytical Summary

- Innovation Space received the highest score because it directly fulfills personnel needs for learning, experimentation, and generating new value.
- Digital Technology scored lower due to limitations in infrastructure, budget, and staff competencies, making widespread adoption challenging despite its critical role in smart local governance.

## Discussion

The findings for Research Objective 1 revealed that the overall habitual innovative behaviors of local innovators in Maha Sarakham's LAOs were at a high level (Mean = 3.68, S.D. = 0.40). Notably, the dimensions of modern and transparent public service and innovation communication scored higher than other aspects. This suggests that LAOs in the province may have increasingly emphasized transparency, service modernization, and communication practices aligned with digital public service reforms. The results indicate that personnel tend to integrate innovation into their routine tasks when organizational cultures visibly encourage openness, accountability, and information-sharing.The findings are consistent with prior research, which

argued that innovative behaviors in the public sector tend to flourish under supportive structures such as clear communication channels, transparency mechanisms, and learning-oriented environments (Phon Phuangpanya, 2024; Xunan & Worapongpat, 2023; Chompotjananan & Vichit-Vadakan, 2022). While these findings align with existing literature, they provide additional localized evidence within a provincial Thai LAO context but do not yet constitute a fully novel theoretical contribution.

For Research Objective 2, the analysis indicated that innovation in work practices (X1) and development of new approaches (X2) significantly predicted habitual innovative behaviors ($p < 0.05$), whereas technology adoption and process improvement did not show statistically significant effects.A key implication is that the internal, individual-driven factors such as personal initiative, creativity, and willingness to experiment—appear to exert a stronger influence on daily innovative behaviors than external system-driven factors, which may be constrained by budget allocation cycles, bureaucratic structure, procurement regulations, and technological readiness. In the context of LAOs, frontline personnel often face limitations in adopting new technologies that are beyond their decision-making authority.These results are consistent with studies

suggesting that intrinsic motivation, self-driven learning, and personal initiative strongly predict innovative behavior, particularly in hierarchical bureaucratic systems where structural limitations constrain systemic innovation (Chantarasombat, 2021; Dongling & Worapongpat, 2023; Yasuttamathada & Worapongpat, 2025).The findings should be interpreted with caution due to the moderate–low $R^2$ value of the regression model. This suggests that while X1 and X2 are significant predictors, they account for only part of the variance in innovative behavior. A substantial portion of influencing factors remains unexplained. These may include organizational culture, leadership style, inter-organizational networks, political influences, community expectations, and resource disparities none of which were incorporated into the current model.Therefore, the findings indicate associations rather than comprehensive causal explanations, and the study should be positioned as offering supportive evidence rather than claiming a definitive or broad new theoretical insight.

For Research Objective 3, respondents recommended establishing organizational innovation spaces (e.g., Innovation Sandboxes), providing Design Thinking workshops, and promoting data-driven decision-making. These practical suggestions highlight

that personnel perceive innovation as requiring tangible support systems rather than merely policy mandates. The need for structured experimentation spaces suggests that personnel may feel constrained by traditional rules and need “protected zones” to test ideas safely.These recommendations align with research emphasizing the importance of institutionalized support mechanisms for public sector innovation (Gqamane & Taylor, 2013; Zhou, Worapongpat, & Liuyue, 2024). They also resonate with the concept of a “safe innovation environment,” where individuals can experiment without punitive consequences (JianFeng & Worapongpat, 2024). Still, the present study’s qualitative findings, while supportive of these arguments, should be interpreted as context-specific practical insights rather than broad generalizations.While the study reinforces existing knowledge regarding intrinsic motivation and supportive structures in fostering innovation within LAOs, the findings should be understood within the constraints of:The moderate–low $R^2$,The reliance on self-reported measures,The provincial-level scope (Maha Sarakham only), and The limited qualitative depth relative to the broader complexity of public innovation ecosystems.Thus, the study contributes contextual, practice-based evidence rather than asserting large-scale theoretical advancement.

## New Knowledge from the Study

rom the study titled the researcher synthesized the key insights into a conceptual diagram, as illustrated in Figure 2. These insights represent contextual and practice-based understandings, rather than universal theoretical claims, and are grounded in empirical data obtained from personnel in local administrative organizations (LAOs) in Maha Sarakham Province.

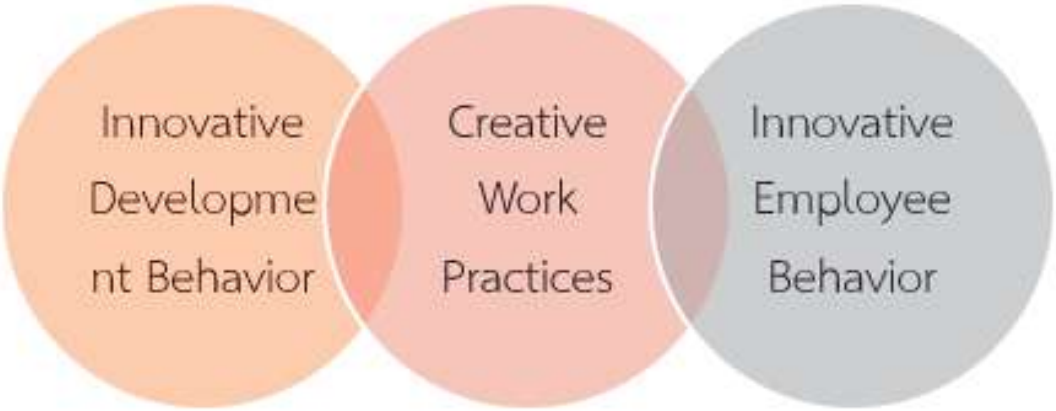


**Figure 2** Conceptual Model Illustrating the Influencing Factors and Behavioral Patterns of Local Innovators

From Figure 2, it can be seen that habitual behaviors related to developing new approaches and creative work practices show a positive influence on innovative behavior. However, this effect is partial, as the model explains only 19.5%

of the variance.The diagram synthesizes the contextual relationships among the studied factors but indicates the need for further exploration of additional variables in future research. The linkage between local innovators' habitual behaviors and Smart Local Government goals appears as a practical tendency rather than a definitive theoretical conclusion.The model indicates that individual-level factors play a more prominent role than technological factors, reflecting structural constraints within local administrative organizations.

This research provides synthesized, context-specific insights rather than establishing new universal theories. The conceptual diagram (Figure 2) presents how selected factors relate to the habitual innovative behaviors of local personnel under the empirical constraint that the model predicts only a limited proportion of variance ($R^2$ = 0.195). These insights highlight potential pathways for enhancing innovation practices in LAOs while acknowledging the need for further research on additional determinants.

## Recommendations

1. Recommendations for Applying the Research Findings

1.1 Based on the Findings of Objective 1

The study revealed that the habitual behaviors of local innovators were generally at a high level, particularly in modern and transparent public service delivery and innovation communication. Therefore, relevant agencies—such as Local Administrative Organizations (LAOs) and the Provincial Local Administration Promotion Office—should:Implement continuous capacity-building programs to strengthen innovative habits, especially in innovation communication and personnel participation at all levels. Establish a monitoring and evaluation system to track innovative behaviors among personnel, providing an evidence-based foundation for long-term development planning.

1.2 Based on the Findings of Objective 2

The factors significantly influencing innovative behavior were innovation in work practices and the development of new approaches. Therefore, relevant agencies should:

Design policies and organizational mechanisms that encourage personnel to create new approaches in their work, such as establishing an organizational-level innovation sandbox.Allocate sufficient budgets and resources to support personnel in initiating creative projects that align with provincial strategic goals.

1.3 Based on the Findings of Objective 3

Respondents emphasized the importance of raising awareness, organizing participatory activities, and fostering positive attitudes toward initiating innovation. Therefore, relevant agencies should:Conduct awareness-raising activities for civil servants and local personnel to strengthen understanding of innovation's role in local development.Promote reward systems or incentives for individuals demonstrating outstanding innovative behaviors, enabling them to serve as role models and motivating others within the organization.

2. Recommendations for Future Research

This study highlights that habitual behaviors of local innovators are essential for driving operational-level innovation in Local Administrative Organizations, with implications for developing Smart Local Governments in a concrete and practical manner. Future research should:Examine organizational culture, innovation management practices, or psychological incentives that influence innovative behavior among personnel. Compare the behaviors of local innovators across different regions to identify contextual factors and appropriate support mechanisms. Employ mixed-methods research designs to gain deeper insights through qualitative approaches such as interviews, focus groups, or case studies.

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