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ШІ ТА ОРГАНІЗАЦІЙНА ГНУЧКІСТЬ: ЧИ МОЖЕ ШІ ПОДОЛАТИ ЗАКОНИ ЛАРМАНА ОПОРУ ЗМІНАМ?

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AI AND ORGANIZATIONAL AGILITY: CAN AI OVERCOME LARMAN'S LAWS OF RESISTANCE?

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Анотація. *Дослідження спрямоване на з'ясування, чи виступає впровадження штучного інтелекту (ШІ) в гнучких (Agile) організаціях справжнім каталізатором трансформації, чи навпаки – вбудовується у наявні структури, підсилюючи типові патерни опору, описані «Законами організаційної поведінки Лармана». Спираючись на теоретичний фреймворк, що поєднує підходи до agile-трансформації, організаційних змін і взаємодії «людина–ШІ», проаналізовано опитування 97 практиків з команд розробки ПЗ, продуктового менеджменту та операцій. Анкета оцінює три конструкти: рівень використання ШІ, задоволеність інструментами ШІ та впевненість у точності й надійності результатів, згенерованих ШІ. Розподіли відповідей свідчать про широке, але ще не глибоке впровадження: 79% користуються ШІ для конкретних задач або регулярно (з адаптацією результатів), тоді як лише 3% декларують глибоку інтеграцію. Задоволеність є високою (≈67% задоволені чи дуже задоволені), тоді як рівень впевненості переважно помірний (54% – помірно впевнені; 14% – дуже впевнені). Попередні асоціації демонструють позитивний зв'язок між інтенсивністю використання ШІ, задоволеністю інструментами та впевненістю у результатах ШІ. Отримані патерни узгоджуються з інкрементним шляхом впровадження, коли ШІ застосовується переважно до чітко окреслених, низькоризикових задач без зміни розподілу повноважень і ролей — що емпірично відображає закони Лармана. Для інтерпретації результатів запропоновано концептуальну модель, у якій лідерство й управління (governance) модерують взаємозв'язок між впровадженням ШІ та організаційною гнучкістю: ШІ підсилює гнучкість за умови структурного передизайну та відповідального управління, але ризикує стати поверхневим за незмінних структур. Наукова новизна полягає у (і) екстраполяції законів Лармана на епоху ШІ на основі емпіричних даних з agile-середовища; (іі) операціоналізації індикаторів ШІ-підсиленої гнучкості; (ііі) конкретизації управлінських імплікацій, що узгоджують agile-принципи з відповідальним ШІ. Окреслено обмеження набору даних та напрями подальших лонгітюдних і мультиметодних досліджень.*

Ключові слова: *впровадження ШІ; закони Лармана; організаційна гнучкість; agile-трансформація; лідерство; управління; взаємодія людина–ШІ.*

Формули: 2; Рис.: 3; Табл.: 1; Бібл.: 12

Abstract. *This study investigates whether the adoption of artificial intelligence (AI) in Agile organizations acts as a genuine catalyst of transformation or is co-opted by existing structures, thereby reinforcing resistance patterns described by Larman's Laws of Organizational Behavior. Building on a theory-driven framework that integrates Agile transformation, organizational change, and human–AI collaboration, we analyze a survey of 97 practitioners across software, product and operations roles. The survey captures three constructs: level of AI usage, self-reported satisfaction with AI tools, and confidence in the accuracy and reliability of AI-generated outputs. Descriptive distributions indicate broad, but not yet deep, adoption: 79% use AI either for specific tasks or regularly with customization, whereas only 3% report deep, consistent integration. Satisfaction is high (~67% satisfied or very satisfied), while confidence is mostly moderate (54% moderately confident; 14% very confident). Exploratory associations suggest that higher AI usage and higher satisfaction are positively related to confidence in AI outputs. These patterns are consistent with an incremental adoption path in which AI is primarily applied to bounded, low-risk tasks, avoiding disruption to decision rights and role boundaries—an empirical manifestation of Larman's Laws. To explain these findings, we propose and visualize a*

conceptual model in which leadership and governance moderate the relationship between AI adoption and organizational agility: AI enables agility when accompanied by structural redesign and responsible governance, but risks becoming superficial when inserted into unchanged structures. The article contributes by (i) extending Larman's Laws to the AI era with empirical evidence from agile settings; (ii) specifying measurable indicators for AI-enabled agility; and (iii) outlining managerial implications that reconcile agile principles with responsible AI. We discuss limitations of the dataset and propose directions for longitudinal and multi-method research on human–AI teaming, leadership and structural change.

***Keywords**: AI adoption; Larman's Laws; organizational agility; agile transformation; leadership; governance; human–AI collaboration.*

Formulas: 2; Figures: 3; Tab.: 1; Bibl.: 12

Introduction. Agile organizations operate under persistent uncertainty and must adapt rapidly to market and technological change. Artificial intelligence (AI) promises to amplify agility by accelerating information processing, augmenting decisions, and automating routine work (Raisch & Krakowski, 2021; McKinsey & Company, 2023). At the same time, global studies reveal a paradox: while more than 70% of firms report experimenting with AI, only 20% achieve measurable business impact beyond pilot projects (McKinsey & Company, 2023). This gap underscores the challenge of translating technological adoption into organizational transformation. Agile enterprises, which are already structured for iteration and responsiveness, appear to be fertile ground for AI deployment. Yet they are also subject to structural inertia that limits change, as articulated by Larman's Laws (Larman & Vodde, 2016). Thus, agile organizations represent both the best-case and worst-case scenario for assessing whether AI can disrupt or merely reinforce existing practices.

Literature Review. Larman and Vodde emphasized that structural resistance is a near-universal property of large-scale agile transformations (Larman & Vodde, 2016). These insights, later summarized as "Larman's Laws," assert that organizations optimize for preserving existing roles and status distributions rather than embracing disruptive change. Empirical research supports this: a systematic review by Dikert et al. identified management resistance, legacy processes, and unclear goals as recurring obstacles in agile scaling (Dikert, Paasivaara, & Lassenius, 2016).

Parallel literature explores barriers to AI adoption. Studies in psychology and decision sciences reveal algorithm aversion, where users reject algorithmic recommendations after observing even minor errors (Dietvorst, Simmons, & Massey, 2015). Other scholars point to "algorithm appreciation," where under certain conditions, individuals prefer algorithmic judgments over human ones (Logg, Minson, & Moore, 2019). Trust in AI systems is thus conditional, shaped by transparency, context, and experience (Zhang & Sheng, 2022; Vakili & McGahan, 2023). This has direct implications for agile settings, where rapid iteration relies on both confidence in tools and willingness to experiment.

From a strategic perspective, AI is often discussed in relation to dynamic capabilities theory (Teece, 2007). Firms need the ability to sense opportunities, seize them, and reconfigure assets. Teece's framework has been widely applied to explain agility, and scholars now extend it to digital transformation and AI adoption (Microsoft & GitHub, 2023). Similarly, research highlights that AI integration is most effective when tied to organizational learning processes, not simply automation (Vakili & McGahan, 2023).

In addition, research on *human–AI interaction* emphasizes that adoption success depends not only on technical accuracy but also on the design of user experiences that support trust, transparency, and effective collaboration. Amershi et al. proposed 18 guidelines for human–AI interaction that highlight the need for systems to provide timely feedback, support error recovery, and evolve with user needs (Amershi et al., 2019). These principles are directly relevant to agile

organizations, where iterative learning and user-centered design are central practices.

Few studies explicitly connect AI adoption with agile frameworks or with Larman's Laws of resistance. This study therefore fills an important gap: it empirically investigates whether AI strengthens agility or is constrained by the very resistance mechanisms agile transformations aim to overcome.

Research Objectives and Hypotheses. Objective 1: examine how AI adoption interacts with resistance patterns identified by Larman's Laws.
Objective 2: identify whether AI enables or hinders structural and cultural agility.
Objective 3: determine leadership and governance conditions that influence this dynamic.
Objective 4: develop a conceptual model of AI as disruptor vs. reinforcer.
H1: Higher AI adoption correlates with increased confidence in AI outputs.
H2: Greater satisfaction with AI tools predicts higher confidence in AI outputs.
H3: Deep integration of AI is rare and incremental in early stages of transformation.
H4: AI is used more in bounded, low-risk tasks than in core decision rights.

Methods. The dataset derives from a practitioner survey (N=97) across multiple agile software and product organizations. Respondents represented Scrum Masters, Product Owners, Developers, Designers, QAs, DevOps, Data Engineers, reflecting a cross-section of agile roles. Questions measured three constructs: (i) satisfaction with AI tools, (ii) confidence in AI outputs, and (iii) self-reported level of AI usage. Each item used ordinal categories (e.g., Neutral, Satisfied, Very Satisfied) aligned with prior adoption research (Dietvorst, Simmons, & Massey, 2015; Vakili & McGahan, 2023).

Responses were encoded into ordinal values and analyzed with descriptive statistics and correlations. This approach allows initial exploration of associations while avoiding the assumption of continuous measurement. A conceptual model was also developed, positioning leadership and governance as moderators of the relationship between AI adoption and organizational agility.

Analytical Framework and Formulas. To quantify associations, we use standard measures of linear association and a simple explanatory model. The correlation coefficient r between ordinal encodings X and Y given by:

$$r_{XY} = \Sigma_i ((x_i - \bar{x})(y_i - \bar{y})) / \sqrt{(\Sigma_i (x_i - \bar{x})^2 \cdot \Sigma_i (y_i - \bar{y})^2)} \quad (1)$$

A parsimonious model of confidence (Conf) as a function of usage (Use) and satisfaction (Sat) is:

$$Conf_i = \beta_0 + \beta_1 \cdot Use_i + \beta_2 \cdot Sat_i + \varepsilon_i \quad (2)$$

Results. Results indicate broad but shallow AI adoption. A majority of respondents (79%) use AI for task-specific or regular purposes, yet only 3% report deep integration. This supports H3: integration remains incremental. Satisfaction levels were high, with 67% satisfied or very satisfied, consistent with H2. Confidence, however, was predominantly moderate, supporting H1 but also suggesting limits to trust.

The correlation analysis revealed positive associations: usage with confidence ($r \approx 0.41$), satisfaction with confidence ($r \approx 0.41$), and usage with satisfaction ($r \approx 0.44$). These moderate relationships suggest that while adoption, satisfaction, and confidence are interrelated, other factors—such as leadership and governance—likely influence deeper trust and agility outcomes. Compared to GitHub Copilot studies (Logg, Minson, & Moore, 2019), which found large productivity gains, our findings suggest that adoption without structural redesign yields incremental rather than transformative benefits.

Table 1

Correlations among usage, satisfaction and confidence

	Usage	Satisfaction	Confidence
Usage	1.00	0.44	0.41
Satisfaction	0.44	1.00	0.41
Confidence	0.41	0.41	1.00

Note. Ordinal encodings: Usage (1–5), Satisfaction (1–5), Confidence (1–4).
Source: developed by the Author

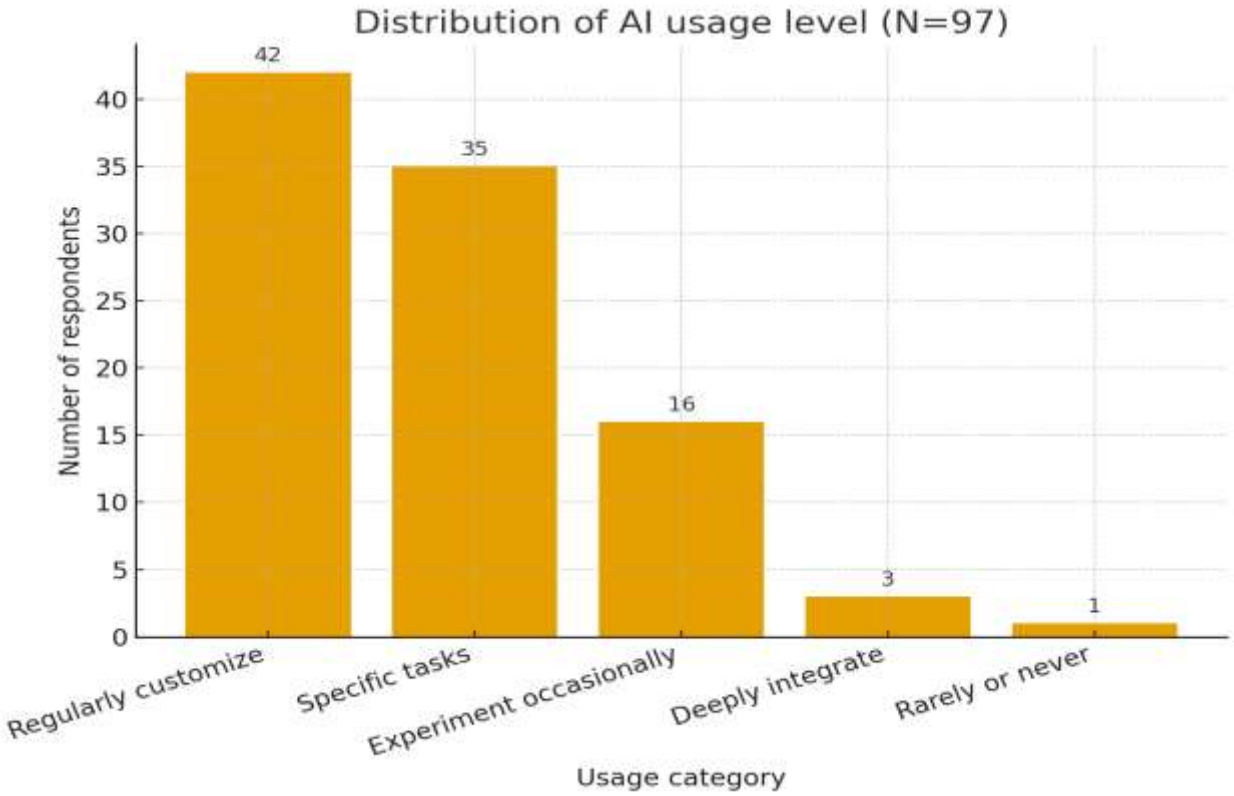

Fig. 1. Distribution of AI usage level (N=97)
Source: developed by the Author

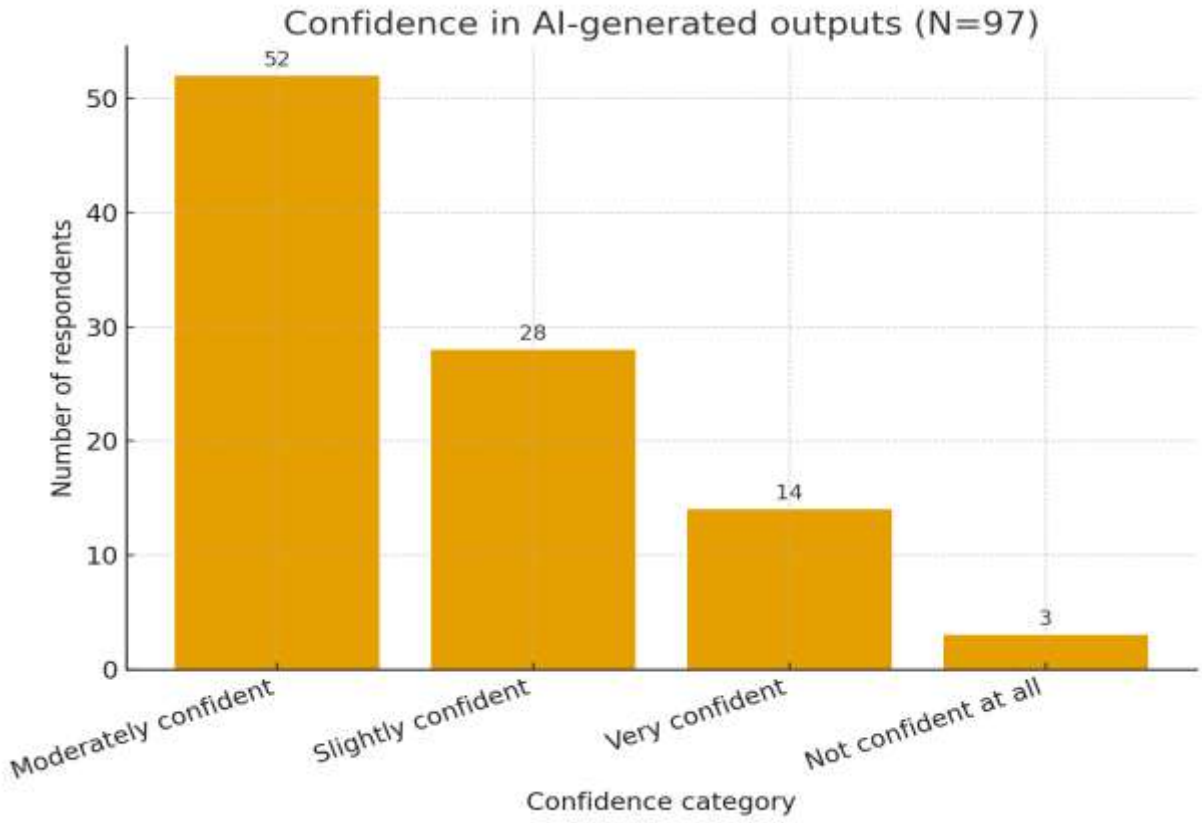

Fig. 2. Confidence in AI-generated outputs (N=97)
Source: developed by the Author

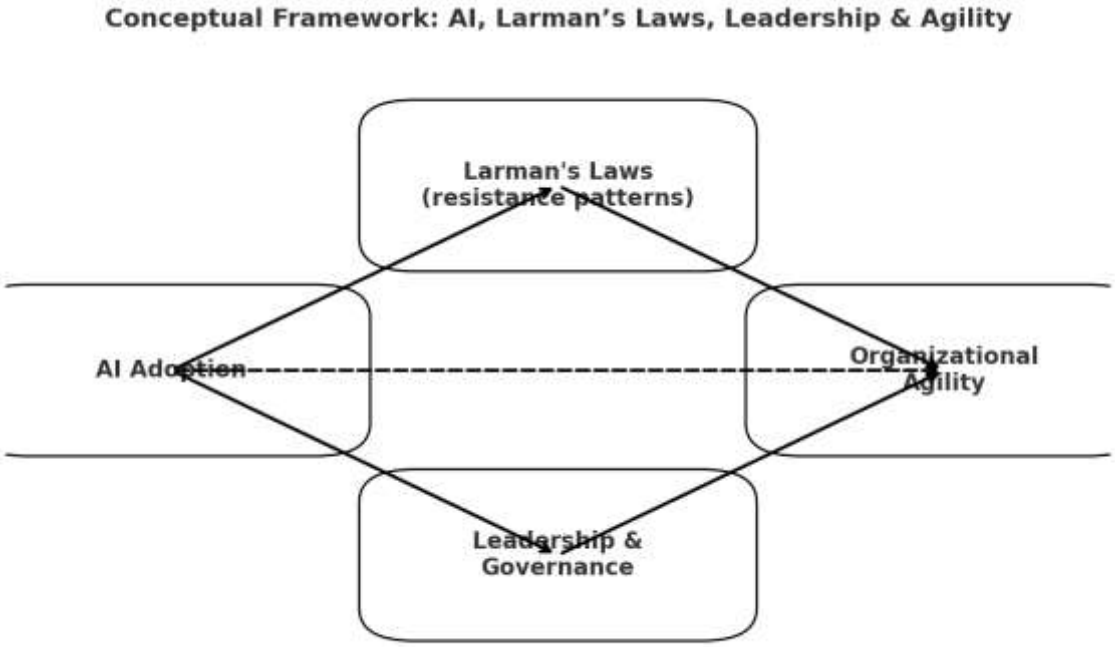

Fig. 3. Conceptual framework: AI, Larman's Laws, leadership & agility
Source: developed by the Author

Discussion. Findings support hypotheses H1 and H2: adoption and satisfaction both raise confidence. Yet H3 and H4 show that adoption is bounded to safe, low-risk tasks, aligning with Larman's Laws (Larman & Vodde, 2016). This suggests AI is

more likely to augment existing workflows than to trigger disruptive transformation.

From a theoretical perspective, this creates an automation–augmentation paradox (Microsoft & GitHub, 2023): organizations embrace AI where it enhances efficiency but resist using it to alter decision rights or governance. In agile contexts, where autonomy and empowerment are central, the paradox becomes sharper. Unless leadership actively reconfigures structures, AI may become a "veneer of agility," improving throughput but leaving core power dynamics intact. This echoes prior warnings about "fake agile" transformations that fail to change management behavior (Dikert, Paasivaara, & Lassenius, 2016).

Governance and leadership thus emerge as critical moderators. Research on dynamic capabilities (Teece, 2007; Edmondson, 1999) emphasizes sensing, seizing, and reconfiguring. Our findings suggest that organizations are currently "sensing" and partially "seizing" AI opportunities but are reluctant to "reconfigure." Without reconfiguration, agility is constrained, and AI's potential is under-realized.

Managerial Implications. Managers should treat AI adoption not as a tool upgrade but as an organizational design challenge. First, select use cases that meaningfully alter decision flows rather than only automating repetitive work. Second, foster psychological safety to encourage experimentation with AI outputs (Edmondson, 1999). Third, establish lean governance that balances speed with accountability, addressing issues like bias and reliability (Zhang & Sheng, 2022). Fourth, invest in training and communities of practice to build shared competence. Finally, align incentives to reward teams that integrate AI responsibly into agile workflows.

Furthermore, managers should not only focus on governance and structural redesign but also ensure that AI systems are introduced following established human–AI interaction guidelines (Amershi et al., 2019). These emphasize designing for transparency, supporting user feedback, and enabling iterative adaptation, which align closely with agile values. Applying such guidelines increases user trust and facilitates more meaningful integration of AI into daily workflows.

Limitations and Future Research. This study has limitations. The survey is cross-sectional and self-reported, limiting causal inference. Sample size (N=97) is sufficient for exploratory patterns but not generalizable across industries. Furthermore, we focus on perceptions of satisfaction, usage, and confidence without direct performance metrics.

Future research should employ longitudinal and multi-method designs. Ethnographic studies could observe human–AI collaboration in daily agile practices. Field experiments could test how governance interventions alter adoption trajectories. Comparative studies across cultural and sectoral contexts would also be valuable, given varying attitudes toward AI. Such work would deepen understanding of when AI adoption translates into genuine agility

Conclusions. AI adoption in agile organizations is expanding but remains constrained. Confidence grows with usage and satisfaction, yet adoption is bounded to safe tasks. This reflects Larman's Laws of resistance (Larman & Vodde, 2016). Only when leaders integrate AI with governance, structural redesign, and learning processes can genuine agility emerge. Otherwise, AI risks becoming an efficiency tool mislabeled as transformation. Future work should examine how leadership interventions can shift this trajectory, ensuring that AI complements rather than reinforces organizational inertia (McKinsey & Company, 2023).

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