BETWEEN PRODUCTIVITY BOOSTER AND STRUCTURAL RESISTANCE: A TRAJECTORY AND LIMIT OF AGILE GOVERNANCE

Oscar Radyan Danar [*], Asti Amelia Novita [**], Tommy Anggriawan [**], Eva Fadilah Ramadhani [***]

* *Corresponding author*, Faculty of Administrative Science, University of Brawijaya, Malang, Indonesia
Contact details: University of Brawijaya, Mt. Haryono Street, No. 163, Malang City, East Java 65145, Indonesia
** Faculty of Administrative Science, University of Brawijaya, Malang, Indonesia
*** Department of Statistics, University of Brawijaya, Malang, Indonesia

OPEN ACCESS

How to cite this paper: Danar, O. R., Novita, A. A., Anggriawan, T., & Ramadhani, E. F. (2024). Between productivity booster and structural resistance: A trajectory and limit of agile governance [Special issue]. *Journal of Governance & Regulation, 13*(1), 341–349. https://doi.org/10.22495/jgrv13i1siart8

ISSN Print: 2220-9352
ISSN Online: 2306-6784

Received: 25.03.2023
Accepted: 29.02.2024

JEL Classification: H1, H5, H7
DOI: 10.22495/jgrv13i1siart8

Abstract

The organization competes to increase its productivity by implementing a form of governance that is agile to technological changes. However, in its implementation, challenges inevitably arise, such as resistance to change, especially in terms of organizational structure. This study aims to examine the effect of agile governance, as proposed by Luna et al. (2015), consisting of six sub-variables (*environmental factors*, *moderator factors*, *agile capabilities*, *governance capabilities*, *business operations*, *value delivery*), on structural resistance (Kumar & Kant, 2006). This study uses a quantitative approach. Data were obtained by distributing questionnaires to 400 civil servants in Indonesia. Data were analyzed using partial least squares structural equation modeling (SEM-PLS) with the help of R software. The results showed that *environmental factors, moderator factors*, and *agile capabilities* have a negative and significant effect on structural resistance. On the other hand, *business operations* and *value delivery* have a positive and significant effect on structural resistance. Meanwhile, *governance capabilities* do not have a significant effect on the structural resistance of public-sector organizations. These findings contribute to the understanding of the challenges associated with implementing agile governance and highlight the importance of addressing resistance to change, particularly in terms of organizational structure.

Keywords: Agile Governance, Productivity Booster, Structural Resistance, Civil Servants, Public-Sector Organizations

Authors' individual contribution: Conceptualization — O.R.D.; Methodology — T.A. and E.F.R.; Software — E.F.R.; Validation — A.A.N. and T.A.; Formal Analysis — O.R.D. and A.A.N.; Resources — O.R.D. and A.A.N.; Data Curation — T.A. and E.F.R.; Writing — Original Draft — O.R.D., A.A.N., T.A., and E.F.R.; Writing — Review & Editing — O.R.D., A.A.N., T.A., and E.F.R.; Visualization — E.F.R.; Supervision — O.R.D.; Project Administration — A.M.N. and T.A.

Declaration of conflicting interests: The Authors declare that there is no conflict of interest.

1. INTRODUCTION

In this era, where the role of technology is increasingly important, competition between organizations is getting higher. Porter (1980) pointed out that competitiveness is defined by the productivity with which a nation utilizes its human, capital, and natural resources. Therefore, in

this case, every organization will strive to achieve better output than its competitors. As a result, this will drive productivity from within the organization. In this scenario, information technology (IT) governance, through which corporate governance is applied, has emerged as an option for effective management in organizations (Beck et al., 2001). Good corporate governance has capabilities such as flexibility, responsiveness, and adaptability, as well as an effective and responsive sense of coordination across multiple business units. These mentioned capabilities belong to the agility paradigm (Miceli et al., 2021). Organizational agility is defined as a learned, permanently available dynamic capability that can be performed to a necessary degree in a quick and efficient fashion, and whenever needed to increase business performance in a volatile market environment (Walter, 2021).

The basic concept of "agile" was first introduced by a group of experts from the Iacocca Institute at Lehigh University in the United States in 1991. Experts observed that the business environment is changing rapidly, exceeding the adaptability of traditional organizations. Thus, it is deemed necessary to develop a new system that can encourage the company to continue to grow and have a competitive advantage in facing local and global competition (Stachowiak & Oleśków-Szłapka, 2018). Agile governance has been proposed by Cheng et al. (2009), Luna et al. (2014, 2015, 2020), Qumer (2007), as the wide application of principles and values of agile software development by Beck et al. (2001). Qumer (2007) defined agile governance as a process with the aim of maximizing the available resources with strategic alignment of objectives, performance, and risk management. An effective agile governance approach can facilitate an organization in achieving productivity boost. Anwar et al. (2016) also mentioned that the implementation of agile governance succeeded in reducing the frequency of employee reworking. With fewer employees doing rework, the efficiency and effectiveness of work will increase, thereby increasing productivity boosters in an organization.

However, in its implementation phase, there are still many challenges when implementing agile governance. This was pointed out by Lacerda and Furtado (2018) where there are some barriers to be faced during the adoption of agile methods, one of which is resistance to change. In addition, there is also a problem that, in implementing agile governance, it is difficult to impose a new process on experienced employees who already have a traditional mindset (Diebold & Theobald, 2018; Dikert et al., 2016). This is especially the case when agile governance is implemented in public-sector organizations that are bound by regulations and have a rigid structure. When a public-sector organization wants to make a change, much consideration is needed regarding the changes to be made in accordance with the applicable regulations. Thus, it takes a longer time in the adaptation process (MacCarthaigh et al., 2012). Almeida (2017) also stated that the transition to an agile process affects all structures in an organization, e.g., the development team, the departments, and the management. Resistance may then be found in all of these elements because, from the implementation, there are different structures and layers of people who are used to their daily habits at work and cannot adapt to the sudden rapid changes.

The challenges in implementing agile governance in public-sector organizations need to be explored further. In this case, there is still no prior study that explains in more detail the effect of agile governance when implemented in public-sector organizations, especially its effect on structural resistance. This study used the agile governance theory proposed by Luna et al. (2015). Agile governance consists of six dimensions, namely environmental factors, moderator factors, agile capabilities, governance capability, business operations, and value delivery. The concept of agile governance in this study was modified first so that it is more in line with the norms that apply in public-sector organizations.

The results of this study are expected to contribute to the development of the agile governance theory and can be used as a reference for organizations that are trying to implement agile governance in their activities. This research can also be a valuable resource for policymakers and leaders looking to transform a rapidly changing and dynamic governance framework. By incorporating the results into decision-making processes, organizations can increase agility and encourage a more adaptive and dynamic governance approach responsiveness that is in line with current challenges and opportunities.

This paper follows a coherent structure. It begins with an introduction in Section 1 that outlines the study's objective. Section 2 explores relevant literature on agile governance and structural resistance. Section 3 explains the quantitative-method approach used. The results of the analysis are presented in Section 4 and interpretation of the findings are discussed in Section 5, followed by a brief conclusion in Section 6 that summarizes the main points and offers recommendations.

2. LITERATURE REVIEW

2.1. Agile governance

According to Luna et al. (2015), agile governance is the ability of an organization to adapt and respond quickly and sustainably to perceived changes in the organizational environment. This capability is acquired through the co-coordination of agile capabilities with governance capabilities. This is expected to provide better value and results/output in a short time. The implementation of agile governance can help organizations achieve better results in their implementation, thus reducing costs and time while increasing the quality and success rate of organizational practices. Agile governance suits organizations that need to operate in a competitive environment, as well as those that need to grow sustainably, achieve greater enterprise agility, and support their overall strategy. One way that agile governance can be applied in the public sector is through the use of agile methodologies in government projects. Agile methodologies prioritize customer needs, iterative development, and continuous improvement, which can be beneficial in developing public services that are relevant, effective, and responsive to citizens' needs (Ylinen, 2021).

Agile governance has been proposed by several authors, including Qumer (2007), Cheng et al. (2009), and Luna et al. (2014, 2015). At the same time, its concept has evolved over time. The first two definitions (Qumer, 2007; Cheng et al., 2009) were focused on agile software development, while the third definition (Luna et al., 2014, 2015) was proposed as a concept of agile governance that encompasses multidisciplinary phenomena related. Luna et al. (2015) identified six theoretical units that can describe agile governance phenomena, namely:

1) The effects of *environmental factors,* which conceptualize the effects sensed by the organizational context as a result of those caused by the external environment in which the organizational context resides. This factor consists of four indicators, including 1) the level of technological influence on the environment; 2) the level of influence of regulatory agencies; 3) the intense level of competition felt in the environment; 4) the level of influence of economic actors and related conditions.

2) The effects of *moderator factors,* which conceptualize the effects sensed by the organizational context as a result of those caused by the moderator factors forming part of this context. The nature of these factors varies according to the particularity of each organizational context. This factor consists of six indicators, including 1) the rate of environmental change; 2) organizational culture; 3) the style of leadership practiced; 4) organizational performance management; 5) business processes adopted; 6) the quality of human resources.

3) *Agile capabilities,* which are the ability to seek, acquire, develop, practice, and make changes related to the organizational context. This organizational capability can be seen from 1) the ability of the organization to make the necessary changes to respond effectively; 2) the ability of the organization to maximize the resources it has; 3) the ability to react to change; 4) the organizational ability to adapt and/or respond to changing circumstances or the environment.

4) *Governance capabilities,* which are the ability to acquire, develop, apply, and evolve competencies related to the way an organizational context is conducted, administered, or controlled, including the relationships between different parties involved and the aims for which a society is governed. This dimension is reflected in four indicators, including 1) the organizational ability to ensure alignment between strategy and action; 2) the ability of the organization to make the best decision from the available options; 3) organizational capability to establish ongoing mechanisms; 4) the ability of the organization to comply with the rules and act according to mutual agreement.

5) *Business operations,* which conceptualize the set of organized activities involved in the day-to-day functions of the business, conducted for the purpose of generating value delivery. This dimension is reflected in the organization's ability to identify and adopt best practices to be implemented within the organization.

6) *Value delivery,* which conceptualizes the ability to generate results for the business by means of the delivery of value, including all forms of value that determine the health and well-being of the organization in the long run. This dimension is reflected in the ability of the organization to embed utility in the services provided.

2.2. Structural resistance

Managing innovation requires careful consideration of change management and anticipated resistance to change. Conventional organizations, such as those prevalent in older organizational structures like public service departments, tend to exhibit higher levels of resistance to change. This resistance is likely a result of organizational learning processes and the presence of numerous negative feedback loops that have formed over time. To introduce change within such organizations, it becomes necessary to implement specific policies or a series of policies to transform the entire system of the organization (Água & Correia, 2020).

The structure of every organization has formal and informal components, and both contribute to resistance to change. Resistant organizations emphasize a shift in the basis of authority and decision-making procedures that are intentionally not institutionalized and a workforce that is organized according to ability, willingness, and, most importantly, workload. In resistant organizations, members deliberately seek opportunities for control (Packard, 2008). Hence, Kumar and Kant (2006) divided organizational resistance into two categories.

1) *Structural resistance*, which is resistance to change rooted in the organization's structure, systems, and formal processes.

2) *Cultural resistance*, which is resistance arising from the informal norms, values, social networks, and myths of the organization.

The structural resistance theory highlights the change-inhibiting properties of structural elements (Hannan & Freeman, 1984). Through a top-down approach at the firm level, structural resistance suggests that structural aspects of an organization, such as routines, rules, and the roles of each member, can limit individuals from adapting to external components (Barnett & Carroll, 1995). Long-standing structures of an organization are highly resistant to change (Fawcett et al., 2015). This is because organizations are structured to promote task mastery and specialization, and existing structured routines are likely to impede collaboration (Koufteros et al., 2010).

According to Kumar and Kant (2006), structural resistance is measured using two indicators: *resistance of organization* (the extent to which the structure and processes of the department pose obstacles to organization systems), and *lack of organizational support* (the extent to which there is a lack in support by the organization in its performance evaluation mechanisms or rewards policy).

2.3. Research model

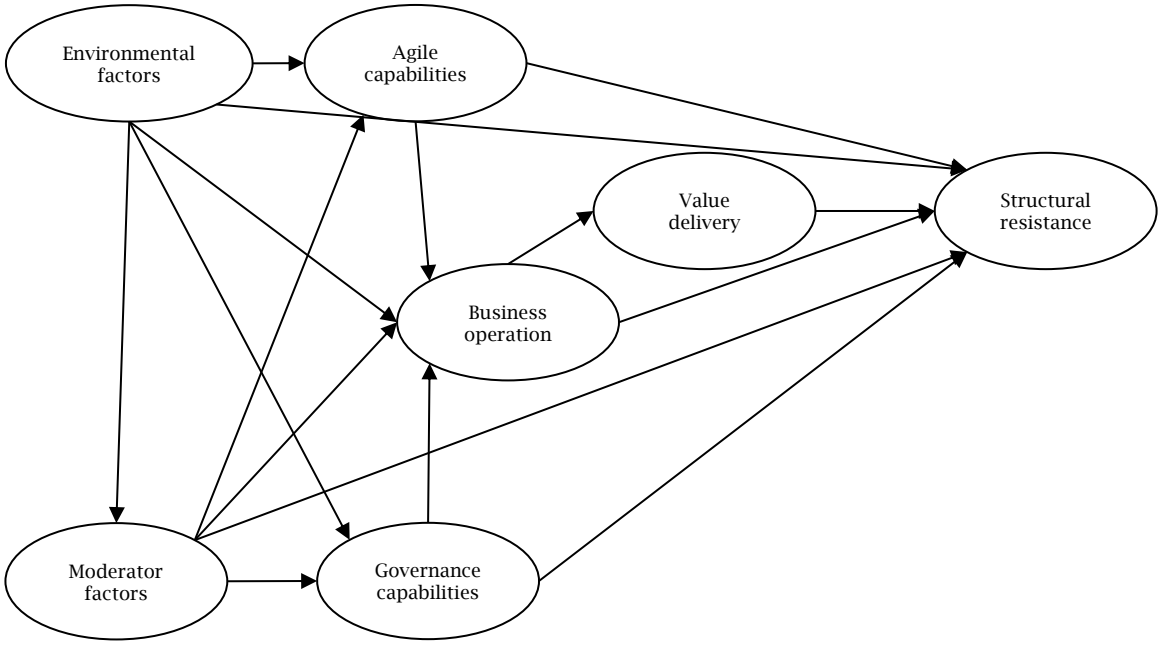
This study examined the relationship between agile governance and structural resistance in an organization. Vijayasarathy and Turk (2008) attempted to learn about the factors driving the adoption and use of agile practices, their benefits, and the challenges perceived by early

adopters of this software development methodology. The results indicated that 75% of employees adopted agile development approaches in half or more of all their projects. The data also revealed organizational resistance as problems/challenges in the adoption and use of agile processes and methods. In a similar vein, Rodríguez et al. (2012) found that a majority of respondents' organizational units used agile and/or lean methods, with one of the obstacles being resistance to change. Lacerda and Furtado (2018) also observed similar results, identifying barriers to the adoption of agile methods, such as changes in organizational culture and resistance to change. In addition, there is the issue of implementing agile governance, which can be challenging when introducing a new process to experienced employees which a traditional mindset (Diebold & Theobald, 2018; Dikert et al., 2016).

Anwar et al. (2016) conducted a study to answer the question, "Can agile processes improve the organization's performance indicators while maintaining the process maturity level?". The results showed that the agility process reduced the rate of rework from 29% to 13%. This shows that the application of agility can improve organizational performance (Haro, 2020; Mrugalska & Ahmed, 2021; Rialti et al., 2019). In addition, Almeida (2017) found that the transition to an agile process affects all aspects of a company's structure, including the development team, departments, and management. Resistance can be found in all of these elements because the structure becomes different, and people are typically used to spending a lot of time adopting strict work processes.

This research model is based on the agile governance theory by Luna et al. (2020). The research focuses on testing the hypothesis illustrated in Figure 1.

Figure 1. Research conceptual framework



Based on the research model presented in Figure 1, the hypotheses to be tested in this study include:

H1: Environmental factors (X1) have a significant effect on moderator factors (X2).

H2: Environmental factors (X1) have a significant effect on agile capabilities (X3).

H3: Environmental factors (X1) have a significant effect on governance capabilities (X4).

H4: Environmental factors (X1) have a significant effect on business operations (X5).

H5: Environmental factors (X1) have a significant effect on structural resistance (Y1).

H6: Moderator factors (X2) have a significant effect on agile capabilities (X3).

H7: Moderator factors (X2) have a significant effect on governance capabilities (X4).

H8: Moderator factors (X2) have a significant effect on business operations (X5).

H9: Moderator factors (X2) have a significant effect on structural resistance (Y1).

H10: Agile capabilities (X3) have a significant effect on business operations (X5).

H11: Agile capabilities (X3) have a significant effect on structural resistance (Y1).

H12: Governance capabilities (X4) have a significant effect on business operations (X5).

H13: Governance capabilities (X4) have a significant effect on structural resistance (Y1).

H14: Business operations (X5) have a significant effect on value delivery (X6).

H15: Business operations (X5) have a significant effect on structural resistance (Y1).

H16: Value delivery (X6) has a significant effect on structural resistance (Y1).

3. RESEARCH METHODOLOGY

This study was designed to answer the formulated problems, achieve the objectives, and test the hypotheses. It is a quantitative study because it analyzes data using inductive and descriptive

statistics to draw conclusions about the population. Cross-sectional data was collected from respondents who answered indicators related to *agile governance* and *structural resistance*. The population in this study consists of civil servants in Indonesia. Given the large size of this population, it was necessary to take samples. Samples are defined as a part of the population that can represent the population's characteristics (Sekaran, 2006). This allows the researcher to draw conclusions based on limited data. The sample size of individuals needed for this study can be calculated using the Slovin formula (Sekaran, 2006).

$$n = \frac{N}{1 + N(e)^2} \quad (1)$$

where,

- n = sample size;
- N = population size;
- e = percentage tolerance for sampling error.

In this study, the population size was 3.992.766, and a precision level of 5% (0.05) was used. Thus, the calculation of the sample size is as follows:

$$n = \frac{3.992.766}{1 + 3.992.766(0.05)^2} = 399.9599$$

Based on the Slovin formula, the sample size obtained is 400 samples. The data collected were analyzed using descriptive and inferential statistics. Inferential statistical analysis focuses on data analysis and interpretation to draw conclusions. This analysis is used to test the research hypotheses using sample data. The inferential statistical method used for data analysis in this study was structural equation modeling (SEM).

Partial least squares structural equation modeling (SEM-PLS) was selected because the causal relationship formulated in this research used a complex model. This relationship requires an analysis that can explain simultaneously causal relationships, making SEM an appropriate method. The choice of the SEM analysis method with the PLS approach was made considering the following factors: 1) the presence of reflective and formative indicator models, for which SEM-PLS can be applied to structural models involving reflective and formative indicators; 2) SEM-PLS can be applied to both small and large samples; 3) the method can be used with all data scales; 4) it does not require assumptions; and 5) besides confirming existing theory, SEM-PLS can also be used to establish relationships for which there is no theoretical basis (Solimun et al., 2017). In addition to utilizing SEM-PLS, path analysis can also be employed as one of the parametric analyses to examine the relationships among variables.

4. RESULTS

4.1. First order measurement model (Outer model)

The variables in this study used a reflective indicator model, where each variable is measured from several indicators. Testing the reflective indicator model obtained the outer loading value. The outer loading values indicate the weight of each indicator as a measure of each latent variable. The indicator with the largest outer loading is considered the strongest (dominant) variable measurer. The results of testing the measurement model for each research variable are presented in Table 1.

Table 1. First order variable measurement

Variable	*Indicator*	*Outer loading*	*p-value*	*Decision*
Environmental factors (X1)	Technological impact (*X1.1*)	0.744	< 0.001	Significant
	Influence of regulatory institutions (*X1.2*)	**0.765**	**< 0.001**	**Significant**
	Influence of competitiveness (*X1.3*)	0.712	< 0.001	Significant
	Economic influence (*X1.4*)	0.714	< 0.001	Significant
Moderator factors (X2)	Market turbulence (*X2.1*)	0.708	0.046	Significant
	Organizational culture (*X2.2*)	0.405	0.462	Not significant
	Leadership (*X2.3*)	0.808	< 0.001	Significant
	Public sector performance management (*X2.4*)	**0.838**	**< 0.001**	**Significant**
	Business process (*X2.5*)	0.833	< 0.001	Significant
	Quality of human resources (*X2.6*)	0.748	< 0.001	Significant
Agile capabilities (X3)	Flexibility (*X3.1*)	0.706	< 0.001	Significant
	Leanness (*X3.2*)	0.765	< 0.001	Significant
	Agility (*X3.3*)	**0.820**	**< 0.001**	**Significant**
	Adaptability (*X3.4*)	0.756	< 0.001	Significant
Governance capabilities (X4)	Strategic alignment (*X4.1*)	0.838	< 0.001	Significant
	Decision making (*X4.2*)	0.874	< 0.001	Significant
	Control (*X4.3*)	**0.879**	**< 0.001**	**Significant**
	Compliance (*X4.4*)	0.746	< 0.001	Significant
Business operations (X5)	Business process-driven approach (*X5.1*)	0.775	< 0.001	Significant
	Project-driven approach (*X5.2*)	0.900	< 0.001	Significant
	Best practices adoption (*X5.3*)	**0.901**	**< 0.001**	**Significant**
Value delivery (X6)	Utility for product or service (*X6.1*)	0.834	< 0.001	Significant
	Warranty for product or service (*X6.2*)	**0.876**	**< 0.001**	**Significant**
	Time-to-market for product or service (*X6.3*)	0.831	< 0.001	Significant
Structural resistance (Y1)	Resistance to change (*Y1.1*)	0.770	< 0.001	Significant
	Lack of organizational support (*Y1.2*)	0.770	< 0.001	Significant

Source: Processed by the authors.

The results of the first-order model test are considered valid if the p-value is < 0.05, and outer loading is > 0.7. Based on Table 1, all indicators are validated, except for indicator *X2.2*. Therefore, the analysis proceeds with the removal of this specific indicator. In the case of *environmental*

factors (*X1*), the outer loading calculation shows that the first indicator, namely the *Influence of regulatory institutions* (*X1.2*), has the highest outer loading value, which is 0.765. Thus, it can be concluded that the *Influence of regulatory institutions* indicator (*X1.2*) is the most important variable reflecting the *environmental factors* variable (*X1*). The results of the other variables are also shown in Table 1.

4.2. Hypothesis testing

The structural model presents the relationships between variables by presenting path coefficient for direct influence and the associated p-value. The path coefficient value indicates the degree of strong or weak influence between variables or the degree of strong and weak influence of one variable on another variable. On the other hand, the sign of the path coefficient (positive or negative) indicates the direction of the influence between variables. The greater the value of the path coefficient, the stronger the influence of a variable on other variables. The positive sign on the path coefficient indicates an influence in the same direction, that is, the greater the value of a variable, the greater the value of the variable affected. Conversely, a negative sign on the path coefficient indicates the opposite direction of influence, that is, the greater the value of a variable, the lower the value of the other variables affected.

The p-value is used to assess the results of hypothesis testing, specifically to determine if there is a significant influence of one variable on another. If the p-value is < 0.05 (with an alpha 5%), it is considered significant, indicating a substantial influence of one variable on others. Table 2 below presents the direct effects resulting from the SEM analysis.

Table 2. Hypothesis testing

Hypothesis	*Influence between variables*	*Coefficient*	*p-value*	*Decision*
H1	Environmental factors (*X1*) → Moderator factors (*X2*)	0.131	0.004	Accepted
H2	Environmental factors (*X1*) → Agile capabilities (*X3*)	0.356	< 0.001	Accepted
H3	Environmental factors (*X1*) → Governance capabilities (*X4*)	0.352	< 0.001	Accepted
H4	Environmental factors (*X1*) → Business operations (*X5*)	0.048	0.169	Rejected
H5	Environmental factors (*X1*) → Structural resistance (*Y1*)	-0.108	0.014	Accepted
H6	Moderator factors (*X2*) → Agile capabilities (*X3*)	0.274	< 0.001	Accepted
H7	Moderator factors (*X2*) → Governance capabilities (*X4*)	0.301	< 0.001	Accepted
H8	Moderator factors (*X2*) → Business operations (*X5*)	0.087	0.040	Accepted
H9	Moderator factors (*X2*) → Structural resistance (*Y1*)	-0.518	< 0.001	Accepted
H10	Agile capabilities (*X3*) → Business operations (*X5*)	0.436	< 0.001	Accepted
H11	Agile capabilities (*X3*) → Structural resistance (*Y1*)	-0.252	0.015	Accepted
H12	Governance capabilities (*X4*) → Business operations (*X5*)	0.403	< 0.001	Accepted
H13	Governance capabilities (*X4*) → Structural resistance (*Y1*)	-0.045	0.182	Rejected
H14	Business operations (*X5*) → Value delivery (*X6*)	0.695	< 0.001	Accepted
H15	Business operations (*X5*) → Structural resistance (*Y1*)	0.139	0.002	Accepted
H16	Value delivery (*X6*) → Structural resistance (*Y1*)	0.073	0.006	Accepted

Source: Processed by the authors.

5. DISCUSSION

Based on the results of the hypothesis testing presented in Table 2, it is evident that 14 hypotheses have been accepted, while two hypotheses have been rejected. Specifically, *H1*, *H2*, and *H3* obtained path coefficients with positive values and p-values less than alpha level of 0.05. These results indicate that there is a significant, albeit partial, influence of *environmental factors* (*X1*) on *moderator factors* (*X2*), *agile capabilities* (*X3*), and *governance capabilities* (*X4*). The positive path coefficients indicate that higher environmental factors within an organization correspond to higher levels of moderator factors, agile capabilities, and governance capabilities. These results align with the agile governance model proposed by Luna et al. (2020).

In *H4*, a p-value of 0.169 was obtained, which is greater than the alpha level (0.05). Thus, it can be concluded that there is no significant effect of *environmental factors* (*X1*) on *business operations* (*X5*). The non-significant results were caused by the study being conducted in public-sector organizations, where competition between civil servants (*aparatur sipil negara, ASN*) is relatively low (Bhuiyan & Amagoh, 2011; Husein et al., 2015; Jahanshahi & Bhattacharjee, 2020). This is also proven in the results of the outer model of the environmental factors variable showing that the value of the competition indicator is the smallest. Apart from the hypothesis that has no statistical significance, the influence identified from *X1* on *X5* has a positive coefficient. These results indicate that the higher the influence of an organization's environment, the more it will affect ongoing business operations.

H6, H7, and *H8* obtained path coefficients with positive values and p-values less than alpha (0.05). These results indicate a significant influence of *moderator factors* (*X2*) on *agile capabilities* (*X3*), *governance capabilities* (*X4*), and *business operations* (*X5*), partially. The positive path coefficient indicates that higher levels of moderator factors within an organization are associated with increased agile capabilities, governance capabilities, and business operations in public-sector organizations in Indonesia. The moderator factors encompass elements such as market, organizational culture, leadership, enterprise architecture, business model, and the quality of human resources. These results illustrate that organizations operating with these moderator factors are more likely to enhance their ability to adapt to changes, improve their governance capabilities, and optimize their business operations.

H10 and *H12* show path coefficients with values of 0.436 and 0.403, respectively, and p-values lower than alpha (0.05). These results indicate a significant influence of *agile capabilities* (*X3*) and *governance capabilities* (*X4*) on *business operations* (*X5*). The positive path coefficient indicates that as

the ability of public-sector organizations in Indonesia to adapt to change improves, so does the quality of their business operations. In addition, enhanced governance capabilities within an organization further contribute to the optimization of its business operations.

H14 obtains a path coefficient of 0.695 and a p-value below alpha (0.05). These results indicate that there is a significant influence of *business operations* (*X5*) on *value delivery* (*X6*). The positive path coefficient suggests that as an organization's business operations improve, the value delivered to its users also increases. This implies that enhanced business operations lead to higher user satisfaction. With mature operations, users of this service will also feel satisfied with the services provided by public-sector organizations in Indonesia.

This study also examines the influence of agile governance using the model proposed by Luna et al. (2020) on the structural resistance an organization. The agile governance model adopted by Luna et al. (2020) uses six variables, which consist of *environmental factors, moderator factors, agile capabilities, governance capabilities, business operations*, and *value delivery*. *H5, H9, H11, H13, H15,* and *H16* show the influence of agile governance variables on structural resistance. *H5* shows that there is a significant influence of *environmental factors* (*X1*) on *structural resistance* (*Y1*). This is evident from the results of the path coefficient of -0.108 with a p-value less than the alpha value (0.05). The negative coefficient indicates that higher technological effects, regulations, competitiveness, and economic influences make public-sector organizations in Indonesia more vulnerable to change, should it be necessary. These findings align with previous research indicating that technological developments are one of the indicators that can lead to organizational changes (Jung, 2018; Min, 2021; Patil, 2021). In addition, Gatonye (2015) explained that competition, government regulation, and economic conditions influence the changes in the strategies to be implemented within an organization.

Furthermore, *H9* shows results in which there is a significant influence of *moderator factors* (*X2*) on *structural resistance* (*Y1*). This is evident from the results of the path coefficient of -0.518 with a p-value less than the alpha value (0.05). The path coefficient is negative, illustrating that the better the moderator factors, which consist of market, organizational culture, leadership, public sector performance management, business process, and the quality of human resources, the better the organization adapts to change. Khodaparasti et al. (2013) also supported this finding, as their study shows that organizational culture, leadership, business models, and the quality of human resources are influential factors when wanting to make changes. Human and managerial resources in an organization play an important role in making changes and influencing the evolution in the professional domain. The management of changes made by organizational leaders is important because the rate of change is increasing. Leadership acts as input at multiple levels, influencing organizational outcomes by continuously shaping employee attitudes during change (Appelbaum et al., 2015).

H11 shows a significant influence of *agile capabilities* (*X3*) on *structural resistance* (*Y1*). This is evident from the results of the path coefficient of -0.252 with a p-value less than the alpha value (0.05). Both variables show a negative coefficient, signifying that if public-sector organizations in Indonesia are more flexible and agile in dealing with changes, these organizations will have low structural resistance. Doeze Jager et al. (2022) stated that an organization with the ability to adapt to change will become more accustomed to changes in its structure. This is consistent with several previous studies (Lacerda & Furtado, 2018; Rodríguez et al., 2012; Vijayasarathy & Turk, 2008). When changes occur, people tend to react adaptively, and management then discusses the changes with the employees, making them more aware and prepared for the changes. As a result, this can also improve organizational performance, leading to increased productivity (Anwar et al., 2016).

H13 shows that there is no significant influence of *governance capabilities* (*X4*) on *structural resistance* (*Y1*). This can be seen from the path coefficient of -0.045 with a p-value of 0.182, which exceeds the alpha value (0.05). The lack of significant results is attributable to the various regulations that govern the operation of public-sector organizations. When an organization seeks to implement a change, careful consideration is required to ensure that the proposed changes align with the existing regulations. Consequently, the adaptation process is time-consuming (MacCarthaigh et al., 2012). However, if the organization can adjust to these requirements, it can enhance its performance (Anwar et al., 2016). Apart from the non-significant hypothesis, the influence of *X4* on *Y1* has a negative coefficient, suggesting that organization with strong governance capabilities are better equipped to adapt to changes.

H15 shows a significant influence of *business operations* (*X5*) on *structural resistance* (*Y1*). This can be seen from the path coefficient of 0.139 with a p-value less than the alpha (0.05). In other words, the higher the quality of an organization's business operations, the greater the structural resistance experienced by public-sector organizations in Indonesia. This implies that when an organization has well-established and deeply ingrained business operations, making changes to these routines, which have become an integral part of the organization's daily activities, can be challenging (Tembo, 2021). This also cannot be separated from the sense of security that will be achieved when doing something that has become a habit for every organization.

Finally, *H16* also shows a significant influence of *value delivery* (*X6*) on *structural resistance* (*Y1*). This is evident from the path coefficient of 0.073 with a p-value below the alpha threshold (0.05). This implies that the greater the importance of value delivery in an organization, the higher the level of structural resistance in public-sector organizations in Indonesia. In this context, value delivery refers to service user satisfaction. Public-sector organizations in Indonesia place a strong emphasis on ensuring user satisfaction. When these organizations achieve the desired level of satisfaction with their services, they become reluctant to undertake the risks associated with making changes. This outcome aligns with the findings of Linde et al. (2021), which

suggest that organizational changes may introduce increased and, at times, unforeseen risks. Therefore, factors related to value delivery prioritize user-centred approaches, resulting in greater resistance to change among public-sector organizations in Indonesia.

6. CONCLUSION

The implementation of agile governance in public-sector organizations in Indonesia has significant implications for structural resistance within these entities. The adapted agile governance model, customized to the specific context of public-sector organizations in Indonesia, sheds light on its influence on structural resistance. Findings from the SEM-PLS analysis reveal that *environmental factors*, *moderator factors*, and *agile capabilities* negatively impact structural resistance, indicating that organizations with these characteristics are more receptive to change. Conversely, *business operations* and organizational *value delivery* have a positive effect on structural resistance, suggesting that these aspects hinder organizational adaptability. This can be attributed to the comfort zone established by the organization's habitual activities. Furthermore, the results also indicate that *governance capabilities* do not significantly affect structural resistance, although the negative coefficient implies that organizations with strong governance capabilities can better adapt to changes. Additionally, the study highlights that the application of agile governance in public-sector organizations can enhance organizational performance, resulting in increased productivity.

These findings offer valuable insights for public-sector organizations considering the implementation of agile governance policies. Therefore, the analysis presented in this study serves as a basis for stakeholders to develop strategic policies aligned with the vision and mission of public-sector organizations, ultimately improving their performance and productivity. It is hoped that this research contributes to the advancement of agile governance theory and provides guidance for public-sector organizations seeking to adopt agile governance in their activities. In terms of future research, it is recommended to further explore the specific mechanisms through which agile governance influences organizational resistance to change. Additionally, investigating the moderating effects of contextual factors and examining the limitations of this research, such as sample size and geographic scope, would contribute to a more comprehensive understanding of the subject matter.

REFERENCES

Água, P. B., & Correia, A. (2020). Enabling factors in innovation governance: A business policy approach. *Corporate Board: Role, Duties and Composition, 16*(2), 54–64. https://doi.org/10.22495/cbv16i2art5

Almeida, F. (2017). Challenges in migration from waterfall to agile environments. *World Journal of Computer Application and Technology, 5*(3), 39–49. https://doi.org/10.13189/wjcat.2017.050302

Anwar, A., Kamel, A. A., & Ahmed, E. (2016). Agile adoption case study, pains, challenges & benefits. In *Proceedings of the 2nd Africa and Middle East Conference on Software Engineering.* Association for Computing Machinery. https://doi.org/10.1145/2944165.2944175

Appelbaum, S. H., Degbe, M. C., MacDonald, O., & Nguyen-Quang, T.-S. (2015). Organizational outcomes of leadership style and resistance to change (part one). *Industrial and Commercial Training, 47*(2), 73–80. https://doi.org/10.1108/ICT-07-2013-0044

Barnett, W. P., & Carroll, G. R. (1995). Modeling internal organizational change. *Annual Review of Sociology, 21*(1), 217–236. https://doi.org/10.1146/annurev.so.21.080195.001245

Beck, K., Beedle, M., van Bennekum, A., Cockburn, A., Cunningham, W., Fowler, M., Grenning, J., Highsmith, J., Hunt, A., Jeffries, R., Kern, J., Marick, B., Martin, R. C., Mellor, S., Schwaber, K., Sutherland, J., & Thomas, D. (2001). *Manifesto for agile software development.* https://agilemanifesto.org/

Bhuiyan, S. H., & Amagoh, F. (2011). Public sector reform in Kazakhstan: Issues and perspectives. *International Journal of Public Sector Management, 24*(3), 227–249. https://doi.org/10.1108/09513551111121356

Cheng, T.-H., Jansen, S., & Remmers, M. (2009). Controlling and monitoring agile software development in three Dutch product software companies. In *Proceedings of the 2009 ICSE Workshop on Software Development Governance.* Institute of Electrical and Electronics Engineers. https://doi.org/10.1109/SDG.2009.5071334

Diebold, P., & Theobald, S. (2018). How is agile development currently being used in regulated embedded domains? *Journal of Software: Evolution and Process, 30*(8), Article e1935. https://doi.org/10.1002/smr.1935

Dikert, K., Paasivaara, M., & Lassenius, C. (2016). Challenges and success factors for large-scale agile transformations: A systematic literature review. *Journal of Systems and Software, 119*, 87–108. https://doi.org/10.1016/j.jss.2016.06.013

Doeze Jager, S. B., Born, M. P., & van der Molen, H. T. (2022). The relationship between organizational trust, resistance to change and adaptive and proactive employees' agility in an unplanned and planned change context. *Applied Psychology, 71*(2), 436–460. https://doi.org/10.1111/apps.12327

Fawcett, S. E., McCarter, M. W., Fawcett, A. M., Webb, G. S., & Magnan, G. M. (2015). Why supply chain collaboration fails: The socio-structural view of resistance to relational strategies. *Supply Chain Management, 20*(6), 648–663. https://doi.org/10.1108/SCM-08-2015-0331

Gatonye, L. W. (2015). *Challenges facing the implementation of diversification strategy at UAP Insurance Company* [Doctoral dissertation, University of Nairobi]. University of Nairobi. http://erepository.uonbi.ac.ke/handle/11295/94465

Hannan, M. T., & Freeman, J. (1984). Structural inertia and organizational change. *American Sociological Review, 49*(2), 149–164. https://doi.org/10.2307/2095567

Haro, I. E. L. (2020). Corporate governance in agile organizations: A path dependency scheme or a source for growth. In A. Kostyuk, M. J. C. Guedes, & D. Govorun (Eds.), *Proceedings of the Corporate Governance: Examining Key Challenges and Perspectives* (pp. 161–166). Virtus Interpress. http://virtusinterpress.com/IMG/pdf/complete_pdf_file_of_the_book.pdf#page=162

Husein, I. G., Danar Sunindyo, W., Bahawares, R., Nainggolan, Y., & Akbar, S. (2015). Open data strategy for enhancing the productivity and competitiveness of fishery SMEs in Indonesia. In *Proceedings of the 2015 International Conference on Electrical Engineering and Informatics*. Institute of Electrical and Electronics Engineers. https://doi.org/10.1109/ICEEI.2015.7352550

Jahanshahi, A. A., & Bhattacharjee, A. (2020). Competitiveness improvement in public sector organizations: What they need? *Journal of Public Affairs, 20*(2), Article e2011. https://doi.org/10.1002/pa.2011

Jung, B. (2018). A study on the job productivity by the smart work investment — Focused on the organizational change resistance and the communication. *Management & Information Systems Review, 37*(3), 83–113. https://doi.org/10.29214/damis.2018.37.3.005

Khodaparasti, R. B., Absalan, A., & Khodavandegar, P. (2013). How to reduce or mitigate human resource resistance against organizational changes: The case of Iran. *Management: Journal of Contemporary Management Issues, 18*(1), 119–129. https://hrcak.srce.hr/en/104241

Koufteros, X. A., Rawski, G. E., & Rupak, R. (2010). Organizational integration for product development: The effects on glitches, on-time execution of engineering change orders, and market success. *Decision Sciences, 41*(1), 49–80. https://doi.org/10.1111/j.1540-5915.2009.00259.x

Kumar, S., & Kant, S. (2006). Organizational resistance to participatory approaches in public agencies: An analysis of forest department's resistance to community-based forest management. *International Public Management Journal, 9*(2), 141–173. https://doi.org/10.1080/10967490600770559

Lacerda, L. L., & Furtado, F. (2018). Factors that help in the implantation of agile methods: A systematic mapping of the literature. In *Proceedings of the 2018 13th Iberian Conference on Information Systems and Technologies*. Institute of Electrical and Electronics Engineers. https://doi.org/10.23919/CISTI.2018.8399406

Linde, L., Sjödin, D., Parida, V., & Gebauer, H. (2021). Evaluation of digital business model opportunities. *Research-Technology Management, 64*(1), 43–53. https://doi.org/10.1080/08956308.2021.1842664

Luna, A. J. H. d. O., Kruchten, P., & de Moura, H. P. (2015). Agile governance theory: Conceptual development. In D. M. G. Sakata (Ed.), *Proceedings of the 12th International Conference on Management of Technology and Information Systems* (pp. 1–20). FEA-USP. https://doi.org/10.48550/arXiv.1505.06701

Luna, A. J. H. d. O., Kruchten, P., Pedrosa, M. L. G. d. E., Almeida Neto, H. R. de, & de Moura, H. P. (2014). State of the art of agile governance: A systematic review. *International Journal of Computer Science and Information Technology, 6*(5), 121–141. https://doi.org/10.5121/ijcsit.2014.6510

Luna, A. J. H. d. O., Marinho, M. L. M., & de Moura, H. P. (2020). Agile governance theory: Operationalization. *Innovations in Systems and Software Engineering, 16*(1), 3–44. https://doi.org/10.1007/s11334-019-00345-3

MacCarthaigh, M., Roness, P. G., & Sarapuu, K. (2012). Mapping public sector organizations: An agenda for future research. *International Journal of Public Administration, 35*(12), 844–851. https://doi.org/10.1080/01900692.2012.715568

Miceli, A., Hagen, B., Riccardi, M. P., Sotti, F., & Settembre-Blundo, D. (2021). Thriving, not just surviving in changing times: How sustainability, agility and digitalization intertwine with organizational resilience. *Sustainability, 13*(4), Article 2052. https://doi.org/10.3390/su13042052

Min, H. (2021). Business analytics practices and managerial implications based on the evidence from Korea. *American Journal of Business, 36*(2), 150–168. https://doi.org/10.1108/AJB-05-2020-0066

Mrugalska, B., & Ahmed, J. (2021). Organizational agility in industry 4.0: A systematic literature review. *Sustainability, 13*(15), Article 8272. https://doi.org/10.3390/su13158272

Packard, J. R. (2008). *Organizational structure, religious belief, and resistance: The emerging church*.

Patil, K. P. (2021). Industry 4.0 adoption in manufacturing industries using technology-organization-environment framework. *Journal of Information Technology Research, 14*(1), 123–146. https://doi.org/10.4018/JITR.2021010108

Porter, M. E. (1980). Industry structure and competitive strategy: Keys to profitability. *Financial Analysts Journal, 36*(4), 30–41. https://doi.org/10.2469/faj.v36.n4.30

Qumer, A. (2007). Defining an integrated agile governance for large agile software development environments. In G. Concas, E. Damiani, M. Scotto, & G. Succi (Eds.), *Agile processes in software engineering and extreme programming* (pp. 157–160). Springer. https://doi.org/10.1007/978-3-540-73101-6_23

Rialti, R., Zollo, L., Ferraris, A., & Alon, I. (2019). Big data analytics capabilities and performance: Evidence from a moderated multi-mediation model. *Technological Forecasting and Social Change, 149*, Article 119781. https://doi.org/10.1016/j.techfore.2019.119781

Rodríguez, P., Markkula, J., Oivo, M., & Turula, K. (2012). Survey on agile and lean usage in finnish software industry. In *Proceedings of the ACM-IEEE International Symposium on Empirical Software Engineering and Measurement*. Association for Computing Machinery. https://doi.org/10.1145/2372251.2372275

Sekaran, U. (2006). *Research methods for business: A skill building approach*. John Wiley & Sons.

Solimun, A. A. R., Fernandes, N. N., & Nurjannah, N. (2017). *Multivariate statistical method: Structural equation modeling based on WarpPLS*. UB Press.

Stachowiak, A., & Oleśków-Szłapka, J. (2018). Agility capability maturity framework. *Procedia Manufacturing, 17*, 603–610. https://doi.org/10.1016/j.promfg.2018.10.102

Tembo, A. (2021). *Strategies to sustain business operations during continuous environmental change* [Doctoral dissertation, Walden University]. Walden Dissertations and Doctoral Studies. https://scholarworks.waldenu.edu/dissertations/9898

Vijayasarathy, L. R., & Turk, D. (2008). Agile software development: A survey of early adopters. *Journal of Information Technology Management, 19*(2), 1–8. https://tinyurl.com/489tem5b

Walter, A.-T. (2021). Organizational agility: Ill-defined and somewhat confusing? A systematic literature review and conceptualization. *Management Review Quarterly, 71*(2), 343–391. https://doi.org/10.1007/s11301-020-00186-6

Ylinen, M. (2021). Incorporating agile practices in public sector IT management: A nudge toward adaptive governance. *Information Polity, 26*(3), 251–271. https://doi.org/10.3233/IP-200269