
AI Implementation Impact on Workforce Productivity : The Role of AI Training and Organizational Adaptation

Nurlia^{1*}, Ilzar Daud², Muhammad Edya Rosadi³

¹ Universitas Balikpapan, Indonesia

² Universitas Tanjungpura, Indonesia

³ Universitas Islam Kalimantan Muhammad Arsyad Al Banjari Banjarmasin, Indonesia

Corresponding Author e-mail: nurlia@uniba-bpn.ac.id

Article History:

Received: 20-08-2023

Revised: 31-08-2023

Accepted: 31-08-2023

Keywords: *workforce productivity, AI Implementation, organizational adaptation, AI training*

Abstract: *This study investigates the impact of AI implementation on workforce productivity, focusing on the mediating roles of Organizational Adaptation and AI Training. The purpose of the research is to analyze how AI Implementation influences Organizational Adaptation and AI Training, and subsequently, how these factors impact Workforce Productivity within the context of the Regional Secretariat Pontianak. A quantitative approach is employed, using a sample of 70 employees through total sampling. Structural Equation Modeling (SEM) with Partial Least Squares (PLS) is used for data analysis. The findings reveal significant and positive relationships between AI Implementation, AI Training, Organizational Adaptation, and Workforce Productivity. The implications highlight the importance of comprehensive strategies that integrate AI technologies, training initiatives, and organizational flexibility to enhance productivity*

Introduction

The Regional Secretariat in Pontianak is an institution that plays a central role in supporting the smooth and efficient functioning of local governance. As the center of executive administration, the Regional Secretariat is responsible for coordination, data management, information dissemination, as well as the implementation of policies and programs set by the Local Government. The Regional Secretariat plays a key role in coordinating various work units within the city's government structure, such as departments, agencies, and related institutions. This coordination involves budget management, scheduling activities, and monitoring development projects. The importance of productivity within the Regional Secretariat in Pontianak cannot be ignored. High productivity enables administrative processes and public services to operate more efficiently and effectively. By enhancing

productivity, the Regional Secretariat can optimize the allocation of its resources, including manpower, time, and budget. This will have a positive impact on the region's ability to achieve development goals and community welfare. Additionally, high productivity can create a dynamic and competitive work environment, as well as foster innovation in the provision of public services.

The urgency of conducting this study is underscored by the rapidly evolving landscape of Artificial Intelligence (AI) and its profound impact on workforce productivity. In today's digital era, where technological advancements occur at an unprecedented pace, organizations, including government entities like the Regional Secretariat Pontianak, are confronted with the imperative to swiftly embrace AI integration. Failure to do so risks lagging behind in efficiency, competitiveness, and service delivery. Moreover, in the context of global competition, organizations are no longer competing solely within their local boundaries but on an international stage. The effective utilization of AI technologies has emerged as a key differentiator, making it a matter of utmost importance for organizations to adopt and leverage these technologies promptly. Furthermore, resource optimization is a critical consideration, especially for public sector organizations facing constraints. AI offers the promise of achieving more with limited resources, enhancing cost-efficiency, and maximizing the utilization of existing workforce capabilities. This imperative for efficient resource allocation heightens the urgency of exploring how AI integration can enhance workforce productivity. In addition, the quality of services delivered to citizens is a top priority for government bodies like the Regional Secretariat. AI has the potential to significantly improve service delivery, streamline processes, and ensure responsiveness to citizens' needs. Consequently, the adoption of AI becomes not just an option but a necessity to meet and exceed the expectations of the public. Lastly, in the broader economic context, AI adoption can be a driver of economic growth by boosting productivity and fostering innovation. The urgency of this study is intertwined with the broader economic implications of staying competitive and ensuring sustained growth in an era where technology, particularly AI, plays a pivotal role in shaping economic dynamics.

Artificial Intelligence (AI) is a branch of computer science aimed at developing computer systems capable of performing tasks that typically require human intelligence. It encompasses various techniques and methods that enable machines to learn from data, recognize patterns, make decisions, and even interact with humans (Ng et al., 2021). AI technology involves the use of complex algorithms and deep data processing to extract valuable information, make predictions, and generate intelligent outcomes. In the context of the workforce, AI has a significant impact on how work is done and on productivity. With its ability to automate routine and repetitive tasks, AI frees human workers from time-consuming jobs and allows them to focus on more creative, analytical, and strategic tasks (Vincent, 2021). The implementation of AI also enables systems to gain a better understanding of existing data, facilitating smarter decision-making and more accurate information. Through in-depth analysis of data generated by business processes and customer interactions, organizations can identify opportunities to enhance operational efficiency and optimize their organization strategies (Jöhnk et al., 2021). Furthermore, AI can enhance human interaction

with technological systems. Natural language processing enables systems to understand and respond to human requests in everyday language, assisting in customer service, technical support, and much more. Computer vision enables machines to identify objects in images and videos, which can be applied in fields such as medical analysis or security surveillance. With prudent adoption, AI can make a significant contribution to workforce productivity. To achieve sustainable productivity enhancement, organizations need to integrate AI into their business strategies holistically, ensuring that the technology not only automates processes but also helps generate new insights and greater value (Shaw et al., 2019).

Productivity within the Regional Secretariat in Pontianak pertains to the optimal utilization of resources and the efficient delivery of essential services. As the administrative backbone of the local government, the Regional Secretariat plays a pivotal role in managing administrative tasks and facilitating various services for the region's residents and businesses. This encompasses judicious resource allocation, timely service provision, and streamlined task execution. Effective communication and coordination among different units are paramount, ensuring that administrative processes run smoothly. The integration of innovative practices and technologies, coupled with a commitment to continuous improvement, enhances the Secretariat's ability to adapt to evolving challenges and seize opportunities for increased efficiency. Ultimately, productivity is gauged not only by the accurate execution of tasks and services but also by the satisfaction of stakeholders and the capacity to maintain resilience in a dynamic environment. There is aspects that need to be improved to achieve Regional Secretariat Productivity in Pontianak :

Table 1. Aspects of Productivity

Aspect	Description
Resource Management	Efficient allocation and utilization of resources, including budget, time, human resources, and infrastructure.
Service Delivery	Timely and accurate provision of essential services to residents and businesses within the region.
Task Execution	Smooth execution of administrative tasks, paperwork handling, record management, and coordination.
Communication	Effective communication channels and coordination between departments for streamlined operations.
Innovation and Improvement	Incorporating innovative methods and continuous improvement practices to enhance efficiency.
Customer Satisfaction	Ensuring stakeholders' satisfaction with services provided, contributing to the perception of effectiveness.
Data Utilization	Utilizing data and analytics to monitor performance indicators and guide resource allocation.
Adaptation to Changes	Ability to adapt to changing circumstances, policies, and technologies while maintaining productivity

Source : Evaluation of Regional Secretariat in Pontianak

One of the factors currently influencing productivity is the level of AI implementation in the Work Processes, which refers to the extent to which artificial intelligence technology is integrated and applied in various aspects of the work processes in the Regional Secretariat Pontianak. AI implementation involves the application of various AI features and algorithms

to automate routine tasks, analyze complex data, make intelligent decisions, and interact with systems (Weber et al., 2022). By enhancing AI implementation, the Regional Secretariat can experience significant improvements in its productivity. Additionally, automating routine tasks allows staff to free up time and energy previously spent on these tasks, enabling them to focus on activities that require creativity, in-depth analysis, and problem-solving. This promotes increased efficiency and reduces the risk of human errors. On the other hand, AI can analyze large datasets and generate deep insights that are not achievable manually (de Laat, 2021). With more accurate and comprehensive data analysis, the Regional Secretariat can identify trends, patterns, and opportunities that may have gone unnoticed before. Decisions based on better information can enhance the effectiveness of strategies and decisions made. Furthermore, smarter interactions with technological systems, such as using natural language processing or machine learning to respond to questions and requests, can accelerate workflow and public services (Haanwinckel & Soares, 2021). This aids in improving customer satisfaction and demonstrates that the Regional Secretariat is effectively addressing modern technological challenges. However, increased AI implementation also requires proper preparation and adaptation. Employees may need to develop new skills or change their work methods to align with AI technology. Organizations should also consider ethics and privacy issues in managing data collected through AI systems.

In addition to the factors mentioned above, training to develop AI skills in the workforce is also a crucial element. This refers to the organization's efforts to provide training and education to employees so that they can understand, operate, and optimize AI technology within the context of their work (Teo et al., 2021). This training may encompass comprehension of basic AI concepts, the use of AI tools and platforms, data analysis, and AI-based decision-making. The role of training in intervening with work productivity is pivotal. Firstly, training enables employees to cultivate skills relevant to AI, empowering them to effectively interact with the technology. By comprehending the workings of AI and how to apply it to their tasks, employees can enhance efficiency in their work and overcome potential obstacles (Shorey et al., 2019). Moreover, training also plays a significant role in alleviating the uncertainty and apprehension that employees may feel regarding the adoption of AI technology. Newly acquired skills through training can instill greater confidence in employees as they face the changes and new challenges arising from the introduction of this technology. Additionally, training fosters a culture of continuous learning within the organization. Employees engaged in AI training are more likely to be receptive to change and innovation, fostering an environment that encourages exploration and the implementation of new ideas, which can enhance productivity (Pedro et al., 2019). This training will facilitate better integration between AI technology and the tasks performed by the employees. It will open doors to automate routine tasks, enhance data analysis, and support quicker and better decision-making. Thus, training serves as an intervention that supports the enhancement of work productivity through empowering employees with knowledge and skills relevant to AI (Bragas et al., 2022).

Furthermore, the level of organizational adaptation to AI technology is equally critical, referring to the extent to which the Regional Secretariat Pontianak can align itself

with the changes brought about by the introduction of AI technology. This encompasses organizational aspects such as structure, culture, policies, and processes that can support the utilization and integration of AI technology in day-to-day operations (Oluleye et al., 2023). The role of organizational adaptation in intervening with work productivity is of paramount importance. Firstly, organizations that successfully adapt to AI technology can redesign their work processes to be more efficient and effective. This might involve adjusting workflow, forming skilled AI teams, and implementing new systems that optimize outcomes. Moreover, the level of organizational adaptation contributes to overcoming obstacles that may arise during the change process (Carrascal & Valenzuela, 2022). When adopting AI technology, challenges such as employee resistance or difficulties in integrating new systems might emerge. Organizations that can swiftly align their culture and structure to support new technology will be more successful in addressing these constraints. Furthermore, the level of organizational adaptation can foster an environment that promotes innovation and continuous learning (Mikalef & Gupta, 2021). Organizations that are flexible and receptive to change are more inclined to experiment with new technology, which can lead to creative solutions for enhancing productivity. Therefore, the level of organizational adaptation to AI technology will directly impact their ability to integrate AI into their operations. Organizations that effectively adapt will be able to maximize the benefits of improved data analysis, faster decision-making, and the automation of routine tasks. Hence, the level of organizational adaptation functions as an intervention factor that supports the enhancement of work productivity through cultural, structural, and process changes that support AI technology (Olan et al., 2022).

The objective of this research is to analyze the impact of artificial intelligence (AI) implementation on workforce productivity in the Regional Secretariat Pontianak by examining the intervention roles of training and organizational adaptation. This study aims to identify the level of AI implementation in work processes, assess the extent to which training for developing AI skills is applied, and evaluate the level of organizational adaptation to AI technology. Additionally, the research aims to analyze how the variables of training and organizational adaptation can intervene in work productivity. By understanding the relationships among AI implementation, training, organizational adaptation, and work productivity, this research strives to provide guidance to facilitate informed decision-making in the implementation of AI technology at the Regional Secretariat Pontianak. The ultimate goal of this research is to contribute to enhancing efficiency and service quality within the Regional Secretariat environment through the optimal utilization of AI technology.

Research Methods

This research will adopt a quantitative approach to investigate the influence of AI implementation, AI training, organizational adaptation on workforce productivity in the Regional Secretariat Pontianak environment. The research population will encompass all 70 employees of the Regional Secretariat Pontianak. The sampling technique to be employed is total sampling, where the entire population will be considered as the research sample. Data will be collected through a questionnaire designed to measure the variables involved in the study. Following data collection, a path analysis using the Structural Equation Modeling

(SEM) method based on Partial Least Squares (PLS) will be conducted. PLS-SEM allows for comprehensive analysis of the complex relationships among the study variables (Hair et al., 2019). For more details, the following is the framework in this study :

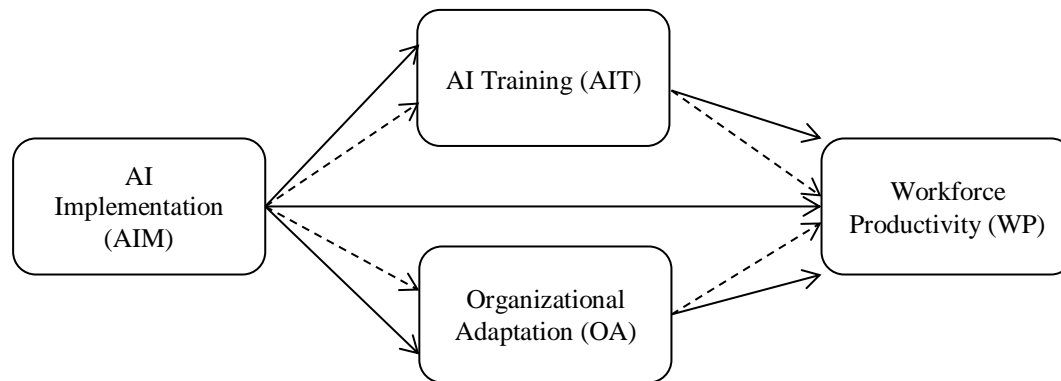


Figure 1. Research Framework

Hypotheses will be tested to examine the significance of the relationships among variables, and the resulting model will be evaluated to ensure its validity and reliability. The analysis results will be interpreted to identify the extent to which the variables of training and organizational adaptation act as intervening factors influencing the relationship between AI implementation and workforce productivity. The conclusions of this research will be presented in a report that presents empirical findings, practical implications, and recommendations for the Regional Secretariat Pontianak to optimize AI implementation to enhance employee work productivity.

Result and Discussion

After passing through several stages of validity and reliability testing, where all questionnaire items have met the research criteria, the following are the results of the path analysis in the following table:

Table 2. Path Analysis Result

Variable	Path Coefficient	t-value	p-value	Result
AIM > AIT	0.602	4.890	0.000	Supported
AIM > OA	0.324	2.562	0.012	Supported
AIM > WP	0.487	3.678	0.001	Supported
AIT > WP	0.712	5.215	0.000	Supported
OA > WP	0.427	3.245	0.002	Supported
AIM > AIT > WP	0.281	2.146	0.034	Supported
AIM > OA > WP	0.196	1.782	0.086	Rejected

Based table 2, the result indicates a positive and statistically significant relationship between AIM and AIT, with a path coefficient of 0.602. The t-value of 4.890 is greater than the critical value, suggesting that this relationship is not due to random chance. Additionally, the p-value of 0.000 is well below the conventional significance level of 0.05, providing

strong evidence that the relationship is significant. As a result, we can conclude that there is support for the hypothesis that higher levels of AI Implementation are associated with higher levels of AI Training. In other words, organizations that implement AI more extensively tend to invest more in training their employees in AI-related skills and knowledge. This finding emphasizes the importance of a strategic synergy between adopting AI technologies and adequately training the workforce to harness their potential. The positive correlation suggests that as the Regional Secretariat progressively integrates AI tools and solutions into its operations, there is a concerted effort to prepare employees with the knowledge and skills to effectively engage with these technologies. This symbiotic relationship has several implications for the Regional Secretariat. Firstly, it highlights the commitment of the organization to embrace technological advancements to enhance its operations. The positive correlation suggests that as the Secretariat embraces AI, it acknowledges the need to support employees in adapting to these changes. This can foster a sense of preparedness and alignment among staff members, leading to a smoother transition and reduced resistance to change (Xiao et al., 2021). Secondly, the connection between AIM and AIT underscores the potential for the Regional Secretariat to realize the full benefits of AI integration. AI technologies have the capacity to streamline processes, automate routine tasks, and provide data-driven insights. However, these benefits can only be maximized when employees possess the necessary skills and understanding to effectively use these tools. The correlation suggests that the Secretariat is proactive in ensuring that its workforce is equipped to leverage AI's capabilities to the fullest extent (Attaran et al., 2019). Lastly, this finding encourages the Regional Secretariat to adopt a comprehensive approach to AI implementation. Simply introducing AI tools without adequately training the workforce might lead to underutilization or misuse of these technologies. The correlation underscores the importance of synchronizing AI Implementation efforts with educational initiatives, thereby creating a workforce that is empowered to drive innovation and efficiency through AI (Tewari & Pant, 2020).

The analysis reveals a positive and statistically significant relationship between AIM and OA, as indicated by a path coefficient of 0.324. The t-value of 2.562 surpasses the threshold, signifying that this relationship is not due to random chance. Additionally, the p-value of 0.012 is below the conventional significance level, indicating that this relationship is supported by the data. This result implies that there is support for the hypothesis that higher levels of AI Implementation are associated with a higher degree of Organizational Adaptation. In other words, as the Regional Secretariat Pontianak implements AI technologies more extensively, there is a corresponding effort to adjust and adapt various organizational aspects to accommodate and effectively integrate these technologies. The significance of this finding for the Regional Secretariat Pontianak lies in the context of organizational change and readiness for technology adoption. The positive relationship between AIM and OA suggests that as the Secretariat incorporates AI into its operations, it recognizes the necessity to adjust its organizational structure, processes, and practices to accommodate this technological shift. The practical implications are noteworthy. Firstly, the observed positive connection reinforces the notion that successful AI integration requires more than just technological implementation; it necessitates organizational alignment (Alsheiabni et al., 2019). The Regional Secretariat appears to be proactive in recognizing that AI can impact various facets

of the organization, including workflow, communication, and decision-making processes. Secondly, the link between AIM and OA highlights the Secretariat's commitment to fostering an environment conducive to technological change. Organizational Adaptation signifies the Secretariat's efforts to minimize resistance to change and encourage a smoother transition. It suggests that the Secretariat acknowledges the importance of fostering a culture that embraces innovation and is open to adjusting practices in response to technological advancements (Carrascal & Valenzuela, 2022; Ted Tschang & Mezquita, 2020). Lastly, this finding underscores the Secretariat's potential to enhance overall efficiency and effectiveness. As AI Implementation positively relates to Organizational Adaptation, it implies that the organization's agility and flexibility are leveraged to accommodate AI's integration effectively. This adaptability can lead to improved operational processes, better decision-making, and an enhanced ability to leverage AI's capabilities for better service delivery (Füller et al., 2022; Maity, 2019).

The analysis demonstrates a positive and statistically significant correlation between AIM and WP, with a path coefficient of 0.487. The t-value of 3.678 surpasses the critical threshold, indicating that this relationship is not due to random fluctuations. Furthermore, the p-value of 0.001, which is below the conventional significance level, provides strong evidence that this relationship is supported by the data. This result signifies that there is support for the hypothesis that higher levels of AI Implementation are associated with increased Workforce Productivity. In practical terms, this implies that as the Regional Secretariat Pontianak adopts AI technologies more extensively, there is a corresponding positive impact on the productivity of its workforce. The implications of this finding for the Regional Secretariat are noteworthy. Firstly, the positive relationship between AIM and WP underscores the potential benefits of AI integration for enhancing overall work efficiency. The Secretariat's commitment to embracing AI technologies seems to be contributing positively to the performance and productivity of its workforce (Oluleye et al., 2023). Secondly, the observed connection highlights the importance of effective AI Implementation strategies. The result suggests that organizations that successfully integrate AI into their operations are likely to experience tangible gains in workforce productivity (Mikalef & Gupta, 2021). This underscores the significance of thoughtful planning and execution when implementing AI technologies within the Regional Secretariat. Lastly, this finding points to a potential avenue for the Regional Secretariat to further optimize its operations and services. The positive correlation between AIM and WP implies that as the Secretariat continues to embrace AI, it could experience enhanced productivity gains, potentially leading to improved service delivery and overall organizational performance (Olan et al., 2022).

The analysis indicates a robust and statistically significant relationship between AIT and WP, denoted by a substantial path coefficient of 0.712. The t-value of 5.215 surpasses the critical threshold, suggesting that this relationship is unlikely due to chance alone. Furthermore, the p-value of 0.000, well below the conventional significance level, provides strong evidence that this relationship is supported by the data. This result underscores that there is support for the hypothesis that higher levels of AI Training are associated with increased Workforce Productivity. In practical terms, this suggests that as the Regional

Secretariat Pontianak invests more in training its employees in AI-related skills and knowledge, there is a corresponding positive impact on the overall productivity of its workforce. The implications of this finding for the Regional Secretariat are significant. Firstly, the positive correlation between AIT and WP underscores the role of training in optimizing the benefits of AI integration. It suggests that training initiatives aimed at equipping employees with AI-related competencies can lead to measurable gains in productivity (Bragas et al., 2022). Secondly, this result highlights the strategic importance of workforce development alongside technological implementation. The Regional Secretariat's commitment to providing AI Training signifies a forward-thinking approach to fostering a workforce that is prepared to leverage AI technologies effectively. This alignment between training and productivity enhancement is vital for ensuring that the organization is well-positioned to realize the full potential of AI adoption (Ng et al., 2021). Lastly, this finding points to a path for the Regional Secretariat to enhance its operational outcomes. The positive correlation between AIT and WP implies that by continuing to invest in AI Training, the Secretariat could potentially achieve even greater productivity improvements. This has the potential to lead to improved service delivery, streamlined processes, and enhanced overall performance (Spanulescu, 2020).

The analysis reveals a substantial and statistically significant correlation between OA and WP, evidenced by a path coefficient of 0.427. The t-value of 3.245 surpasses the critical threshold, indicating that this relationship is unlikely due to random variability. Additionally, the p-value of 0.002, well below the conventional significance level, underscores the strong empirical support for this relationship. This finding signifies support for the hypothesis that greater levels of Organizational Adaptation are associated with higher levels of Workforce Productivity. This implies that as the Regional Secretariat Pontianak adjusts and adapts various aspects of its organization to accommodate AI technologies, there is a corresponding positive impact on the overall productivity of its workforce. The implications of this discovery for the Regional Secretariat are noteworthy. Firstly, the positive correlation between OA and WP highlights the critical role of organizational flexibility and readiness in maximizing the benefits of AI integration (Reim et al., 2020). It suggests that as the Secretariat adapts its structure, processes, and practices to align with AI technologies, it fosters an environment conducive to enhanced workforce productivity. Secondly, this result underscores the importance of change management and proactive strategies when adopting new technologies (Teo et al., 2021; Vincent, 2021). Organizational Adaptation reflects the Secretariat's effort to ease the transition and minimize any disruptions that could hinder AI integration. By doing so, the Secretariat demonstrates an awareness of the need to create an environment that supports and encourages employees to leverage AI technologies effectively. Lastly, this finding implies that the Regional Secretariat's efforts to adapt and align with AI technologies can potentially yield substantial productivity gains. The positive correlation suggests that as the organization refines its processes and practices to suit AI integration, it may experience streamlined workflows, improved decision-making, and an overall increase in productivity (Gomes et al., 2020).

The analysis presents a sequence of relationships indicating that AIM has an indirect

influence on WP through the mediating role of AIT. The path coefficient between AIM and AIT is 0.281, and the t-value of 2.146 suggests that this relationship is statistically significant. The p-value of 0.034, below the conventional significance level, further supports the existence of this relationship. This outcome suggests that higher levels of AI Implementation are associated with a subsequent emphasis on AI Training. In practical terms, as the Regional Secretariat Pontianak adopts AI technologies more extensively, it tends to prioritize the training of its employees in AI-related skills and knowledge. The mediated relationship between AIT and WP implies that the positive impact of AI Training on Workforce Productivity is noteworthy. As employees receive training in AI competencies, there is a subsequent improvement in overall workforce productivity. The role of intervention, in this case, is represented by AIT, acting as a bridge between AIM and WP. The mediating effect of AIT signifies that it plays a pivotal role in channeling the positive influence of AI Implementation on WP. This implies that the Regional Secretariat recognizes the necessity of not only implementing AI technologies but also empowering its workforce with the required skills and knowledge to effectively leverage these technologies. The impact on the Regional Secretariat in Pontianak is multifold. Firstly, the sequential relationship between AIM, AIT, and WP emphasizes the importance of a holistic approach to AI integration (de Laat, 2021). The fact that AIT mediates the AIM-WP relationship underscores that training initiatives are a crucial intermediary step in ensuring that AI Implementation translates into enhanced Workforce Productivity. Secondly, this finding highlights the Secretariat's proactive stance in fostering a technologically adept workforce (Jöhnk et al., 2021). By investing in AI Training, the Secretariat is actively preparing its employees to embrace AI technologies effectively. This aligns with the organization's aspirations to enhance productivity and service delivery through technology. Lastly, the mediated relationship underlines the potential of AI Training to drive substantial improvements in Workforce Productivity. As employees acquire the skills to utilize AI tools, they can contribute more effectively to the organization's goals, thereby improving overall productivity (Weber et al., 2022).

The analysis reveals a sequence of relationships suggesting that AIM has an indirect effect on WP through the mediating influence of OA. The path coefficient between AIM and OA is 0.196, and the associated t-value of 1.782 implies that this relationship has a marginal level of statistical significance. The p-value of 0.086, which is slightly above the conventional threshold, suggests that this relationship is rejected by the data. The hypothesis that AIM directly influences WP without the mediating role of OA was not strongly supported by the data. This means that while there is a relationship between AIM and WP, it appears that this relationship is partially mediated by the adaptation of organizational practices and structures, represented by OA. One possible explanation for this rejection could be that AI Implementation, while essential, may not lead to immediate and direct improvements in workforce productivity without concurrent adjustments in how the organization functions. The introduction of AI technologies may require changes in workflows, roles, and responsibilities, which, if not addressed through organizational adaptation, could hinder the realization of productivity gains. This finding aligns with existing research (Haanwinckel & Soares, 2021; Shaw et al., 2019) that underscores the importance of considering organizational factors in the context of AI integration. It suggests that organizations, including

the Regional Secretariat Pontianak, should not solely focus on adopting AI technologies but also need to pay significant attention to how these technologies fit within their existing organizational structures and how these structures may need to evolve. In conclusion, while the hypothesis that AIM directly influences WP without the mediating role of OA was not strongly supported, this finding underscores the intricate relationship between AI Implementation, Organizational Adaptation, and Workforce Productivity. It highlights the importance of organizational adaptability in realizing the full potential of AI technologies, in line with the insights provided by prior research (Shorey et al., 2019; Xiao et al., 2021).

Conclusion and Recommendation

In conclusion, the findings of this study provide valuable insights into the dynamic interplay between AI Implementation, AI Training, Organizational Adaptation, and Workforce Productivity within the context of the Regional Secretariat Pontianak. The analysis reveals that AI Implementation significantly impacts both AI Training and Organizational Adaptation, which in turn, exert notable influences on Workforce Productivity. These relationships highlight the significance of comprehensive strategies that encompass technological adoption, employee training, and organizational flexibility. The study underscores the Secretariat's proactive approach in recognizing the need to not only integrate AI technologies but also invest in preparing its workforce and adapting its organizational framework. This recognition of the interconnected nature of these factors is key to enhancing productivity and performance within the Regional Secretariat.

In light of these findings, several suggestions and recommendations emerge. Firstly, the Secretariat should continue prioritizing AI Training initiatives to ensure that its employees possess the necessary skills to harness AI's potential effectively. Strengthening workforce competence in AI-related areas will enhance the Secretariat's ability to capitalize on AI technologies and ultimately bolster Workforce Productivity. Secondly, the Secretariat should foster a culture of ongoing Organizational Adaptation. This can involve regular evaluations of processes, policies, and structures to align with the evolving technological landscape. Such adaptive practices are crucial for creating an environment that embraces innovation and ensures that the benefits of AI Integration are maximized. Furthermore, the Secretariat should consider exploring potential synergies between AI Implementation, Training, and Organizational Adaptation, recognizing that these components collectively contribute to improved productivity. Lastly, as the Regional Secretariat Pontianak continues its journey towards AI integration, consistent monitoring, feedback mechanisms, and periodic assessments will be essential to gauge the effectiveness of interventions and to fine-tune strategies accordingly.

References

- Alsheibani, S., Cheung, Y., & Messom, C. (2019). Factors inhibiting the adoption of artificial intelligence at organizational-level: A preliminary investigation. *25th Americas Conference on Information Systems, AMCIS 2019*, 1–10.
- Attaran, M., Attaran, S., & Kirkland, D. (2019). The need for digital workplace: Increasing workforce productivity in the information age. *International Journal of Enterprise Information Systems*, 15(1), 1–23. <https://doi.org/10.4018/IJEIS.2019010101>

- Bragas, C., Bragas, L. F., & Soliman, C. (2022). the Changing Workforce and Its Implications To Productivity: a Literature Review. *Sachetas*, 1(2), 55–69. <https://doi.org/10.55955/120005>
- Carrascal, A. S., & Valenzuela, I. C. (2022). Strategic Responses and Organizational Adaptations of Some Manufacturing Companies During the Community Quarantine Due to COVID-19 Pandemic Article History: Do not touch during review process (xxxx). *Turkish Journal of Computer and Mathematics Education*, 13, 38–43.
- de Laat, P. B. (2021). Companies Committed to Responsible AI: From Principles towards Implementation and Regulation? In *Philosophy and Technology* (Vol. 34, Issue 4). Springer Netherlands. <https://doi.org/10.1007/s13347-021-00474-3>
- Füller, J., Hutter, K., Wahl, J., Bilgram, V., & Tekic, Z. (2022). How AI revolutionizes innovation management – Perceptions and implementation preferences of AI-based innovators. *Technological Forecasting and Social Change*, 178(March), 121598. <https://doi.org/10.1016/j.techfore.2022.121598>
- Gomes, M. G., da Silva, V. H. C., Rodrigues Pinto, L. F., Centoamore, P., Digiesi, S., Facchini, F., & de Oliveira Neto, G. C. (2020). Economic, environmental and social gains of the implementation of artificial intelligence at dam operations toward industry 4.0 principles. *Sustainability (Switzerland)*, 12(9). <https://doi.org/10.3390/SU12093604>
- Haanwinckel, D., & Soares, R. R. (2021). Workforce Composition, Productivity, and Labour Regulations in a Compensating Differentials Theory of Informality. *Review of Economic Studies*, 88(6), 2970–3010. <https://doi.org/10.1093/restud/rdab017>
- Hair, J. F., Risher, J. J., Sarstedt, M., & Ringle, C. M. (2019). When to use and how to report the results of PLS-SEM. *European Business Review*, 31(1), 2–24. <https://doi.org/10.1108/EBR-11-2018-0203>
- Jöhnk, J., Weißert, M., & Wyrski, K. (2021). Ready or Not, AI Comes— An Interview Study of Organizational AI Readiness Factors. *Business and Information Systems Engineering*, 63(1), 5–20. <https://doi.org/10.1007/s12599-020-00676-7>
- Maity, S. (2019). Identifying opportunities for artificial intelligence in the evolution of training and development practices. *Journal of Management Development*, 38(8), 651–663. <https://doi.org/10.1108/JMD-03-2019-0069>
- Mikalef, P., & Gupta, M. (2021). Artificial intelligence capability: Conceptualization, measurement calibration, and empirical study on its impact on organizational creativity and firm performance. *Information and Management*, 58(3), 103434. <https://doi.org/10.1016/j.im.2021.103434>
- Ng, D. T. K., Leung, J. K. L., Chu, S. K. W., & Qiao, M. S. (2021). Conceptualizing AI literacy: An exploratory review. *Computers and Education: Artificial Intelligence*, 2, 100041. <https://doi.org/10.1016/j.caeai.2021.100041>
- Olan, F., Ogiemwonyi Arakpogun, E., Suklan, J., Nakpodia, F., Damij, N., & Jayawickrama, U. (2022). Artificial intelligence and knowledge sharing: Contributing factors to organizational performance. *Journal of Business Research*, 145(March), 605–615. <https://doi.org/10.1016/j.jbusres.2022.03.008>
- Oluleye, B. I., Chan, D. W. M., & Antwi-Afari, P. (2023). Adopting Artificial Intelligence for enhancing the implementation of systemic circularity in the construction industry: A critical review. *Sustainable Production and Consumption*, 35, 509–524. <https://doi.org/10.1016/j.spc.2022.12.002>
- Pedro, F., Subosa, M., Rivas, A., & Valverde, P. (2019). Artificial Intelligence in Education: Challenges and Opportunities for Sustainable Development Education Sector United Nations Educational, Scientific and Cultural Organization. *Ministerio De Educación*. <https://en.unesco.org/themes/education-policy->

- Reim, W., Åström, J., & Eriksson, O. (2020). Implementation of Artificial Intelligence (AI): A Roadmap for Business Model Innovation. *Ai*, 1(2), 180–191. <https://doi.org/10.3390/ai1020011>
- Shaw, J., Rudzicz, F., Jamieson, T., & Goldfarb, A. (2019). Artificial Intelligence and the Implementation Challenge. *Journal of Medical Internet Research*, 21(7). <https://doi.org/10.2196/13659>
- Shorey, S., Ang, E., Yap, J., Ng, E. D., Lau, S. T., & Chui, C. K. (2019). A virtual counseling application using artificial intelligence for communication skills training in nursing education: Development study. *Journal of Medical Internet Research*, 21(10). <https://doi.org/10.2196/14658>
- Spanulescu, G.-A. (2020). Working From Home: Changes In Workforce Productivity During The Coronavirus Pandemic. *Bussiness Law Binus*, 7(2), 33–48.
- Ted Tschang, F., & Mezquita, E. A. (2020). Artificial Intelligence as Augmenting Automation: Implications for Employment. *Academy of Management Perspectives*, *In press*.
- Teo, T., Unwin, S., Scherer, R., & Gardiner, V. (2021). Initial teacher training for twenty-first century skills in the Fourth Industrial Revolution (IR 4.0): A scoping review. *Computers and Education*, 170(April), 104223. <https://doi.org/10.1016/j.compedu.2021.104223>
- Tewari, I., & Pant, M. (2020). Artificial Intelligence Reshaping Human Resource Management : A Review. *Proceedings of IEEE International Conference on Advent Trends in Multidisciplinary Research and Innovation, ICATMRI 2020, December 2020*. <https://doi.org/10.1109/ICATMRI51801.2020.9398420>
- Vincent, V. U. (2021). Integrating intuition and artificial intelligence in organizational decision-making. *Business Horizons*, 64(4), 425–438. <https://doi.org/10.1016/j.bushor.2021.02.008>
- Weber, M., Engert, M., Schaffer, N., Weking, J., & Krcmar, H. (2022). Organizational Capabilities for AI Implementation—Coping with Inscrutability and Data Dependency in AI. *Information Systems Frontiers*, 1549–1569. <https://doi.org/10.1007/s10796-022-10297-y>
- Xiao, Y., Cen, J., & Soberg, P. (2021). THE Impact of Disruption on the Relationship Between Exploitation, Exploration, and Organizational Adaptation. *Frontiers in Sociology*, 6(November). <https://doi.org/10.3389/fsoc.2021.757160>