

Employee Performance Improvement Model through Field Leadership and Work-Life Balance with Employee Engagement as a Mediating Variable (Study on Intensive Shrimp Farms in Cilacap Regency)

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Abstract. *This study aims to analyze and examine the effects of field leadership and work-life balance on employee performance, with employee engagement as a mediating variable, in intensive shrimp farming operations in Cilacap Regency. The study employs a quantitative approach with an explanatory research design. The population consists of 145 employees, all of whom were included as respondents using a census method. Data were collected through a five-point Likert scale questionnaire that has met validity and reliability requirements. Data analysis was conducted using Structural Equation Modeling–Partial Least Squares (SEM-PLS) with the assistance of SmartPLS 4. The results indicate that field leadership and work-life balance have a positive and significant effect on employee engagement. Furthermore, employee engagement is found to have a positive and significant effect on employee performance. However, field leadership and work-life balance do not have a significant direct effect on employee performance. Mediation analysis reveals that employee engagement acts as a full mediator in the relationship between field leadership, work-life balance, and employee performance. The coefficient of determination indicates that the model has a moderate explanatory power for both employee engagement and employee performance. The novelty of this study lies in the examination of an integrative model that links field leadership and work-life balance as job resources within the Job Demands–Resources framework in the context of the intensive shrimp farming industry, which remains underexplored in the human resource management literature in the aquaculture sector. The practical implications highlight the importance of strengthening operational leadership and implementing work-life balance policies to enhance employee engagement as a key mechanism for achieving sustainable performance.*

Keywords: *Employee Engagement; Employee Performance; Field Leadership; SEM-PLS; Work-Life Balance.*

1. Introduction

The operational success of intensive shrimp farming is not solely determined by the technical aspects of cultivation, but also by the effectiveness of human resource (HR) management. The intensive, target-driven, and demanding nature of long working hours often causes employees to face high levels of pressure, stress, and fatigue. This situation has the potential to reduce motivation and psychological engagement, ultimately impacting operational performance. A study by Angela & Sharma (2023) revealed that due to the intensive and labor-intensive nature of shrimp farming, employees often experience fatigue, a lack of work-life balance, and low psychological engagement with their work, which directly impacts farm operational performance. Intensive shrimp farming in Cilacap Regency, Central Java, is a coastal agribusiness sector that plays a crucial role in supporting the regional economy. The intensive whiteleg shrimp farming system in this region demands effective human resource management to maintain productivity and business sustainability. Intensive shrimp farming operations are characterized by intensive, complex, and target-driven work, requiring employees to work under high pressure, long working hours, and limited time flexibility. These conditions make factors such as work environment, leadership style, motivation, and work-life balance important aspects that influence employee engagement and performance in the intensive shrimp farming sector in Cilacap.

One important factor in improving employee performance is field leadership, which is leadership that is directly present at the work site. This type of leadership is believed to be able to boost motivation, improve two-way communication, and build employee engagement through consistent technical direction and moral support. Nikolova et al. (2019) showed that a leadership style that involves employees (engaging leadership) has a significant influence in strengthening work engagement by increasing job resources, especially in work environments that require active participation in the field. Similar results were found by Kresna & Suryani (2025), who confirmed that field leadership styles, particularly transformational and transactional, are positively related to the level of employee engagement in public organizations, thus impacting improved team performance in the field. However, in practice, leadership in many shrimp farms still tends to be administrative and less present in the daily work dynamics, so the opportunity to build optimal employee psychological engagement has not been fully achieved.

Another crucial factor is work-life balance, namely the ability of employees to maintain a balance between work and their personal lives. High workloads, long hours, and the pressure of harvest targets in shrimp farming can lead to fatigue, stress, and even burnout. A study by Rasool et al. (2020) confirmed that a good work-life balance significantly increases employee engagement and reduces work stress, which ultimately has a positive impact on performance. Unfortunately, in many intensive farming practices, the work-life balance aspect is often neglected in favor of achieving operational targets or relatively little consideration is given to the long-term impact on human resource performance.

These two factors (field leadership and work-life balance) are closely related to employee engagement, which is a positive psychological state when employees demonstrate dedication, energy, and focus on their work (Bakker & Albrecht, 2018). Employee engagement has been shown to be a strong mediating variable between organizational factors and employee performance. Several previous studies have focused more on the technical aspects of cultivation or production management, while managerial aspects and organizational behavior in the shrimp pond work environment are still relatively underexplored. Therefore, this study focuses on developing and testing a model for improving employee performance with employee engagement as a mediating variable in the relationship between field leadership and work-life balance on employee performance in intensive shrimp ponds.

2. Research Methods

This study uses a quantitative approach with an explanatory research design. The goal is to explain the causal relationship between the independent variables (field leadership and work-life balance) and the dependent variable (employee performance) and the mediating variable (employee engagement). The analysis was conducted using a Structural Equation Modeling (SEM) approach based on Partial Least Squares (PLS) to comprehensively test both direct and indirect influences.

3. Results and Discussion

3.1. General Description of Research Object

a. Respondent Profile

This section presents a comprehensive description of the empirical characteristics of the respondents who were the subjects of this study at an intensive shrimp farming unit in Cilacap Regency. The presentation of the respondent profiles is not intended solely as a descriptive statistical presentation, but rather as an analytical foundation that provides context for the dynamics of the organization where the research was conducted. Respondent demographic and occupational characteristics are considered important to map because they have the potential to influence perceptions, attitudes, and work behaviors related to the variables studied.

In human resource management studies, factors such as gender, age, education level, field of work, and length of service are often related to perceived leadership patterns, perceived work-life balance, employee engagement, and individual performance. Therefore, understanding the respondent profile provides a conceptual basis for interpreting subsequent analysis results, particularly in explaining the relationship between Field Leadership, Work-Life Balance, Employee Engagement, and Employee Performance.

By systematically mapping the characteristics of respondents, this study not only provides a picture of the workforce composition in intensive shrimp ponds but also builds a contextual framework that strengthens the validity of interpreting the empirical findings. These respondent profiles are integral to understanding how research variables interact and operate within the realities of fieldwork, which are characterized by technical complexity, operational pressures, and unique socio-organizational dynamics.

Table 3.1 Respondent Demographics

Information	Total	Percentage
Number of Samples	145	100.0%
Gender		
Man	136	94.4%
Woman	9	6.3%
Age Range		
<25 years	33	22.9%
25-40 years old	67	46.5%
>40 years	45	31.3%
Education		
Elementary-Middle School	49	34.0%
High School/Vocational School	79	54.9%
Diploma/S1-S2	17	11.8%

Field of work

Manager/Technician/Asst Technician	11	7.6%
Laboratory Analyst	2	1.4%
Mechanics/Engineering	12	8.3%
Feeder/Pond Direct Support	86	59.7%
Admin/Data/Finance	3	2.1%
Security	18	12.5%
Other Support	13	9.0%

Working Period in the Fish Pond

<1 year	15	10.4%
1-3 years	47	32.6%
>3 years	83	57.6%

Source: Processed primary data, 2026

b. Respondent Characteristics Based on Gender

The majority of respondents were male (136 people) (94.4%), while 9 respondents were female (6.3%). This composition indicates the dominance of male workers in intensive shrimp farming operations.

This phenomenon aligns with the physical, technical, and field-based characteristics of intensive aquaculture work, including manual and automated feeding, water wheel management, pond bottom siphoning, infrastructure repair, and water quality monitoring, with flexible working hours, even at night. A study (FAO, 2022) confirmed that the global

fisheries and aquaculture sector remains dominated by male labor at the operational level, particularly in intensive production systems.

From a management perspective, this gender dominance has implications for field leadership styles. Masculine work environments tend to emphasize a leadership approach based on assertiveness, clear instructions, and direct supervision. However, modern leadership literature suggests that effectiveness is no longer determined solely by structural power, but rather by a leader's ability to build trust and team engagement (Saks, 2022).

Thus, the gender composition in this study provides an important context in understanding the dynamics of the interaction between field leadership and employee work engagement.

c. Respondent Characteristics Based on Age

The majority of respondents were aged 25–40 years (46.5%), followed by those aged >40 years (31.3%), and those under 25 years (22.9%). This distribution indicates that the pond workforce is in its productive age phase, with a combination of work energy and experience maturity.

In career cycle theory, the age group of 25–40 represents the establishment and advancement phase, where individuals tend to be highly motivated to demonstrate optimal performance and develop competencies (Saks et al., 2022). In the context of intensive shrimp farming, which demands rapid response to changes in water quality, diseases such as AHPND and EHP, and production target pressures, this age group is relatively adaptable to technology and data-driven management systems.

The 31.3% age group over 40 years old indicates the presence of a senior workforce with strong practical experience. In experience-based industries like aquaculture, tacit knowledge is often an irreplaceable organizational asset (Oranga, 2023).

This combination of young and senior employees has the potential to create a dynamic internal knowledge transfer. However, without effective field leadership, generational differences can create gaps in perceptions of work discipline, technology, and operational standards.

d. Respondent Characteristics Based on Education

The majority of respondents had a high school/vocational high school education (54.9%), followed by elementary school–junior high school (34.0%), and diploma/bachelor's–master's degree (11.8%). This composition reflects the characteristics of the intensive aquaculture industry, which places greater emphasis on operational technical skills than on a high-level formal academic background.

According to Human Capital Theory, formal education plays a role in improving analytical skills, problem-solving skills, and adapting to innovation and technological change in the workplace. However, in technical and experience-based work contexts, competencies acquired through field learning and the accumulation of tacit knowledge are often the primary determinants of performance in specific operational tasks. Thus, human capital is formed not only by formal education but also by work experience, which strengthens technical competency and organizational performance (Christabel et al., 2024).

The low proportion of those with higher education (11.8%) demonstrates the importance of a field leadership system capable of translating operational standards and management strategies into clear, simple, and applicable instructions. In this context, effective field leadership is a key factor in ensuring production and biosecurity standards are maintained.

e. Respondent Characteristics Based on Field of Work

The majority of respondents work as Feeder/Pond Support (59.7%), followed by Security (12.5%), Mechanic/Engineering (8.3%), Manager/Assistant Technician (7.6%), Other Support (9.0%), Admin/Finance (2.1%), and Laboratory Analyst (1.4%).

This distribution indicates that the study is highly representative of the core operational units of aquaculture. The Feeder/Pond Support position is the spearhead of production, directly involved in feed management, shrimp health control, and daily water quality monitoring. In intensive systems, even small operational errors can significantly impact survival rates and feed conversion ratios.

This predominantly operational workforce structure emphasizes the relevance of the field leadership variable. Effective leadership at the field level serves as a link between management policies and daily technical implementation. A study by Breevaart & Bakker (2018) within the Job Demands-Resources Model confirms that superior support is a crucial resource for enhancing work engagement in high-demand jobs.

f. Characteristics of Respondents Based on Years of Work

The majority of respondents had tenure of >3 years (57.6%), followed by 1–3 years (32.6%), and <1 year (10.4%). This data indicates a relatively good retention rate in an industry known for its high work pressure.

From a human resource management perspective, long tenure correlates with increased organizational commitment and performance stability (Saks et al., 2022). In the intensive aquaculture sector, more than three years of experience indicates that employees have experienced multiple cultivation cycles and understand seasonal risk patterns, disease management, and the dynamics of partial harvest targets.

This relatively high retention rate can be an indicator of a relatively stable managerial system. However, the sustainability of retention remains highly dependent on work-life balance and the quality of field leadership. The intensive, 24-hour operation of the aquaculture industry has the potential to lead to burnout if not managed properly (Mazzetti & Schaufeli, 2022).

g. Contextual Analysis of Respondent Profiles

Overall, the respondent profile indicates that the intensive shrimp farming workforce in Cilacap Regency is dominated by men of productive age, with secondary education, working in core operational positions, and with relatively long tenure. This composition demonstrates a field-based organizational structure with a heavy reliance on technical coordination and direct leadership.

These characteristics provide a highly relevant context for testing the research model, particularly in assessing how Field Leadership and Work-Life Balance influence Employee Engagement and thus employee performance. In a work environment with high physical demands, biological risks, and production target pressures, employee engagement is not merely a psychological aspect but a strategic factor determining sustainable productivity.

Thus, the respondent profile in this study not only represents the workforce structure, but also strengthens the empirical justification that the variables tested have strong contextual relevance in the intensive shrimp farming industry.

h. Organizational Structure of Intensive Shrimp Farms

The organizational structure of intensive shrimp farming is functional, with a relatively simple vertical hierarchy. This structure is designed to ensure speedy decision-making and effective daily operational oversight.

In general, the organizational structure of intensive shrimp ponds includes a Director/Owner, Pond Operations Manager, Field Supervisor (Field Leader)/Cultivation Technician, Laboratory Analyst, Mechanics and Electrical, Administration and Finance, Security and Pond Boy/Field Workers.

i. Hierarchical Pattern and Coordination Flow

An organizational structure demonstrates a clear chain of command from top management to field workers. However, in operational practice, coordination is cross-functional, including:

- Water quality evaluation involves aquaculture technicians and laboratory analysts.
- Harvest decisions involve operational managers and owners.
- Growth sampling evaluation involves managers and technicians

This coordination model shows that organizational effectiveness is highly dependent on effective vertical and horizontal communication.

j. Strategic Role of Field Leadership

The Field Supervisor, or Field Leader, plays a central role in the farm's organizational system. This position is responsible for daily water quality monitoring, feeding supervision, work schedule management, disease prevention coordination, and technician performance evaluation.

In management literature, engaging leadership contributes to increased employee engagement (Decuyper & Schaufeli, 2020). The presence of leaders in daily activities increases support, role clarity, and work motivation. Therefore, within the organizational structure of a fish farm, field leadership serves as a link between managerial policies and technical implementation.

k. Characteristics of Organizations as Biological Production Systems

Intensive shrimp farming is a biological production system with a high degree of uncertainty. Unlike the manufacturing industry, production output is influenced by environmental factors such as water quality, temperature, plankton, and potential pathogen attacks. This type of work environment can be categorized as a high-demand environment. Within the Job Demands–Resources (JD–R) framework, high work demands must be balanced with the availability of organizational resources to avoid compromising performance.

These resources in this study are represented by:

- Field Leadership as a structural resource
- Work-Life Balance as a psychosocial resource
- Employee Engagement as a psychological mechanism that bridges resources and performance

Thus, the organizational structure of the pond supports the relevance of the research model tested in the next chapter.

4. Conclusion

Field Leadership has a positive and significant effect on Employee Engagement. Field leadership has been shown to significantly increase employee work engagement. The leadership's role in providing technical direction, operational support, and motivation is a key job resource that strengthens vigor, dedication, and absorption. This finding is consistent with the descriptive results that show Field Leadership is in the high category, although aspects of

caring and participatory communication still need to be strengthened. Work-Life Balance has a positive and most dominant effect on Employee Engagement. Work-Life Balance is the variable with the greatest influence on Employee Engagement. Although descriptively it is in the medium category, structurally this variable is a key factor in maintaining employee psychological stability amidst the high demands of intensive shrimp farming work. This indicates that work-life balance is the main foundation for forming work engagement. Employee Engagement has a positive and significant effect on Employee Performance. Employee Engagement has been proven to be a major determinant of employee performance. Employees with high work engagement demonstrate productivity, accuracy in monitoring water quality, compliance with SOPs, and quick response to biological risks. This finding confirms that operational performance is strongly influenced by employee psychological conditions.

5. References

Journals:

- Aggarwal, S. (2024). Impact of dimensions of organisational culture on employee satisfaction and performance level in select organisations. *IIMB Management Review*, 36(3), 230–238. <https://doi.org/10.1016/j.iimb.2024.07.001>
- Albrecht, S. L., Bakker, A. B., Gruman, J. A., Macey, W. H., & Saks, A. M. (2015). Employee engagement, human resource management practices and competitive advantage: An integrated approach. In *Journal of Organizational Effectiveness* (Vol. 2, Issue 1, pp. 7–35). Emerald Group Holdings Ltd. <https://doi.org/10.1108/JOEPP-08-2014-0042>
- Algarni, N. A., Patrick, M., Alqarni, N. M., & Alotaibi, M. M. (2020). The effects of cultural aspects and leadership practices on the healthcare organizations' performance: The case of Saudi Arabia. *IBIMA Business Review*, 2021. <https://doi.org/10.5171/2020.790792>
- Aliyah, A. N., Sumardi, & Reni, A. (2023). Analysis of The Influence of Organizational Commitment and Work Discipline on Employee Performance with Job Satisfaction as An Intervening Variable. *Economics and Business Journal (ECBIS)*, 1(6), 811–822. <https://doi.org/10.47353/ecbis.v1i6.65>
- Angela, S. A. D., & Sharma, A. (2023). Analysis of Socioeconomics and Occupational Dimensions of Shrimp Farmers of Tamil Nadu. *Aquaculture Research*, 2023. <https://doi.org/10.1155/2023/2457208>
- Ariasari, A. N., & Tjahjono, H. K. (2024). Trends and Relationships Between Work-Life Balance and Employee Performance: A Scientometric Analysis. *Society*, 12(2), 294–318. <https://doi.org/10.33019/society.v12i2.703>
- Bakker, A. B., & Albrecht, S. (2018). Work engagement: current trends. *Career Development International*, 23(1), 4–11. <https://doi.org/10.1108/CDI-11-2017-0207>

- Bakker, A. B., & Demerouti, E. (2024). Job Demands–Resources Theory: Frequently Asked Questions. *Journal of Occupational Health Psychology*, 29(3), 188–200. <https://doi.org/10.1037/ocp0000376>
- Bakker, A. B., Demerouti, E., & Vergel, A. S. (2023). *Job Demands – Resources Theory : Ten Years Later ; Annual Review of Organizational Psychology and Organizational Behavior*. 25–53.
- Bernardin & Russell. (2018). Human Resource Management : Personnel Human Resource Management. *Mismain.Bsa.Kent.Edu*, 6(January 2009), 6–21. <https://open.umn.edu/opentextbooks/BookDetail.aspx?bookId=71>
- Blau, P. M., Wiley, J., York, N., London, •, & Sydney, •. (1964). *Exchange and Power in Social Life*.
- Breevaart, K., & Bakker, A. B. (2018). Daily job demands and employee work engagement: The role of daily transformational leadership behavior. *Journal of Occupational Health Psychology*, 23(3), 338–349. <https://doi.org/10.1037/ocp0000082>
- Campbell, J. P., & Wiernik, B. M. (2015). The Modeling and Assessment of Work Performance. In *Annual Review of Organizational Psychology and Organizational Behavior* (Vol. 2, pp. 47–74). Annual Reviews Inc. <https://doi.org/10.1146/annurev-orgpsych-032414-111427>
- Cao, V. Q., & Dong, C. N. T. (2024). The mediating role of work engagement in the impact of authentic leadership and organizational justice on employee mental health. *Cogent Psychology*, 11(1). <https://doi.org/10.1080/23311908.2024.2432740>
- Christabel, M., Hasya, A., & Muharam, H. (2024). *Human capital on organizational performance : The essence of knowledge sharing practices*. 6(2).
- Cropanzano, R., & Mitchell, M. S. (2005). Social exchange theory: An Interdisciplinary review. In *Journal of Management* (Vol. 31, Issue 6, pp. 874–900). <https://doi.org/10.1177/0149206305279602>
- Decuyper, A., & Schaufeli, W. (2020). Leadership and work engagement: Exploring explanatory mechanisms. *German Journal of Human Resource Management*, 34(1), 69–95. <https://doi.org/10.1177/2397002219892197>
- Dwitanti, E., Murwani, F. D., & Siswanto, E. (2023). the Effect of Work-Life Balance on Employee Performance Through Work Stress and Workload. *International Journal of Business, Law, and Education*, 4(2), 569–586. <https://doi.org/10.56442/ijble.v4i2.211>
- Englmaier, F., Grimm, S., Grothe, D., Schindler, D., & Schudy, S. (2025). The value of leadership: Evidence from a large-scale field experiment. *Leadership Quarterly*, 36(3), 101869. <https://doi.org/10.1016/j.leaqua.2025.101869>
- Fadlan, A. F., Sukirman, Nuryadi, S., & Limakrisna, N. (2025). How Work-Life Balance Factors and Employee Performance are Systematically Reviewed Based on Moderation and

- Mediation Factors in the Digital and Hybrid Work Era? *JBMP (Jurnal Bisnis, Manajemen Dan Perbankan)*, 11(2), 297–306. <https://doi.org/10.21070/jbmp.v11i2.2163>
- FAO. (2022). *WORLD FISHERIES AND AQUACULTURE, The State of World Fisheries and Aquaculture 2022: Towards blue transformation*. FAO. <https://doi.org/https://doi.org/10.4060/cc0461en>
- Fauziah, T., Yuningsih, E., Silaningsih, E., & Bogor, D. (2024). *Peningkatan kinerja melalui work life balance dan employee engagement: kepuasan kerja sebagai variabel intervening*. 6(3), 561–576.
- Gallup. (2024). State of the Global Workplace. *Employee Engagement Insights for Business Leaders Worldwide*, 1–122. [http://www.gallup.com/file/services/176735/State of the Global Workplace Report 2013.pdf](http://www.gallup.com/file/services/176735/State%20of%20the%20Global%20Workplace%20Report%202013.pdf)
- Greenhaus, J. H., & Allen, T. D. (2011). Work-family balance: A review and extension of the literature. *Handbook of Occupational Health Psychology (2nd Ed.)*, August, 165–183. <http://ovidsp.ovid.com/ovidweb.cgi?T=JS&PAGE=reference&D=psyc8&NEWS=N&AN=2010-06010-009>
- Guenther, P., Guenther, M., Ringle, C. M., Zaefarian, G., & Cartwright, S. (2023). Improving PLS-SEM use for business marketing research. *Industrial Marketing Management*, 111(October 2020), 127–142. <https://doi.org/10.1016/j.indmarman.2023.03.010>
- Haar, J., & Brougham, D. (2022). Work antecedents and consequences of work-life balance: A two sample study within New Zealand. *International Journal of Human Resource Management*, 33(4), 784–807. <https://doi.org/10.1080/09585192.2020.1751238>
- Haar, J. M., Russo, M., Suue, A., & Ollier-Malaterre, A. (2020). Outcomes of Work-Life Balance on Job Satisfaction, Life Satisfaction and Mental Health: a Study Across Seven Cultures. *Journal of Vocational Behavior*, 85, 361–373. <https://doi.org/10.1016/j.jvb.2014.08.010>
- Hakanen, J. J., Rouvinen, P., & Ylhäinen, I. (2021). The impact of work engagement on future occupational rankings, wages, unemployment, and disability pensions—a register-based study of a representative sample of Finnish employees. *Sustainability (Switzerland)*, 13(4), 1–19. <https://doi.org/10.3390/su13041626>
- Imawan, I., & Lesmana, M. T. (2024). Work-Life Balance, Work Engagement and Employee Performance: An Examining the Mediating Role of Job Satisfaction. *International Journal of Business Economics (IJBE)*, 5(2), 166–186. <https://doi.org/10.30596/ijbe.v5i2.18210>
- Indirasari, I., & Mardiana, S. (2022). Pengaruh Work Life Balance dan Employee Engagement terhadap Kinerja Pegawai pada Pt. Bank Mandiri (Persero) Tbk Outlet Prioritas Jakarta Pondok Indah. *Jurnal Arastirma*, 2(2), 245. <https://doi.org/10.32493/arastirma.v2i2.23176>

- Jang, E. (2022). Authentic Leadership and Task Performance via Psychological Capital: The Moderated Mediation Role of Performance Pressure. *Frontiers in Psychology, 13*(May). <https://doi.org/10.3389/fpsyg.2022.722214>
- Josephine Oranga. (2023). Tacit Knowledge Transfer and Sharing: Characteristics and Benefits of Tacit & Explicit Knowledge. *Journal of Accounting Research, Utility Finance and Digital Assets, 2*(2), 736–740. <https://doi.org/10.54443/jaruda.v2i2.103>
- Katili, P. B., Wibowo, W., & Akbar, M. (2021). The Effects of Leaderships Styles, Work-Life Balance, and Employee Engagement on Employee Performance. *Quantitative Economics and Management Studies, 2*(3), 199–205. <https://doi.org/10.35877/454ri.qems319>