

Motivation as a Mediator of Communication and Work Discipline on Employee Performance : A Study at Karangasem Hospital

I Wayan Yogi Rangga Permana^{1*}, Ida Ketut Kusumawijaya² and
Ni Luh Sili Antari³

^{1,3}*Fakultas Bisnis, Pariwisata Dan Pendidikan, Universitas Triatma Mulya, Indonesia,*

²*Universitas Tabanan, Indonesia*

¹202261101108@triatmamulya.ac.id, ²202261101108@triatmamulya.ac.id,

³sili.antari@triatmamulya.ac.id

Abstract- This research examines the role of communication and discipline in influencing employee performance, with motivation serving as a link, at Karangasem Regional Hospital. In the healthcare sector, the quality of employee performance is crucial for institutional success and is closely tied to effective communication and consistent discipline. The study involved 73 medical personnel using a census approach, with data collected through questionnaires. The analysis included validity, reliability, classical assumption tests, and path analysis. The findings indicate that both communication and discipline positively impact work motivation. This increase in motivation correlates with enhanced employee performance. Furthermore, motivation was found to act as a mediator between communication and work performance, though no similar effect was observed between work discipline and performance. Based on these results, the study recommends that hospital management focus on improving communication patterns among medical staff and strengthen discipline standards to boost motivation and productivity. These findings offer valuable insights for human resource management within the regional health service environment and provide a foundation for future research in similar fields. This research underscores the importance of fostering a motivating work environment through improved communication and discipline to optimize employee performance in healthcare settings.

Keywords: Communication, Motivation, Performance, Work Discipline

1. INTRODUCTION

The achievement of a organisation is greatly affected by performance. Optimal performance will produce maximum, efficient, and productive results, which ultimately have a positive impact on the organisation as a whole [1]. As organisations develop, employee performance becomes increasingly important because it determines the effectiveness and efficiency in every operational activity [2]. Individual performance reflects how well a person fulfills their roles and responsibilities [3]. For organizations aiming to progress, ensuring optimal performance from each employee to meet expectations is essential. Clear communication and consistent discipline play crucial roles in encouraging improved performance. Effective communication helps align perceptions

Received: 01 July 2025

Reviewed: 08 July 2025

Accepted: 17 July 2025

*Corresponding Author : 202261101108@triatmamulya.ac.id

between superiors and subordinates, boosting morale and overall contribution [4]. Similarly, consistent discipline supports motivation and enhances performance. The study finds that high work ethic and discipline contribute to increased motivation, leading to better work results.

The previous study examines how communication and discipline influence motivation, which in turn affects employee performance, with motivation acting as a mediator [5]. It addresses the gap in studies combining communication, discipline, and motivation in the local health sector, particularly among medical personnel at Karangasem Regional Hospital. While many studies have explored the impact of communication and discipline on performance in various sectors, few focus on the health sector. The findings of this study are expected to provide a comprehensive understanding of how these factors interact in the context of Karangasem Regional Hospital and offer practical recommendations for improving employee performance through better management of communication, discipline, and motivation.

This study draws on previous research to explore the relationship between communication, discipline, and motivation in employee performance. Other research said that PT Pos Indonesia Regional Office I Medan evaluated the impact of communication and work environment conditions on work motivation, which acts as a mediator between work discipline and employee productivity [8]. The results indicated that communication did not significantly affect motivation, while work environment conditions positively influenced motivation.

The Port Authority in Batam analyzed the effects of work discipline, competence, and communication on employee performance, with work motivation as an intervening variable [9]. The results showed that work discipline, competence, and communication significantly positively impacted work motivation, which in turn influenced employee performance. However, the indirect effect of work discipline and competence on performance through motivation was not significant, while communication had a significant indirect effect on performance via motivation as a mediator. This research highlights the role of motivation as a mediator in the relationship between communication, discipline, and employee performance.

2. THEORETICAL STUDY

2.1. Communication

Communication plays a crucial role in organizations, especially in supporting administrative activities that require coordination, clarity of information, and management, while involving all members of the organization [9]. As organizations grow, the challenges they face become more complex [10]. Effective communication between leaders and subordinates becomes vital to handle the increasing tasks and ensure efficiency in completing administrative duties [11]. Communication is the act of delivering messages and ensuring understanding between individuals [12]. It involves the exchange of information aimed at influencing the thoughts, perceptions, and attitudes of the recipient, creating collaboration, and achieving the organization's goals [13].

Some indicators of effective communication: (1) comprehension refers to the ability to accurately capture the message according to the communicator's intention, (2) a pleasant atmosphere facilitates effective communication by reducing tension and enhancing success in conveying information, (3) the impact on attitudes indicates that successful communication influences the recipient's behavior or attitude, (4) relationship enhancement occurs when communication strengthens bonds between individuals or groups, fostering mutual support, (5) action reflects the successful application of the message, where both parties take the necessary steps based on the communication exchange [14], [15].

2.2. Work Discipline

Work discipline refers to employees' attitudes toward adhering to the rules and norms set by the company, with the goal of strengthening commitment to achieve the organization's objectives [16]. It encompasses behaviors and actions that align with the established rules, where sanctions are imposed if these rules are violated [17]. Work discipline serves as a control mechanism for leaders to modify employee behavior and ensure compliance with the company's regulations and operational standards [18]. It is a strategy used by managers to direct employees toward harmony with organizational regulations, ensuring that their actions support the company's objectives and overall efficiency.

Several factors contribute to work discipline, including attendance rate, work procedures, obedience to superiors, work awareness, and responsibility: (1) attendance rate serves as a key indicator, where high attendance reflects strong discipline, (2) adherence to work procedures ensures an efficient and goal-aligned work environment, (3) obedience to superiors is crucial for minimizing errors and achieving job objectives, (4) work awareness is shown through employees taking initiative, completing tasks on time, and working independently, (5) responsibility involves commitment to meeting quality standards and utilizing company resources effectively [20].

2.3. Motivation

Motivation is the element that drives a person's actions in various aspects of behaviour, with regard to direction, strength, and persistence in achieving goals [20]. Motivation can be understood as a process of forming behaviour which is characterized by various activities or actions, psychological factors, encouragement of work enthusiasm can come from internal personal aspects and from the influence of the surrounding environment, both of which have a significant role in encouraging individuals to achieve their desired goals [21]. Intrinsic factors include internal drives such as the need to develop or achieve personal fulfilment, while extrinsic factors involve motivation derived from external influences, such as rewards, recognition or material rewards.

Motivation is the process of providing guidance, direction, resources and rewards that can inspire and interest a person to perform in accordance with expectations. Motivation also includes efforts to trigger behaviour, keep behaviour going, and direct action towards a specific goal. Therefore, needs and desires (motives) become the impetus for employees to act [22]. Motivation is the driving force behind a person's actions, influencing their direction, strength, and persistence in achieving goals [20]. It is a process of behavior formation influenced by both internal personal factors and external environmental factors [21]. Internal drives, such as the need for personal development or fulfillment, are considered intrinsic motivation, while external rewards like recognition or material incentives are considered extrinsic motivation [22]. Motivation involves providing guidance, direction, resources, and rewards to inspire individuals to perform as expected and work toward specific goals [23].

Motivation can be assessed through various indicators based on Maslow's hierarchy of needs: (1) basic physical needs such as food, housing, and sleep, which the company can address by providing adequate salaries, (2) safety needs, which include physical, emotional, and financial security, such as stable employment and a safe work environment, (3) social needs, which involve relationships and team collaboration, (4) esteem needs, where employees are motivated by recognition, respect, and status, often through promotions or awards, (5) self-actualization needs, where employees are motivated by personal development, training, and challenging projects that help them reach their full potential [24].

2.4. Employee Performance

As an organisation grows, the number of employees involved in supporting the smooth operation of the organisation will increase, while taking into account other factors of production. Organisational success relies heavily on employee performance. Employees who work productively, efficiently and committedly will make a significant contribution to achieving organisational goals. Performance refers to the results of the achievement of individuals who work when fulfilling their roles and responsibilities, which is reflected in the quality and amount of work produced [24]. Performance refers to the readiness of individuals or groups to carry out or increase activities in line with their responsibilities, with the aim of achieving the desired results. Performance describes the extent to which a person or team can fulfil their duties and produce achievements Referring to the directions and achievements that have been formulated in planning [25].

The level of employee productivity is a reflection of work output and professional behaviour shown within A specific timeframe, defined as evaluated based on the level of individual ability to complete work in accordance with applicable standard guidelines or references that have been determined. Employees with high performance generally show better productivity, achieve optimal results, have adequate skills, and can meet or even exceed the expectations given by the organisation. High-performing employees are those who are able to complete all assigned tasks and perform operational functions in an optimal, effective, and efficient manner. Employee performance evaluation is very important, because it aims to evaluate how effectively an employee can carry out work in accordance with his function properly. In addition, performance evaluation also helps organisations in determining which employees are worth retaining [26].

2.5. The Role of Communication and Discipline in Enhancing Employee Motivation and Performance

Effective communication plays an important role in increasing work motivation. Clear and well-structured communication helps clarify job tasks and objectives, and facilitates harmonious relationships between superiors and employees play an important role in building harmonious working conditions, which in turn has the potential to encourage increased motivation at work. Effective communication contributes significantly to the growth of employee motivation, as the way information is conveyed and understood within an organisation can influence the extent to which employees feel valued, engaged and motivated [27]. High levels of work discipline have been shown to contribute positively to increased employee motivation. Discipline encourages individuals to work in a more purposeful manner, show strong commitment, and make maximum efforts in achieving predetermined targets efficiently and effectively, such as punctuality in attendance and compliance with regulations, it has the potential to encourage employees to improve their performance and spur their work motivation. Previous studies show that effective work discipline has a direct relationship with increased work motivation [28].

2.6. The Role of Motivation as A Mediator

Work motivation serves as an intervening variable that connects the effects of independent variables like communication and discipline to employee performance outcomes. Optimal motivation enhances the positive effects of communication and discipline, ultimately improving employee performance. Highly motivated individuals work with more enthusiasm, responsibility, and focus, aligning with organizational expectations and achieving maximum results. Motivation involves drive, goal focus, and perseverance in meeting set targets. In the work environment, it encourages efficiency, supports personal goal achievement, and contributes significantly to organizational success by boosting productivity, engagement, and quality work outcomes [29]. Based on theoretical and empirical analysis, the research conceptual model can be explained as

follows.

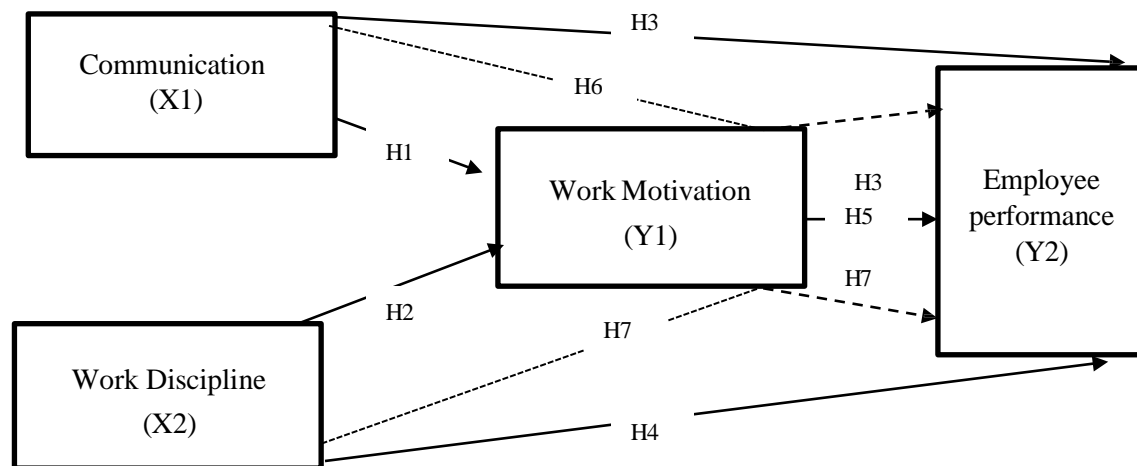


Figure 1. Conceptual Framework

3. RESEARCH METHODS

This study investigates the impact of communication and work discipline on the performance of medical personnel at Karangasem Regional Hospital, with motivation serving as an intermediary variable. The research focuses on three main variables: communication (X1), work discipline (X2), and employee performance (Y2), with motivation (Y1) as the mediator. A quantitative approach was used, collecting data via surveys, direct observations, and documentation. The population of the study consisted of 73 medical personnel, and a census sampling technique was applied. A five-point Likert scale questionnaire, developed based on theoretical indicators for each variable, was used for data collection. The results confirmed that all questionnaire items were valid, and reliability tests showed high internal consistency. Descriptive analysis was performed to assess respondents' perceptions, followed by path analysis to examine causal relationships between the variables. Classical assumption tests confirmed the validity of the model, with normal distribution, no multicollinearity, and homogeneous residuals. The findings revealed that both communication and work discipline significantly contributed to employee performance, directly and through motivation. The role of motivation as a mediator was further validated through Sobel testing. The study concludes that enhancing communication, work discipline, and motivation is essential for improving employee performance at Karangasem Regional Hospital.

4. RESULT AND DISCUSSION

4.1. RESULTS

Table 1. Validity and Reliability Test Results

Variable	Indicator	Validity Test		Reliability Test	
		Pearson Correlation	Description	Cronbach's Alpha	Description
Communication (X1)	X1.1	0,462	Valid	0,775	Reliable
	X1.2	0,844	Valid		
	X1.3	0,729	Valid		
	X1.4	0,829	Valid		
	X1.5	0,719	Valid		
Work Discipline (X2)	X2.1	0,780	Valid	0,805	Reliable
	X2.2	0,809	Valid		
	X2.3	0,729	Valid		

	X2.4	0,648	Valid		
	X2.5	0,790	Valid		
Motivation (Y1)	Y1.1	0,774	Valid	0,797	Reliable
	Y1.2	0,721	Valid		
	Y1.3	0,603	Valid		
	Y1.4	0,776	Valid		
	Y1.5	0,845	Valid		
Employee Performance (Y2)	Y2.1	0,741	Valid	0,741	Reliable
	Y2.2	0,726	Valid		
	Y2.3	0,790	Valid		
	Y2.4	0,682	Valid		
	Y2.5	0,655	Valid		

Source: Data processed (2025)

Based on the tests shown in Table 1, all question items for the four variables analysed proved to be valid and showed an adequate level of reliability. Thus, the measuring instruments used in this study play an important role in the process of data collection and measurement of the research variables studied to collect valid and reliable data.

Table 2. Normality Test

One-Sample Kolmogorov-Smirnov Test		
Unstandardised Residual		
N		73
Normal Parameters ^{a,b}	Mean	.0000000
	Std. Deviation	1.12834256
Most Extreme Differences	Absolute	.120
	Positive	.120
	Negative	-.103
Test Statistic		.120
Asymp. Sig. (2-tailed)		.061 ^c
a. Test distribution is Normal.		
b. Calculated from data.		
c. Lilliefors Significance Correction.		

Source: Data processed (2025)

Base on Table 2, normality testing was conducted using the Kolmogorov-Smirnov test to evaluate the distribution suitability of the independent and dependent variables in the regression model. Data is considered normally distributed if the significance level exceeds 0.05.

Table 3. Multicollinearity Test

Coefficients ^a			
Model		Collinearity Statistics	
		Tolerance	VIF
1	X1	.474	2.109
	X2	.783	1.276
	Y1	.446	2.241
a. Dependent Variable: Y2			

Source: Data processed (2025)

Table 3 shows that the tolerance values for communication, work discipline, and motivation exceed 0.10, and all VIF values are below 10. This indicates that multicollinearity is not present in the regression analysis, meaning the independent variables do not have excessive interaction.

Table 5. Heteroscedasticity Test

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-1.528	1.127		-1.356	.179
	X1	.014	.055	.045	.564	.792
	X2	.107	.053	.265	2.016	.058
	Y1	-.014	.042	-.056	-.324	.747
a. Dependent Variable: ABS						

Source: Data processed (2025)

Based on the data presented in Table 5, the significance values for communication, work discipline, and motivation variables all exceed 0.05. Therefore, according to the Glejser test results, the results indicate that the regression model is proven to be free from any indication of heteroscedasticity.

Table 6. Test Results of Direct and Indirect Effects

No	Relationship Between Variables	Direct Effect	Indirect Effect	Total Effect	Sig	Description
1	Communication (X1) → Motivation (Y1)	0,642	-	0,642	0,000	H1 accepted
2	Work Discipline (X2) → Motivation (Y1)	0,200	-	0,200	0,024	H2 accepted
3	Communication (X1) → Employee Performance (Y2)	0,227	-	0,227	0,025	H3 accepted
4	Work Discipline (X2) → Employee Performance (Y2)	0,470	-	0,470	0,000	H4 accepted
5	Motivation (Y1) → Employee Performance (Y2)	0,305	-	0,305	0,004	H5 accepted
6	Communication (X1) → Motivation (Y1) → Employee Performance (Y2)	-	0,196 (0,642x0,305)	0,196	-	H6 accepted
7	Work Discipline (X2) → Motivation (Y1) → Employee Performance (Y2)	-	0,061 (0,200x0,305)	0,061	-	H7 rejected

Source: Data processed (2025)

The final path model can be shown based on the results of substructure tests 1 and 2, Figure 2 below presents an illustration that shows this:

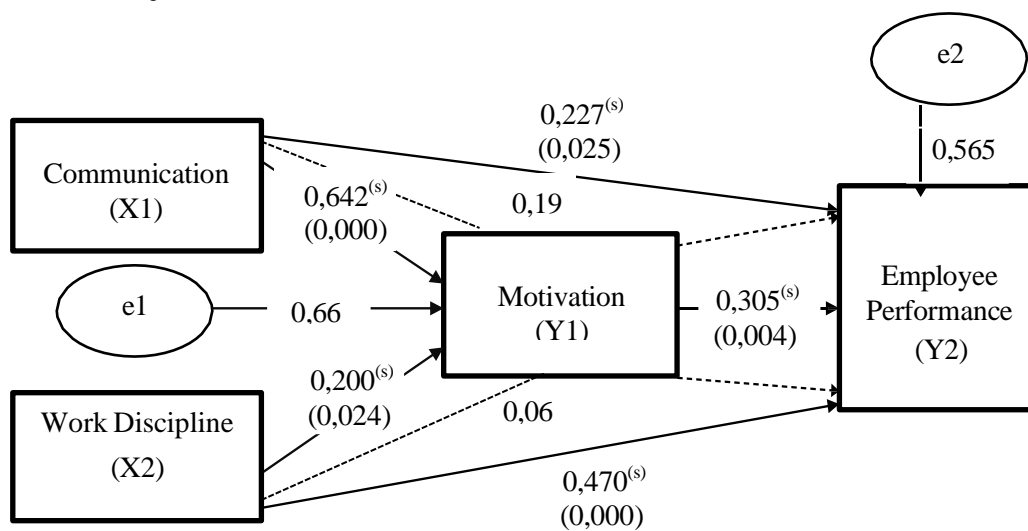


Figure 3. Path Analysis Model

$$\begin{aligned}
 \text{Error Term (e1)} &= \sqrt{1 - R_1^2} \\
 &= \sqrt{1 - 0.554} \\
 &= 0,668
 \end{aligned}$$

$$\begin{aligned}
 \text{Error Term (e2)} &= \sqrt{1 - R_2^2} \\
 &= \sqrt{1 - 0.681} \\
 &= 0,565
 \end{aligned}$$

4.2. DISCUSSION

4.2.1. The Impact of Communication on Motivation

Communication plays a significant role in influencing the work motivation of medical personnel at Karangasem Regional Hospital ($\beta = 0.642$; $t = 7.379$; $p < 0.05$). These results are consistent with prior research findings [12], [13], and [14], which show that effective communication can increase understanding, clarify tasks, and increase the sense of being valued. From a theoretical point of view, these results reinforce the concepts in Herzberg's Two-Factor Theory, which states that communication is Effective, open, and clear communication is a key element in driving increased motivation and structured job satisfaction can help clarify individual roles, as well as create a positive work environment, which ultimately strengthens internal motivation.

4.2.2. The Impact of Work Discipline on Employee Motivation Levels

Discipline at work is proven to make a positive contribution to increasing individual motivation in carrying out their duties and responsibilities. because compliance with existing rules and procedures can create a higher sense of responsibility and commitment at work ($\beta = 0.200$; $t = 2.302$; $p < 0.05$), although the impact is not as great as communication. This result is consistent with the findings reported by [21], [22], and [23] which state that discipline creates order and a sense of responsibility, two factors that can increase intrinsic motivation. According to Self-Determination Theory, work discipline

plays a role in fulfilling basic psychological needs (autonomy, competence, and social relationships), which in turn stimulates stronger and deeper motivation.

4.2.3. The Impact of Communication on Employee Performance

Empirical data shows that communication effectiveness plays an important role in directly driving work performance improvement ($\beta = 0.227$; $t = 2.299$; $p < 0.05$). This finding indicates that communication has a broader impact than just motivational aspects, but also contributes directly to enhancing performance, while also significantly influencing overall effectiveness of task execution and teamwork. According to Path-Goal Theory, clear communication makes it easier for individuals to understand job objectives and the steps that need to be taken to achieve them, which ultimately plays a role in improving performance.

4.2.4. The Impact of Discipline at Work on Employee Performance

This study revealed the finding that indicates that communication contributes significantly directly to employee performance, which is reflected in the obtained β coefficient value = 0.227; $t = 2.299$; and significance level $p < 0.05$. This indicates that communication not only influences motivation, but also plays a direct role in improving the effectiveness of task execution and team collaboration. This finding reinforces that the effectiveness of communication in organisations has a crucial role in encouraging increased productivity and quality of work outcomes. This indicates that communication not only affects motivation, but also plays a direct role in improving the effectiveness of task execution and team collaboration. According to Path-Goal Theory, clear communication makes it easier for individuals to understand job goals and the actions that need to be taken to achieve them, which ultimately plays a role in improving performance.

4.2.5. Impact of Motivation on Employee Performance

Motivation significantly contributes to improving performance quality, as indicated by the value of $\beta = 0.305$; $t = 2.998$; and $p < 0.05$. These results indicate that factors such as internal drive, rewards, and fulfilment of psychological needs serve a vital function in motivating employees to reach peak performance. When motivation levels are high, a person tends to show strong commitment, proactivity, and results-orientation of basic needs can increase the productivity of medical personnel. This result is consistent with Maslow's Hierarchy of Needs, which suggests that the fulfilment of basic needs to the achievement of self-actualisation is a key factor in optimising motivation and work outcomes.

4.2.6. The Impact of Communication on Employee Performance Through Motivation

The research findings indicate that communication affects performance through indirect pathways by involving motivation as a mediator (indirect effect = 0.196). (indirect effect = 0.196; $Z = 2.79 > 1.98$). This suggests that communication plays a role in increasing motivation, which in turn leads to improved performance. Theoretical interpretations based on Information Transmission Theory suggest that effective communication clarifies the meaning of messages conveyed in the workplace, increases individual confidence, and ultimately drives performance actions through internal motivation. Effective communication serves as a foundation in building motivation of medical personnel. Clear communication direction, transparency of information, and positive interpersonal relationships help create a sense of value, role clarity, and confidence at work. This aligns with the Self-Determination Theory [27][28], which posits that motivation develops when individuals feel competent, connected and

autonomous - these aspects are further strengthened by good communication. Therefore, motivation serves as a mediator that transfers the influence of communication into improved employee performance, through increased morale, awareness of responsibility, and team collaboration.

4.2.7. The Effect of Work Discipline on Performance through Motivation

Contrary to the initial hypothesis, The analytical findings reveal that motivation does not play a role Functioning as an intermediary between work discipline and employee performance, as reflected in the indirect effect value of 0.061 and the Z value of 1.83, which is still below the significance limit of 1.98. This finding implies that discipline at work has a direct impact on performance, which means that work discipline contributes to improving employee performance without having to be mediated by motivation. From a theoretical perspective, this finding can be explained through the Behaviouristic approach, where disciplinary behaviour regulated through supervision and rules produces direct outputs, without requiring complex motivational mediation. This approach emphasises that structured and controlled behaviour will directly contribute to performance achievement, without relying on more complicated internal motivational factors.

In contrast to communication, work discipline functions more as a normative external factor, such as adherence to rules, punctual attendance, and organisational discipline. Sobel Test results show that the indirect effect through motivation is not significant. This explanation can be based on Reinforcement Theory[28][29], which emphasises that discipline is more likely to influence behaviour directly without involving internalisation processes such as motivation. Medical personnel are more likely to carry out their duties due to compliance with systems and rules, rather than due to intrinsic drives originating from within themselves.

Contrary to the initial hypothesis, motivation did not Motivation functions as a mediating variable within the relationship between the level of discipline and performance outcomes (indirect effect = 0.061; $Z = 1.83 < 1.98$). This suggests the presence of a direct relational pattern between work discipline and employee performance, indicating that discipline contributes independently to performance improvement. actually plays a role in encouraging the achievement of optimal performance in improving performance without requiring increased motivation as an intermediary. From a theoretical point of view, this can be explained using the Behaviouristic approach, which suggests that disciplinary behaviour controlled through supervision and application of rules will directly produce outputs without the need for complex motivational mediation processes. This approach focuses on external reinforcement and prescribed consequences, which directly influence behaviour and performance without the need to rely on internal drives or motivation.

5. CONCLUSION

Based on the research conducted on medical staff at Karangasem Regional Hospital, the analysis results indicate that both communication and work discipline have a positive effect on employee performance occurs both directly and through motivation as a mediation path as an intermediary mediator. However, communication is proven to be a strategic factor in encouraging work motivation, which in turn contributes to improving employee performance. This result underscores that communication does not merely act as a means of delivering information, but also as a mechanism to foster morale, strengthen confidence, and clarify roles and responsibilities that support productivity. In contrast, the mediation path between work discipline and performance through motivation did not show significant statistical significance, which indicates that discipline

has a direct power in improving performance without having to be mediated by motivation.

The practical implication of the results of this study for the management of Karangasem Regional Hospital is the importance of strengthening an open and structured internal communication system as the main strategy to improve motivation and performance. In addition, the approach to work discipline should not only rely on rules and procedures, but should also include reward approaches as well as psychological reinforcement. This study has limitations, mainly related to the limited scope of the location in one hospital and the focus on medical personnel, so the results cannot be generalised to a more diverse population. Thus, Future research is encouraged to broaden the scope by including other hospitals as study sites, incorporate additional variables such as job satisfaction and leadership style, and adopt a mixed-methods approach. approach to dig deeper into the dynamics of motivation and performance in the health sector.

REFERENCES

- [1] A. Stephano, S. Martha, and S. Rahmayuda, "Customer trend forecasting information system using double exponential smoothing method at Mess GM," *J. Comput. and Appl.*, vol. 8, no. 1, pp. 1-10, 2020.
- [2] E. I. Pala *et al.*, "Analysis of Sales Accounting Information System at Pt. Wahana Wirawan Manado-Nissan Datsun Martadinata," *J. EMBA J. Ris. Econ. Management, Business and Accounts*, vol. 8, no. 4, pp. 824-834, 2020.
- [3] M. Rizal, H. V. Alam, and L. L. Asi, "The Effect of Organisational Commitment on Employee Performance at the Gorontalo City Education Office," vol. 5, no. 3, pp. 1126-1140, 2023.
- [4] M. Patta, A. Firman, and Mustaking, "The Effect of Organisational Commitment and Workload on Performance Through Work Motivation of Village Office Employees in Bontoharu District, Selayar Islands Regency," *J. Magister Manaj. Nobel Indones.*, vol. 2, no. 5, pp. 686-697, 2021.
- [5] S. Ariesni and L. Asnur, "Work Discipline on Employee Performance," vol. 5, no. 3, pp. 363-369, 2021.
- [6] A. Samsudin *et al.*, "The Importance of Work Discipline in the Company," vol. 8, pp. 1651-1657, 2024.
- [7] E. Illi *et al.*, "Physical Layer Security for Authentication, Confidentiality, and Malicious Node Detection: A Paradigm Shift in Securing IoT Networks," *IEEE Commun. Surv. Tutorials*, vol. 26, no. 1, pp. 347-388, 2024, doi: 10.1109/COMST.2023.3327327.
- [8] L. E. Fitri, D. Setiawan, P. E. P. Utomo, and S. K. W. Bhayangkari, "Implementation of ICT-Based Village Information System in Nyogan Village Towards Good Governance and Village Independence," *J. Karya Abdi Masy.*, vol. 4, no. 3, pp. 494-503, Jan. 2021, doi: 10.22437/jkam.v4i3.11568.
- [9] E. Pantano, C.-V. Priporas, and G. Migliano, "Reshaping traditional marketing mix to include social media participation," *Eur. Bus. Rev.*, vol. 31, no. 2, pp. 162- 178, Mar. 2019, doi: 10.1108/EBR-08-2017-0152.
- [10] C. P. Fadjarini Sulistyowati, Hari Saptaning Tyas, MC. Candra Rusmala Dibyorini, "Utilisation of Village Information System (SID) to Realise Smart Village in Panggungharjo Sub-district, Sewon, Bantul, Yogyakarta," *J. IPTEK-KOM (Journal of Knowledge Science and Technol. Communication)*, vol. 23, no. No. 1, p. : 213-226.
- [11] A. Roshini and K. V. D. Kiran, "Hierarchical energy efficient secure routing protocol for optimal route selection in wireless body area networks," *Int. J. Intell. Networks*, vol. 4, pp. 19 - 28, 2023, doi: 10.1016/j.ijin.2022.11.006.

- [12] J.-P. A. Yaacoub, H. N. Noura, and O. Salman, "Security of federated learning with IoT systems: Issues, limitations, challenges, and solutions," *Internet Things Cyber-Physical Syst.*, vol. 3, pp. 155 - 179, 2023, doi: 10.1016/j.iotcps.2023.04.001.
- [13] A. Kousalya and N. Baik, "Enhance cloud security and effectiveness using improved RSA-based RBAC with XACML technique," *Int. J. Intell. Networks*, vol. 4, pp. 62 - 67, 2023, doi: 10.1016/j.ijin.2023.03.003.
- [14] A. A. M, Idakwo, Muazu M and S. B. O, "An Extensive Survey of Digital Image Steganography: State of the Art," Apr. 2024.
- [15] H. Ma *et al.*, "MUD-PQFed: Towards Malicious User Detection on model corruption in Privacy-preserving Quantised Federated learning," *Comput. Secur.*, vol. 133, 2023, doi: 10.1016/j.cose.2023.103406.
- [16] R. Mattajang, A. Nurwulandari, O. Cahya, and D. Hardin, "The influence of OHS, work environment and work discipline on employee performance through motivation as an intervening variable at the fire and rescue department of the South Jakarta Administrative City," vol. 5, no. 3, pp. 1566-1583, 2022.
- [17] E. Kuznetsova, N. Zhbanova, and F. Golovaneva, "The Role Of Mathematics And Its Teaching For Sustainable Development," 2021. doi: 10.15405/epsbs.2021.09.02.24.
- [18] W. Setiawan, Nurwahid Pranoto, and Khoirul Huda, "Employee Performance Evaluation Decision Support System with the SMART (Simple Multi-Attribute Rating Technique) Method," *J. RESTI (Engineering Systems and Technol. Information)*, vol. 4, no. 1, pp. 50-55, Feb. 2020, doi: 10.29207/resti.v4i1.1384.
- [19] W. H. Ismail, R. H. Harapah, and Kariono, "Implementation of the Regulation of the Minister of Religious Affairs of the Republic of Indonesia Number 45 of 2015 on the Discipline of Attendance of Civil Servants within the Ministry of Religious Affairs," *J. Adm. Public*, vol. 8, no. 1, pp. 124-146, 2018.
- [20] S. Ramzan, A. Aqdu, V. Ravi, D. Koundal, R. Amin, and M. A. Al Ghamdi, "Healthcare Applications Using Blockchain Technology: Motivations and Challenges," *IEEE Trans. Eng. Manag.*, vol. 70, no. 8, pp. 2874 - 2890, 2023, doi: 10.1109/TEM.2022.3189734.
- [21] H. Hasmita, M. Zainal, and A. I. S. Haliq, "Unleashing the potential of agricultural extension workers in Luwu Regency, Indonesia: an analysis of the role of personal factors, motivation, and competence in enhancing performance," *J. Ilm. Pertan.*, vol. 20, no. 1, Mar. 2023, doi: 10.31849/jip.v20i1.11971.
- [22] J. Pratihari, A. Dey, A. Khan, P. Banerjee, and R. K. Pal, "Computing with words for solving the fuzzy transportation problem," *Soft Comput.*, 2023, doi: 10.1007/s00500-023-08958-4.
- [23] Z. Li, X. Guan, and W. Mei, "Coupon promotion and its cross-channel effect in omnichannel retailing industry: A time-sensitive strategy," *Int. J. Prod. Econ.*, vol. 258, p. 108778, Apr. 2023, doi: 10.1016/j.ijpe.2023.108778.
- [24] V. Olindo and A. Syaripudin, "Designing a Web-based Employee Attendance Information System with the Waterfall Method," *OKTAL J. Comput. and Sci. Science*, vol. 1, no. 01, pp. 17-26, 2022.
- [25] A. Moenir and F. Yuliyanto, "Design of Web-Based Payroll Information System with Waterfall Method at PT. Sinar Metrindo Perkasa (Symmetry)," *J. Inform. Univ. Pamulang*, vol. 2, no. 3, p. 127, Sep. 2017, doi: 10.32493/informatika.v2i3.1237.
- [26] D. Lestari, *Employee Performance Book*. 2023.
- [27] N. Fudzah, S. Bahri, and L. Khairani, "The Effect of Communication and Work Environment on Employee Performance with Motivation as an Intervening Variable at PT. Pos Indonesia Regional Office I Medan The Effect of Communication and Work

- Environment on Employee Performance with Motivation as an I," vol. 1, no. 3, pp. 173-183, 2020.
- [28] Nora Yolinza and Doni Marlius, "The Effect of Career Development and Work Motivation on Employee Performance at BKPSDM South Solok Regency," *J. Publ. Manaj. science*, vol. 2, no. 2, pp. 183-203, 2023, doi: 10.55606/jupiman.v2i2.1640.
- [29] T. Sutanjar and O. Saryono, "The Effect of Motivation, Leadership and Employee Discipline on Employee Performance," *J. Manag. Rev.*, vol. 3, no. 2, 2019, [Online]. Available: <https://jurnal.unigal.ac.id/managementreview/article/view/2514>