

# The Influence of Discipline on Employee Motivation with Digital Attendance as a Moderator at the Karawang Regency Manpower and Transmigration Office

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## Abstract

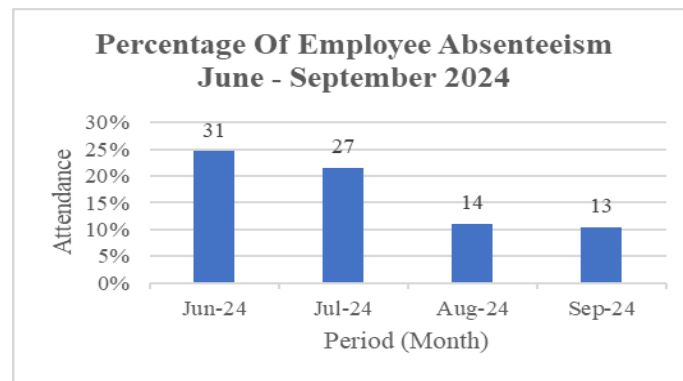
Advancements in digital technology have significantly transformed organizational and daily activities. In the public sector, employee discipline, particularly attendance, often remains a challenge that directly affects motivation and overall performance. Previous studies have mainly focused on fingerprint-based systems, leaving limited exploration of application-based digital attendance as a moderating factor. This study examines the effect of work discipline on employee motivation, with digital attendance as a moderating variable. The research was conducted at the Karawang Regency Manpower and Transmigration Office using a quantitative descriptive methodology. The study population consisted of all 126 employees, with a sample of 96 respondents selected through the Slovin formula at a 5% margin of error. Data were collected using questionnaires and analyzed with the PLS-SEM technique through SmartPLS 4 software. The findings reveal that work discipline has a positive and significant effect on employee motivation, and digital attendance strengthens this relationship as a moderating variable. These results imply that adopting digital attendance systems not only improves punctuality and compliance but also enhances motivation and performance, providing valuable insights for government agencies and human resource management practice.

## 1. Introduction

Advances in digital technology bring major changes to daily life and organizational activities. The digital era, or digitalization, is advancing rapidly and has become an inseparable part of modern society. This transformation is driven by the demand for greater practicality and efficiency. Digitalization also includes converting conventional archives into digital or electronic formats (Situmorang & Situmorang, 2022).

The Karawang Regency Manpower and Transmigration Office is a public institution responsible for employment-related services, including productivity improvement, worker placement, labor training, and employment management. Its role extends to coordinating workers, employers, and private training institutions, making it a central agency in labor development (Khairunnisa, 2021).

As part of human resources (HR), the State Civil Apparatus (ASN) play a critical role in local government. They are the key actors in ensuring that organizational goals are achieved effectively and efficiently (Wibawanto et al., 2021).



**Figure 1** *Percentage of Employee Absence June-September 2024*  
(Source: Karawang Regency Manpower and Transmigration Office, 2024)

Figure 1 shows employee attendance data from June to September 2024. The results indicate that attendance never reached 100%. Although absenteeism decreased slightly, full attendance was still not achieved overall. This highlights a persistent issue in attendance discipline that requires further evaluation to determine practical solutions for improving consistency and accountability.

Employee motivation is a key factor in shaping discipline and attendance behavior. Without adequate motivation, employees may fail to meet their responsibilities because the needs that drive their work are not fulfilled (Liana, 2020). Motivational strategies introduced by organizations are intended to enhance enthusiasm and performance, encouraging staff to work diligently and contribute their best skills to achieve organizational objectives. Thus, motivation is essential for mobilizing employees to work responsibly and with commitment (Fransiska & Tupti, 2020).

Work discipline also plays a vital role in organizational success. With proper discipline, tasks are carried out smoothly, and performance can be optimized (Anggoro & Wijono, 2022). Discipline reflects accountability and responsibility, which increase morale and help achieve the goals of both the organization and society (Suwanto, 2019).

#### Research Gap and Novelty

Digital attendance applications have been introduced to improve accountability by systematically recording and monitoring employee presence (Rahayu & Vahmi, 2022). These systems help organizations track attendance efficiently and transparently (Salman & Wahyuningtyas, 2020). Prior studies have found that discipline positively influences motivation (Oppong & Wooton, 2020; Jufrizen & Hadi, 2021). Other studies show that fingerprint attendance systems also contribute to better motivation and discipline (Rahayuningtyas et al., 2022; Al Sunah, 2019).

However, most previous studies have focused only on fingerprint-based systems. Little research has explored application-based digital attendance and its role as a moderator in the relationship between discipline and motivation. This study is therefore novel in two ways: first, it tests application-based digital attendance as a moderating variable; and second, it applies SmartPLS 4 for a deeper moderation analysis in the context of a government institution.

#### Research Objective

This study aims to analyze the influence of work discipline on employee motivation at the Karawang Regency Manpower and Transmigration Office and to determine whether digital attendance strengthens or weakens this relationship.

## 2. Literature Review

### 2.1 Human Resource Management

Human resource management (HRM) is a strategy for managing employees in an organization to improve performance and achieve goals. According to Anwar and Abdullah (2021), HRM involves systematic efforts to manage the workforce to achieve company targets. Siagian (2023) explains that HRM includes activities to encourage, motivate, and maintain optimal employee performance. Similarly, Sugiarti (2023) highlights HRM as the process of managing people to achieve organizational objectives effectively. Based on these views, HRM can be summarized as the process of planning, recruitment, training, and evaluation to optimize workforce potential.

While HRM emphasizes managing employees to improve performance, discipline is crucial to ensure employees comply with organizational standards.

## 2.2 Work Discipline

Work discipline refers to the ability of employees to adhere to organizational rules and expectations, which supports overall organizational success. According to Prasetyo and Marlina (2023), discipline is respect for company norms and procedures that motivates voluntary compliance. Maryani et al. (2021) state that discipline involves engaging employees to change attitudes, raise awareness, and build commitment to follow rules and social norms. Apriyani et al. (2023) emphasize that discipline reflects sincerity in adhering to standards, showing that it plays a key role in organizational achievement.

According to Apriyani et al. (2023), the factors that influence work discipline include: (1) compensation, (2) role models within the organization, (3) clarity of rules, (4) firmness of leaders in decision-making, (5) supervision from leaders, and (6) the care shown by supervisors. The main purpose of discipline is to create an orderly and productive work environment (Silitonga et al., 2023).

According to Paryanti (2021), the dimensions of work discipline are: (1) attendance behavior, such as punctuality and regular presence, (2) vigilance, such as prudence in completing tasks and maintaining equipment, and (3) compliance with regulations, such as understanding and applying work rules.

Discipline ensures rules are followed, but motivation is what drives employees to act consistently and perform well.

## 2.3 Work Motivation

Work motivation is the internal drive that generates enthusiasm and encourages individuals to collaborate and achieve job satisfaction. According to Septiadi et al. (2020), motivation is the force that sustains employee enthusiasm. Suryawan and Salsabilla (2022) define it as a condition that supports individuals in reaching their goals, while Fransiska and Tupti (2020) describe it as an incentive that fosters collaboration and effort. Collectively, motivation can be understood as an inner drive that pushes employees to perform optimally for organizational success.

According to Rizky (2022), aspects of motivation include: (1) proactivity, (2) innovation in completing tasks, (3) continuous improvement in work quality, (4) adherence to schedules, (5) task completion, (6) loyalty and integrity, (7) building good relationships with superiors, and (8) achieving personal and organizational goals.

According to Paryanti (2021), the dimensions of motivation consist of: (1) need for achievement, which includes developing creativity, improving skills, and completing tasks effectively, (2) need for affiliation, which refers to the desire to build good relationships, work in teams, and participate actively, and (3) need for power, which involves inspiring others, expanding authority, leading, and competing.

While motivation drives employees internally, technology such as digital attendance provides external support for discipline and accountability.

## 2.4 Digital Attendance

Digital attendance is a system that uses digital technology, such as mobile applications or computers, to record and report employee presence online. According to Reza and Kriswibowo (2024), digital attendance is a government initiative that integrates attendance through cloud-based systems connected in real time. Kamila and Haerah (2024) explain that mobile attendance applications automatically send employee data, such as identity and location, to a personnel database. Similarly, Aderizal and Syamsir (2023) define it as a method for documenting attendance electronically using devices connected to the internet. In short, digital attendance ensures accurate and efficient monitoring of employee presence.

According to Sihotang et al. (2024), the benefits of digital attendance include: (1) reducing fraud or manipulation, (2) lowering costs, (3) enabling real-time monitoring, and (4) simplifying data recaps. Rokhayah et al. (2021) categorize digital attendance into three dimensions: (1) practicality, including easy registration, no extra devices, and fast processing, (2) accuracy, including precise results, centralized data, and innovative systems, and (3) security, including strong protection and safeguards against manipulation.

By providing accurate records and minimizing manipulation, digital attendance improves accountability, supports discipline, and indirectly enhances motivation. This highlights its importance in human resource management practices.

## 3. Framework Study

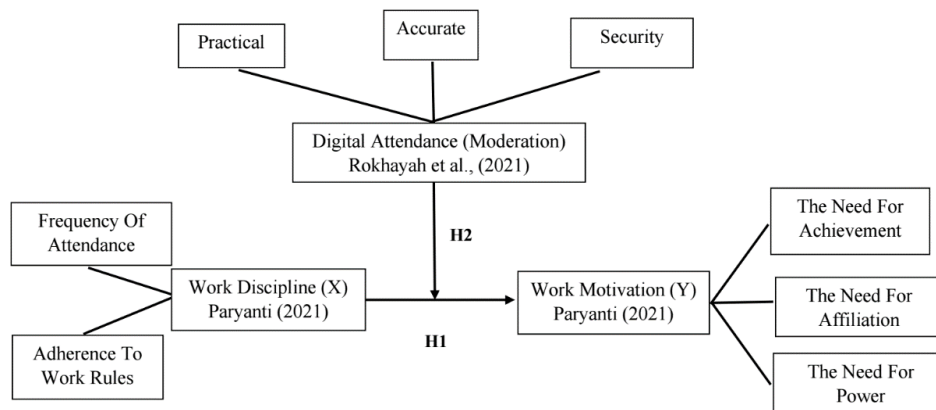
According to Paryanti (2021), work discipline is the employees' awareness and commitment to follow organizational regulations in order to achieve goals. It is measured by two dimensions: the frequency of attendance, which refers to punctuality and consistency in coming to work, and rule observance, which reflects employees' compliance with organizational policies, procedures, and regulations.

Work motivation is defined as the internal drive that encourages individuals to exert effort and achieve satisfaction in their work. Paryanti (2021) identifies three dimensions of work motivation. The need for achievement involves developing creativity, improving abilities, and completing tasks effectively. The need for affiliation reflects the desire to build good relationships, cooperate with others, and actively participate in teamwork. The need for power refers to inspiring others, taking leadership roles, expanding authority, and competing to achieve goals.

According to Rokhayah et al. (2021), digital attendance is a system that records employee presence electronically through mobile applications or internet-connected computers. In practice, employees log in using their devices, and the data is stored in a centralized database. Digital attendance is assessed through three dimensions: practicality, which includes easy registration and fast processing; accuracy, which provides precise results and centralized records; and security, which ensures a high level of protection against fraud or manipulation.

Digital attendance systems can improve work discipline by providing accurate and real-time tracking of employee presence, thereby increasing accountability and reducing absenteeism. At the same time, it is believed that high work motivation encourages improved discipline, since motivated individuals are more likely to comply with organizational rules consistently. Thus, digital attendance is considered an external tool that enhances accountability, while work motivation serves as an internal driver of employee behavior.

This study positions digital attendance as a moderating variable that may strengthen the relationship between work discipline and work motivation. Employees are more likely to maintain discipline and feel motivated when attendance is monitored transparently and systematically.



**Figure 2 Framework**

Research hypothesis:

H1: Work discipline is expected to positively influence work motivation among employees at the Karawang Regency Manpower and Transmigration Office.

H2: Digital attendance is expected to moderate the relationship between work discipline and employee motivation by strengthening the positive effect of discipline when attendance is monitored electronically.

#### 4. Research Method

This study employed a quantitative descriptive design at the Karawang Regency Manpower and Transmigration Office. The population comprised 126 employees, and the sample consisted of 96 respondents, determined with the Slovin formula at a 5% margin of error. A non-probability purposive sampling technique was applied, selecting respondents who actively use the digital attendance system and are involved in routine administrative operations. Primary data were collected through observation and a questionnaire using an ordinal 1–5 Likert scale. Data were analyzed using PLS-SEM with SmartPLS version 4.0. Table 1 Operational Variables presents the operationalization of each construct using the columns variable, dimension, indicator, and source.

**Table 1 Operational Variables**

Variable	Dimension	Indicator	Source
Work Discipline (X)	Frequency of Attendance	1. Employee attendance on time	Paryanti (2021)
		2. Intensity of employee attendance	
	Adherence to work rules	1. Employee understanding of work rules	
2. Completing work as per work rules			
Work Motivation (Y)	The need for achievement	1. Developing creativity	
	The need for affiliation	2. Improve ability	
		1. Establish a good relationship between employees	
Digital Attendance (Moderation)	Practical	2. The need to participate	Rokhayah et al. (2021)
		1. The need to lead	
	Accurate	2. The need to compete	
Security		1. Fast process	
		2. Easy registration	
	1. More precise results		
	2. Centralized data		
		1. High level of security	
		2. Manipulation of attendance	

The moderation test in SmartPLS-4 was conducted to assess the extent to which digital absenteeism moderates the relationship between work discipline and employee work motivation. This process uses the bootstrapping technique. The first step is ensuring the data meets the validity and reliability requirements. Next, the interaction variable is created by multiplying the independent variable with the moderating variable. The analysis results are evaluated by looking at the path coefficient value of the interaction variable. If the path coefficient is significant, it can be concluded that digital attendance acts as a moderating variable that strengthens or weakens the effect of work discipline on employee motivation.

## 5. Research Results and Discussion

### 5.1 Respondent Profile

This study describes the respondents' profiles according to gender, age, latest education, and length of service.

**Table. 2** Respondent Profile

Characteristic	Frequency	%	Characteristic	Frequency	%
<b>Gender</b>			<b>Last Education</b>		
Male	57	59%	SMA/SMK	4	4%
Female	39	41%	Diploma	12	13%
Total	96	100%	Bachelor	80	83%
<b>Age</b>			<b>Length of Service</b>		
18-25 Years	13	14%	1-5 Years	43	45%
26-35 Years	33	34%	6-10 Years	30	31%
36-45 Years	31	32%	11-20 Years	16	17%
46-55 Years	16	17%	>20 Years	7	7%
>56 Years	3	3%	Total	96	100%
Total	96	100%			

In Table 2, which shows the profile of respondents, the majority of employee respondents are male, with a percentage of 59%. In terms of age, the largest group is 26-35 years, amounting to 34%. If based on the last level of education, the majority of respondents have a bachelor's degree, reaching 83%. Based on tenure, most employees have a tenure of 1-5 years, with a percentage of 45%.

### 5.2 Outer Loading Value

The results of outer loading can assess the extent to which each variable contributes to providing information on the concept being measured. The following table shows the data results of the outer loading results using SmartPLS 4:

**Table 3** *Convergent validity test of outer loading values*

Work Discipline		Work Motivation		Digital Attendance	
Indicator	Outer Loading	Indicator	Outer Loading	Indicator	Outer Loading
Employee attendance on time (DK. 1)	0.663	Developing creativity (MK. 1)	0.886	Fast process (AD. 1)	0.845
Intensity of employee attendance (DK. 2)	0.879	Enhance skills (MK. 2)	0.898	Easy registration (AD. 2)	0.753
Employee understanding of work rules (DK. 3)	0.903	Establish a good relationship between employees (MK. 3)	0.831	More precise results (AD. 3)	0.770
Completing work according to work rules (DK. 4)	0.877	The need to participate (MK. 4)	0.755	Centralized data (AD. 4)	0.754
		The need to lead (MK. 5)	0.834	High level of security (AD. 5)	0.783
		The need to compete (MK. 6)	0.858	Manipulation of attendance (AD. 6)	0.793

The outer loading data in Table 3 explains that each indicator has a value of  $> 0.70$  except for the employee gauge attendance on time, which has an outer loading value of  $< 0.70$ , namely 0.663. However, the outer loading value in the range of 0.50 - 0.60 has been recognized as sufficient according to the convergent validity criteria (Ghozali, 2014). So, the indicator of employee attendance on time can be said to be valid.

### 5.3 Cronbach's Alpha Validity Test, Composite Reliability, Average Extracted (AVE)

Below are the results of validity test research using SmartPLS4 software:

**Table 4** *Validity Test*

Variable	Cronbach's Alpha	Composite Reliability	Average Variance Extracted (AVE)
Work Discipline	0.853	0.902	0.699
Work Motivation	0.919	0.937	0.714
Digital Attendance	0.875	0.905	0.614

Based on Table 4, all variables have AVE values above 0.5, indicating reliability. In addition, Cronbach's Alpha and Composite Reliability values exceed 0.7, with construct reliability above 0.8. This confirms that all question items in this study have a high level of reliability (Musyaffi et al., 2021).

### 5.4 R-Square Test

The R-squared value illustrates how exogenous variables can influence endogenous variables. The categorization of the R-Square value is 0.25 weak, 0.50 medium, and 0.75 strong. The results of the R-Square analysis using SmartPLS-4 software are presented as follows:

**Table 5** *R-Square*

Variable	R-square	Description
Work Motivation	0.712	Strong

Based on Table 5, the R Square result of 0.712 is included in the decisive group because it is close to 0.75. This value indicates that the model has predictive skills that are close to strong. In this study, the independent variable of work discipline, accompanied by the moderating variable of digital attendance, can simultaneously affect the dependent variable of work motivation by 71.2%. Meanwhile, the remaining 28.8% is explained by other variables that have not been inputted in this study (Ringle & Avkiran, 2018).

### 5.5 F-Square Test

F-Square measures the extent to which the R-Square value changes in the dependent variable when the independent variable is entered into the model. The categorization of the F-Square value is 0.02 small, 0.15 medium, and 0.35 excellent. The following are the results of the F Square analysis obtained through the SmartPLS 4 software:

**Table 6** *F-Square*

Variable	F-square	Category
Work Discipline	1.214	Great
Digital Attendance	0.217	Medium
Digital Attendance X Work Discipline	0.080	Small

According to the results of the F-Square test in Table 6, work discipline has a strong influence with an F-Square value of 1.214 because it exceeds 0.35. Meanwhile, digital attendance shows a moderate influence with an F-Square value of 0.217, in the range of 0.15 to 0.35. Meanwhile, the interaction between digital attendance and work discipline has a negligible effect with an F-Square value of 0.080 because although it is higher than 0.02, the value is still below 0.15 (Ringle & Avkiran, 2018).

### 5.6 Q-Square Test

Q Square assesses predictive ability using a blindfolding procedure to test how much the model can predict endogenous variables. The Q square value category is the effect size of 0.02 is considered small, 0.15 is medium, and 0.35 is significant. Below are the results of the Q-Square research using SmartPLS4 software:

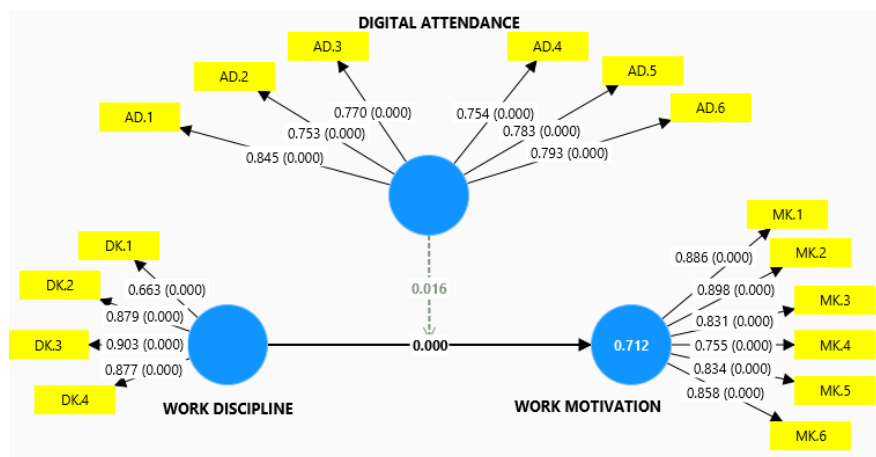
**Table 7** *Q-Square*

Variable	Q-square	Category
Work Motivation	0.671	Great

In Table 7, the Q square value of 0.671 is included in the large category because it exceeds 0.35, indicating that the model has excellent predictive ability and is reliable in explaining endogenous variables. The greater the Q Square value, the more substantial the contribution of independent variables to endogenous variables (Ringle & Avkiran, 2018).

### 5.7 Hypothesis Test

Below are the results of hypothesis testing research using SmartPLS4 software for work discipline variables, work motivation and digital attendance as moderation:



**Figure 3** *Bootstrapping Output Results*

The research hypothesis is considered valid when the T-statistic value is more than 1.984, and the P values are less than 0.05 (Angraini et al., 2024).

**Table 8 Hypothesis Test**

Hypothesis	Original Sample	Sample Average	Standard Deviation	T Statistic	P Values
Work Discipline → Work Motivation	0.698	0.702	0.075	9.371	0.000
Digital Attendance X Work Discipline → Work Motivation	0.152	0.159	0.071	2.137	0.016

Table 8 indicates that H1 is accepted. Namely, discipline affects employee work motivation, indicated by a T-statistic value of  $9.371 > 1.984$  and P-values of  $0.000 < 0.05$ . H2 is accepted. Namely, digital attendance can moderate work discipline, with a T-statistic of  $2.137 > 1.984$  and a P-value of  $0.016 < 0.05$  (Anggraini et al., 2024). Digital attendance can moderate by strengthening the relationship between work discipline and employee motivation because the original sample value shows a positive number of 0.152 (Darmayanti et al., 2024).

## 6. Discussion

### The Effect of Work Discipline on Work Motivation

The correlation between discipline and employee work motivation at the Karawang Regency Manpower and Transmigration Office is positive and significant. The R-square results show that work discipline and digital attendance simultaneously explain 71.2% of the variation in work motivation and fall into the strong category (Ringle & Avkiran, 2018).

The indicator with the most significant influence on discipline variables is employee understanding of work rules, with an outer loading value of 0.903. The strongest indicator in the work motivation variable is increasing ability, with an outer loading value of 0.898. The higher the employee's understanding of work regulations, the more significant the contribution to improving work discipline, substantially increasing work motivation, especially in growing abilities.

The results of this study indicate that work discipline has a positive and significant impact on work motivation. This finding aligns with studies conducted by Oppong F.R. & Wooton Ian (2020) and Jufrizen & Hadi P. F (2021), which also revealed that work discipline has a crucial role in increasing work motivation. This confirms that the higher the level of work discipline, the more significant the impact in increasing work motivation.

### The Effect of Work Discipline on Work Motivation with Digital Attendance as Moderation

Digital attendance can moderate the relationship between work discipline and work motivation. Moderation results with positive values indicate that digital attendance strengthens the relationship between the two variables. Thus, the more optimal the use of digital attendance, the more significant the impact of work discipline on increasing work motivation.

The fast process is the most significant indicator, with an outer loading value of 0.845. A fast process is efficient; this creates convenience in recording attendance. With a fast attendance process, employees can feel more appreciated for their discipline, thus increasing employee motivation.

This study's results align with Rahayuningtyas et al. (2022) and Al Sunah's (2019) research. Digital attendance is directly tested and proven to increase discipline and motivate employees. This study strengthens these findings, where digital attendance can moderate by enhancing the correlation between work discipline and work motivation. Thus, this research and previous research emphasize the importance of implementing attendance technology in increasing work motivation through employee discipline.

## 7. Conclusion

This study concludes that work discipline has a positive and significant effect on staff motivation at the Karawang Regency Manpower and Transmigration Office. In other words, higher levels of discipline lead to greater motivation. Moreover, digital attendance strengthens the effect of work discipline on motivation, acting as a moderator that enhances the relationship between the two variables. These results contribute to the understanding of how digital tools can improve employee motivation in government organizations, providing both practical and academic insights into the role of technology in human resource management.

## 8. Implications

This study offers several practical implications that can guide agencies in improving discipline, motivation, and the effectiveness of digital attendance systems:

- **Technology and Punctuality:** Because digital attendance improves accountability, agencies can add features such as automatic notifications or reminders before working hours to further enhance punctuality.
- **Employee Engagement:** Motivation and discipline can be reinforced by involving personnel in decision-making. Agencies should create discussion forums or suggestion channels that allow staff to actively contribute to policies and work activities.
- **System Design and Efficiency:** To simplify the use of digital attendance, the system should integrate employee data automatically. This will make the registration process more efficient and reduce the need for re-entering information.

By implementing these measures, agencies can maximize the benefits of digital attendance systems while also fostering a more disciplined and motivated workforce.

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## Conflict of Interest

The authors declare no conflict of interest regarding the paper's publication.

## Author Contribution

The authors confirm contribution to the paper as follows: study conception and design: APN, UMDf and ER; data collection: APN, UMDf and ER.; analysis and interpretation of results: APN, UMDf and ER.; draft manuscript preparation: APN, UMDf and ER. All authors reviewed the results and approved the final version of the manuscript.

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