



## Assessment Of Biometric System of Attendance Timing and Employee Performance at General Hospital Bajoga, Gombe State - A Conceptual Review

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### Abstract

Employee job performance is critical to the overall productivity and achievement of organizational goals – big or small. Health sectors needs a high performing workforce that could always be prompt and attending the work assigned to them and failure to do so have a negative consequence on the overall performance of not only the health personnel in particular but the entire hospital in general. This conceptual paper assessed the effect of biometric system (Attendance Timing) on employees' performance of general hospital, Bajoga in Gombe State. The objective of the study is to determine the relationship between attendance timing and employee's performance in general hospital Bajoga, Gombe State. The study reviewed different related literatures sourced from recent peer reviewed journal articles, textbooks, and previous research of scholars that are related to the study. Some of the preliminary findings showed that all the factors in attendance timing have a significant effect on employees' performance in general hospital Bajoga, Gombe state. Therefore, the study recommended that Attendance timing using biometric clocking system is very essential in a hospital setting; as such government should extend the program to other government owned hospitals in Gombe state. The management of private hospital should also introduce the biometric system of attendance timing in order to address the issue of late coming and absenteeism from the place of work un-necessarily.

**Keywords:** Attendance, Employee, Hospital, Performance and Timing.

## 1.1 INTRODUCTION

Organizations are working in more dynamic environments. A significant portion of the expenses that businesses must pay is related to their human resources. Because it directly affects both an individual's and an organization's performance, employee attendance is important for all commercial organizations. Employees from various companies are frequently caught taking phony leaves, which negatively impact the productivity of the company. Employee performance is maintained using a variety of management strategies in the banking and commercial sectors as well as other company organizations. In this sense, it is thought that the system for tracking employee attendance has the ability to manage phony leaves and other attendance-related concern. Adding some transparency to the problem of the fake leaves in the corporate environment in the organization hierarchy is expected to be an effective way of reducing the negative effect of attendance (Adwan, 2016).

The way a worker performs their job responsibilities and completes their assigned tasks is what is known as their performance. It speaks to the efficacy, caliber, and productivity of their work. Personnel evaluation of an employee's value to the company is influenced by their performance. For a firm, every employee is an important investment, so each one needs to produce a sizable return (Ciner, 2019). Workers are the engine that propels a business ahead. It follows that the workforce's everyday performance has a significant impact on whether a firm or organization succeeds or fails. Organizations need to figure out how to retain and maximize staff performance if they want to succeed in today's

business environment. Not only does this help to hire, retain and develop the best talent, but by helping staff to grow within their roles and responsibilities, the company can build a pipeline of future leaders (Hill, 2018). Enhancing employee performance is a continuous process that requires planning, measuring, and evaluating work, but it's also an essential step in accomplishing organizational objectives. Every single person has an impact on a company's success or failure. Naturally, you want to keep your workforce's quality and productivity at an elevated level. However, it will be hard to maintain without a thorough grasp of what influences employees' performance. It's critical to evaluate workers' performance and identify areas for development whether you're a team leader or an employee (Ciner, 2019). Both the leadership and employees should always know the status of their performance. If performance is suffering, or it's just time for a boost, implementing best practices for improving the quality and productivity of work can really make a difference. The rate of absenteeism in several health and other areas rose quickly. False leaves are taken by many kinds of workers, which causes hospitals to function poorly (Kocakulah et al., 2016). Furthermore, the number of fictitious sick leaves is rising across many industries, which leads to disillusionment within the businesses. There are various functions that attendance management plays in keeping the business running well. According to a study, when an employee claims fake illness, other employees have to shoulder more work, which contributes to the expansion of firms. The first thing that runs the health sectors is the performance of the employees' that how they perform to run the hospital in an effective way (Suresh, 2016). The issue that many hospitals in Nigeria are dealing with is employee absenteeism and low attendance in the health sector. As a result of the disregard for employees' fictitious leaves of absence, hospital performance is declining. In order to propel the Nigerian health sector forward, management must pay close attention to both employee performance and attendance (Abdalla & Sankar, 2019).

Employee clocking systems have been used for more than two decades for managing time and employee attendance in organizations. Biometrics based time management attendance systems with enhanced features have been developed (Omobogo, 2015). By allowing users to access their individual HR records and computerized employee clocking systems with biometric integration that can precisely record labor data and real-time data, these biometric-enabled systems provide an efficient way to address time management. Because they can increase employee productivity, automated biometric employee clocking systems are becoming more and more commonplace, with many firms implementing them. By ensuring that workers arrive at the workplace on time and leave at the appropriate time after duty, biometric technology can help reduce time theft by precisely tracking employee time and attendance (Lia Ciner, 2019). Employee job satisfaction can be improved when workers feel that their efforts are recognized through balanced workload. Employee attendance timing, employee identification and pay computation are crucial aspects in ensuring that organizations achieve their set operational performance levels. By allowing users to access their individual HR records and computerized employee clocking systems with biometric integration that can precisely record labor data and real-time data, these biometric-enabled systems provide an efficient way to address time management. Because they can increase employee productivity, automated biometric employee clocking systems are becoming more and more commonplace, with many firms implementing them. By ensuring that workers arrive at the workplace on time and leave at the appropriate time after duty, biometric technology can help reduce time theft by precisely tracking employee time and attendance (Lia Ciner, 2019). A well-executed computerized employee clocking system should result in more accurate attendance records, the abolition of the practice of employees "buddy punching" their colleagues to clock in and out, more authentic worker identification, and more accurate payroll computation for workers—all of which contribute to happier and more productive workplaces. Well-managed work schedules give diligent workers the impression that their efforts are valued. Workers who fail to fulfill their responsibilities are called out and given encouragement to do better. Improved job satisfaction may be realized through effective computation of overtime, management of extra workload, and recognition of hard work. The employer can also be able to identify areas of high employee absenteeism in the workplace which can be used to re-organize of work. The study seeks to answer this question; what is the relationship between attendance timing and employee's performance in general hospital Bajoga, Gombe State? The general purpose of the study is to examine the effect of biometric system of attendance timing on employees' performance in general hospital Bajoga, Gombe State.

## 2.1 Literature Development

### 2.2 Financial Performance

Employees are the force that drives a company forward. So it should come as no surprise that the daily performance of the workforce hugely influences the success or failure of a business. In order to thrive in the current market, companies need to figure out how to retain and maximize the performance of their workforce. This helps the organization not only find, hire, and develop the best candidates, but it also creates a pipeline of future leaders by assisting employees in taking on more responsibility in their current roles. All assisting in sustained success. Enhancing employee performance is a continuous process that requires planning, measuring, and evaluating work, but it's also an essential step in accomplishing organizational objectives (Abdalla & Sankar, 2019). To put it simply, an employee's performance is determined by how well they carry out their assigned responsibilities, finish necessary tasks, and conduct themselves at work. Performance is measured by the quantity, quality, and efficiency of work that employees produce. Leaders who keep an eye on employee performance can create a picture of how the business is operating, which helps to identify areas

for improvement in the present and informs future growth plans. However, focusing on employee performance benefits the business in more ways than one, as it helps employees realize their full potential and improve overall performance, which can boost morale and the caliber of work produced. Lastly, but perhaps most importantly, underperforming employees can lead to dissatisfied customers, which can negatively impact the entire organization and make it more difficult to achieve goals.

### 2.3 Attendance Timing Biometric System and Employees' Performance

Effective attendance timing in the workplace helps in increasing employees or workers' performance which leads to overhead cost saving that enhance an organizations operational performance. Employee attendance can be tracked with the use of computerized attendance timing systems (Abdalla & Sankar, 2019). The way that time is managed at work is guided by time management. Attendance timing serves as a guide for actions taken to increase efficiency. Timing of attendance is essential for people to meet their needs as workers in the workplace and maintain work-life balance. Although workers are expected to report to work, they also have personal responsibilities that they must attend to. An efficient attendance tracking system can guarantee that people and the workplace are in balance with one another. The amount of pay that an employee is entitled to depends on how many working hours they are expected to put in each month. These working hours may be determined by the pattern of work. Employees may work in the regular, shift and over time (locum) patterns. These working hours are determined based on the legal requirement, collective bargaining, agreements for union of workers, organizational policy, and best practices in the industry among other considerations. The biometric clocking systems may be used in two modes, that is, identification and verification.

As soon as a user logs into the system, their identity is verified. The template that is embedded in the biometric system is compared to the biometric data that is supplied to it. When the user's data is matched with every record stored in the identification database by the computerized biometric system, the users are fully identified (Kisame, 2016). Identification of individuals within an organization is a difficult, expensive, and technical process. The accuracy level of identification generally decreases with database size. Large data bases must be categorized using biometric data in order to improve the accuracy of the data. In order to increase the accuracy of the results, it is necessary to ensure that record identification is carried out within a specific category, which reduces the number of records that require a search. Before any identification can take place, a user of the computerized biometric employees clocking system must register into the system. During this process, the system must record each user's unique traits. Data enrolment must be completed in phases in order to produce high-quality biometric templates that will eventually be used for user identification.

## 2.4 Empirical Review

### 2.4.1 Attendance Timing and Employees' Performance

Abdalla and Sankar (2019) opines in a study on biometric authentication systems and service delivery in healthcare sector in Kenya. This study constituted a descriptive survey involving 43 healthcare facilities that were using biometric systems within Nairobi city in Kenya. The goal of the study was to examine the variables influencing biometrics' effectiveness in the healthcare industry and the effects of using it to deliver services. The results showed that a number of factors, including system response time, technical accuracy, ease of operation, information output, security, IT support staff's knowledge of biometrics and willingness to assist, the system's ability to withstand high user volumes, patient comfort with the system, system user experience, reliability, promptness of the IT support team, and patient behavior, all affected the biometric systems' performance in healthcare facilities.

Similarly, Do et al. (2020) analyzed daily fingerprint-verified attendance data from all 527 public-sector secondary and tertiary care facilities in Bangladesh to describe HCW attendance from January 26, 2019 to March 22, 2020, by cadre, hospital type, and geographic division. We then regressed HCW attendance onto fixed effects for day-of-week, month, and hospital, as well as indicators for each of three pandemic periods. The findings revealed that the attendance level of other health care staff declined by 0.3% points (95% CI = -0.8% to 0.2%) and 2.3% points (95% CI = -3.0% to -1.6%) during the international-spread and local-spread periods, respectively.

Additionally, Jilani et al. (2019) opines on the historical attendance data between Jan-2011 – December-2015 from four hospitals were used as a training set to develop and validate a forecasting model. Weekday variations were addressed by first segmenting the data into individual weekday time series and then running a different model for each weekday. After testing for seasonality, Box-Cox transformations were carried out. Next, using the Harvey, Leybourne, and Newbold (HLN) test, a modified heuristic based on a fuzzy time series model was created and compared with autoregressive integrated moving average and neural network models. The root means square error and mean absolute percentage error were used to test the time series models at four emergency department locations in order to evaluate forecasting accuracy. Using weekday time series for short-term prediction (four weeks ahead), and monthly time series for long-term prediction (four months ahead), the models were tested. Analysis of the data showed that hospital admissions after emergency room visits were not entirely random events and could therefore be reasonably predicted. As the forecast time intervals widened (from daily to monthly), prediction accuracy increased. The mean absolute percentage

error for each weekday time series using fuzzy time series modeling ranged from 2.63% to 4.72% for daily admissions forecasting, and from 2.01% to 2.81% for monthly time series.

Subsequently, Butun et al. (2022) explore the reasons for parents attending EDs with their child for non-urgent conditions in Turkey. Between March and May 2017, semi-structured interviews were carried out in two regions of Turkey with ten General Practitioners (GPs), fifteen ED staff members, and thirteen parents. Grounded theory principles were used to analyze data. The data were categorized into five main areas: (1) parents' perceptions, feelings, and knowledge about their incapacity to provide self-care; (2) parents' views about the staff, system, and healthcare services; (3) parents' preferences for hospital and emergency department services; (4) negative effects on ED services; and (5) parents' perceptions of their need for a car. This is the first study on parental reasons for visiting the ED for non-urgent conditions carried out in a middle-income nation. To better meet service user needs and improve satisfaction among parents and healthcare staff, more has to be done to minimize needless ED visits. The results of this study could help researchers, healthcare professionals, legislators, and staff create interventions that will lessen ED overcrowding.

Moreover, Andrew et al. (2014) explores the influences on ANC attendance and timing of first visit in the Madang region of Papua New Guinea. A variety of qualitative techniques were used to gather data at three different locations, including focus groups, in-depth interviews, free-listing and sorting of terms and definitions, in-depth observations in medical facilities, and case studies of expectant mothers. Pregnant women, their families, traditional and biomedical health providers, opinion leaders, and community members were among the respondents. This extensive, long-term study demonstrates how sociocultural and economic factors affect ANC attendance. It is the first of its kind in Madang, PNG. In order to promote timely ANC visits, these factors need to be addressed. For instance, interventions could target healthcare staff attitudes toward pregnant women in order to improve ANC delivery in health facilities.

Subsequently, Achour et al. (2022) evaluates the capability of hospital staff to attend their workplace regardless of their backgrounds, jobs, and levels, making it a more accurate representation of the natural operation of hospitals. It adds to the body of knowledge on healthcare resilience, particularly in relation to hospital staff attendance both during and after disaster events. A questionnaire survey was used to gather data from 1841 hospital employees working in various departments. The findings demonstrate that, depending on the type of disaster, the readiness of the workplace, and the individual responsibilities of the staff, a variety of intricate personal and professional factors play a role in the decision to report for duty during or after a disaster. Factors such as age and work experience, along with travel, mental health, and dependence, affect staff ability to respond to hospitals after disasters. The results showed that all hospital departments, services, and professions—regardless of their roles, backgrounds, or hierarchical positions—play a crucial part in the delivery of healthcare services.

Similarly, Lia Ciner (2019) conducted a study on the implication of using biometric system on payment operations of an organization: a case study of one Non-Governmental Organization. The research design used in the study was descriptive. One hundred organization and client staff members made up the study's total population. According to the study's findings, 45% of respondents agreed that paying clients a per diem through BVR has decreased cash handling, and 75% agreed or strongly agreed that using BVR has significantly decreased fraud. When asked if using BS has made paying easier, the majority of respondents (83%) strongly agreed or agreed. The reconciliation of advances has not been sped up by using the system, according to nearly one-third of the staff.

Additionally, Kisame (2016) did a study on computerized biometric employee clocking system and operational performance: case study of Moi Teaching and Referral Hospital. A descriptive survey research design was used in the study. According to the study, the computerized biometric employee clocking system had a statistically significant impact on MTRH's operational performance. Therefore, it was determined that methods of supervision such as staff coaching while they are working, monitoring, and evaluation and feedback improve the performance of non-academic staff members. The study suggests that in order to determine the degree to which computerized biometric employee clocking systems affect operational performance across organizations, future researchers should look into comparative studies.

Subsequently, Roland (2017) focused on an elaboration on measures to promote institutional innovation, transformation, and inclusiveness to enhance public service delivery. According to the study, a biometric technique is an automated way to identify a person based on specific behavioral or physiological traits. Francis Galton's theory of fingerprints and physiognomy served as the foundation for Alphonse Bertillon's indemnification systems of criminal activity, which gave rise to biometrics. Some of the frequently used biometric techniques in the modern era of information technology advancement are vein profiling, hand geometry, facial geometry (facial recognition), iris scanning, fingerprints, and DNA profiling, among other developing ear and nose biometrics.

## 2.5 Theoretical Review

### 2.5.1 Cameron and Quinn Theory

This model describes organizational structure using four (4) core values, including stability, flexibility, integration and differentiation. On the basis of the aforementioned values, Cameron and Quinn (2011) identified four (4) different types of cultures. The first is Clan culture, which is characterized by shared values and objectives, a cooperative environment, an emphasis on employee development and authorization, and more. The second is Adhocracy culture, which functions as an ad hoc institution that can be swiftly reestablished at the emergence of new objectives and can be dismantled once an organization's goals are achieved. The third is market culture, which is more focused on how an entity interacts with its external environment than its internal management. It emphasizes how important it is to accomplish goals. The fourth type of culture is the hierarchical one, which has a distinct organizational structure, codified standards and guidelines, strict oversight, and well-defined responsibilities.

### 2.5.2 Resource Based Theory (Underpinning Theory)

Birger Wernerfelt coined the term in 1984. However, most scholars consider Jay Barney as the father of modern Resource Based View (RBV). Resource based theory states that the possession of resources is valuable, difficult to imitate, rare and cannot be substituted. According to the theory, businesses should search within their own ranks to identify the sources of resource-based competitive advantage. The Resource Based Theory served as the study's foundation (RBT). The RBT is supported by research, which claims that organizations compete in a dynamic and ever-changing business environment (Crook et al., 2008). Barney (1991) asserts that companies can acquire and maintain a sustainable competitive advantage through their workforce. This is achievable when businesses possess a reservoir of human capital that rivals or competitors are unable to copy or replace. The use of a variety of priceless resources that the company has at its disposal is integral to the RBT as the basis of competitive advantage. It is imperative for firms to identify their primary sources of potential resources. These assets ought to be priceless, unique, incomparable, and unreplaceable by rivals in the industry the company works in. For a firm to implement value-creating strategies, its resources must be worthwhile. According to the RBT, the company's internal operating environment is a key factor that can give it a competitive edge. In order for a firm to compete, be profitable, and have a competitive advantage over its rivals, the RBT assumes that an organization consists of special capabilities and resources.

Businesses can improve their operational performance by utilizing the tools and resources at their disposal. Businesses must make sure they use an integrated approach to all of their activities if they want to remain competitive. Businesses should also implement strategies that set them apart from competitors in the markets they serve. Therefore, if organizations hope to stay relevant in the context of the cutthroat global marketplace, they must investigate their frameworks. Businesses aim to obtain a competitive edge; however, they must understand that genuine competitive advantage necessitates resources that are rare, valuable, unique, and non-replaceable. The fundamental tenet of the resource-based theory is that businesses must determine which of their primary resources will enable them to establish and maintain a competitive advantage over rivals. In order for organizations such as specialist hospital Gombe to improve their operational performance in providing healthcare services, they need to make the most out of their human resources and time. To this end, they expect their employees to work full time during scheduled hours.

## 3.1 Methodology

The study assessment of attendance timing on employees Performance in general hospital Bajoga, Gombe State employed a variety of connected literatures and other sources, including textbooks and previous research by scholars. To review the literature and form a conclusion, the study used content analysis technique.

## 3.2 Conclusion

In actuality, biometric system of attendance timing is essential to the overall success of a hospital (private or public), and a hospital can succeed anywhere in the world when there are enough modern equipment and the punctual trained personnel. Therefore, based on the reviewed literatures, the study draws the conclusion that the attendance timing and the employee's performance in general hospital Bajoga, Gombe State are related. It implies that there is positive relationship between the dependent and independent variables.

## 3.3 Recommendations

After examining the attendance timing and employee's performance with regard to a general hospital Bajoga in Gombe state, it is abundantly clear that a positive and punctual staff is essential for the growth and development of the hospital. Based on the aforementioned, we suggest that:

- i. Attendance timing using biometric clocking system is very essential in a hospital setting, as such government should extend the program to other government owned hospitals in Gombe state.
- ii. The management of private hospital should also introduce the biometric system of attendance timing in order to address the issue of late coming and absenteeism from the place of work un-necessarily.

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