Research Article

A Proposed model for Decongesting Correctional Facilities in Edo State

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Abstract: There are three correctional centers in Edo state: Oko, Ozalla, and Ubiaja are used as case studies in this study, which focuses on the challenges of decongesting the country's jail system. The objective of the study was to develop a model to aid in ranking and recommending inmates based on an acquittal likelihood factor who should be fast-tracked for a speedy trial, bail, or relocation/recommendation for other correctional techniques or facilities within the Nigerian legal system; aside from the prison. The paper presents a model for a decision support system that incorporates three multi-criteria decision making systems, SAW, TOPSIS, and AHP, as well as six factors: those who are awaiting trial, detained, sentenced to life, condemned inmates, long-term offenders, and those who have received only a light sentence. While assigning weights to rank the prisoners, consider their dependency, age, gender, health status, and percentage of their sentence served. Experts, including two magistrates, ten prison wardens, five attorneys, ten convicts, six pastors, and nine NGO employees, engaged in a questionnaire poll to predetermine weights. The model offers the decision maker two different levels of guidance, namely (a) a beginner mode and (b) an expert mode. The beginner mode is intended for decision-makers who are not familiar with the multi-criteria process. The advanced mode is employed when the decision-maker is conversant with the MA method and can choose a particular method using the predefined weights.

Keywords: acquittal likelihood, SAW, TOPSIS, correctional facilities, trial

1. Introduction

A correctional facility, prison, penitentiary, or is a place where people are physically confined or interned and usually have a limited amount of personal freedom. Prisons are typically institutions that are part of a country's criminal justice system, so that imprisonment or incarceration is a legal penalty that the state may inflict for the commission of a crime. Overcrowding happens in Nigerian prisons when the number of detainees exceeds prison capacity to the point where inmates cannot be accommodated in a humane, healthy, and psychologically safe manner. Overcrowding is commonly referred to as congestion in Nigeria (Ehonwa & Odinkalu, 1991). It is a significant challenge in Nigerian prisons, particularly those located in major cities. The number of cells in these jails in Nigeria can be double or triple their intended number (Cox et al., 1984). Prisoners scarcely have enough room in these cells to move their bodies or limbs freely. Each prisoner in this regime is given a "post", or roughly a foot and a half-square space. The majority of prisons in Nigeria is jam-packed and overcrowded, which poses significant challenges for the reformation (Crystal, 2004), rehabilitation, and reintegration processes involved in prison administration. Despite an alarming rise in the jail population over the previous two decades, Nigerian prisons have essentially maintained their capacity.

Prior to Nigeria's independence in 1960, these jails were constructed by the colonial government and local authorities. The status of these jails is alarmingly deplorable, with little feeling of upkeep or repair indicative of long-term neglect by the Nigerian government. The majority of the prisons built during this time period are actually quite old, in poor condition, and in danger of collapsing. According to Aduba (1993), the entire jail capacity from 1978 to 1981 was 27,257, while statistics from (Nigeria prison services, 1978–1981) show that the average monthly population in 1978 was 32,332; in 1979 it was 34,770; in 1980 it was 35,332; and in 1981 it was 38,477. 18.61% were overcrowded in 1978, 27.56% in 1979, 29.43% in

1980, and 41.16% in 1981. Currently, 49,000 people are housed in Nigerian prisons, with 20% of them being offenders and the remainder being awaiting trial (Amnesty International, 2012).

2. Problem of the Study

The ability to store and retrieve information rapidly has reduced the complexity of work and information, which is one of the uses or advantages of computers. There is a need for a decision support system that is computer based to implement rules for choosing and recommending an inmate with a higher probability of acquittal when developing strategies for prison decongestion in view of selecting inmates with a greater likelihood for discharge or bail, such as those awaiting trials, detainees, pregnant women, and the terminally ill.

Aims and objectives of the research

The purpose of this study is to propose a model that aids prison administrators and staff in compiling a list of the prisoners most likely to be granted acquittals, bail, parole, or pardons/mercy.

Objectives of he research:

a) to investigate the criteria for choosing inmates for a trial or amnesty program;

b) to gather opinions and information from those with experience working with prisoners, including warders, inmates, attorneys, and members of non-governmental organizations (NGOs) like the Christian Fellowship;

c) to propose a relevant model for decongesting correctional facilities in Edo state.

Significance of the research

This research would be useful to prison managers and other stakeholders in developing a model for decongesting correctional centers. It would also increase concern and knowledge about the problem of overcrowding in Nigerian prisons. The proposed model will also necessitate the documentation of jail records in a format that can be accessed via computer systems and networks

3. Literature Review

Several reasons have been recognized as contributing to jail overpopulation in other countries (Coyle, 2002). For example, (Agomoh et al., 2001) listed the following: High remand / awaiting trial population; judicial overuse of jail; police abuse of arrest authority and bail terms; Inadequate legal aid facilities; Transportation problems for defendants to court; Inadequacy in jail structures; Inadequate use of non-custodial disposition measures; and Corruption. In addition, the writers considered the following consequences on the jail population and reforms: Inhumane treatment of inmates (including health and welfare facilities); Inadequate juvenile justice system; Poor treatment of women; poor treatment of mentally sick convicts; Inadequate coordination and preparation with the judicial sector; insufficient funds and other administrative hurdles; and insufficient community participation in the administration of justice.

Officials from the Nigerian correctional centers have claimed that many occurrences of overcrowding occur in prisons located in urban areas. Analyzing records from 30 Nigerian prisons (out of over 200), it was discovered that 30 prisons accounted for 22,609 (almost 50 %) of the national jail inmate population, with 16,422,609 of this amount awaiting trials (Agomoh et al., 2001).

Additionally, there are situations where a sizable proportion of people who are being held in custody are classified as "civil or criminal lunatics". For instance, in 2008, there were 860 people incarcerated in Enugu Prison, of whom 157 were convicted criminals, 598 were awaiting trial, and 105 were mentally ill (Agomoh et al., 2009). It can be concluded from this that 12.2 % of all inmates in this particular institution were mentally ill. Given that most of them are awaiting trial/remand inmates, adding the number of mentally ill inmates to the awaiting trial figure results in a total of 703 out of the total population of 860 being awaiting trial, with mentally ill inmates making up 14.9 % of the total number of non-convicted inmates in the prison. It leaves a lot to be desired when one considers that the majority of mentally ill people are classified as "civil lunatics" who are jailed solely due to their mental condition rather than the fact that they have committed any crimes (Ghasemzadeh & Archer, 2000). This frequently occurs because their family members are ashamed of their condition, incapable of paying for their adequate care in a psychiatric hospital or therapy setting, or both.

They believe that by placing them behind bars, the government and Nigerian Prison Service will be forced to give them free housing, food, and (if they're lucky) even medication. Additionally, by removing the person from public view and the community, their family is protected from shame and stigma. Therefore, the question is if these individuals shouldn't be directed to appropriate therapeutic settings in order to relieve the Nigerian prison system of this unjustified strain and stress. The practice of imprisoning people with mental illnesses poses important issues, according to Agomoh (2007; 2008), who wrote on defending the human rights of inmates with mental health disabilities in African jails. It is questioned why people are imprisoned. Such actions also put the state's stance on human rights and the standard of its health care delivery in jeopardy.

4. Materials and Methods

The research method used to obtain the essential data needed as input into the proposed model is a quantitative methodology that includes elements of the qualitative approach.

4.1. Design of the study

The descriptive survey research design was chosen for the study. This method aims to define potential behavior, attitudes, values, and traits. To obtain the weight ratings of the selected acquittal likelihood criteria for the prisoners, a descriptive survey research technique was used.

4.2. Acquittal likelihood criteria

The best acquittal criteria were determined to be the following:

Status: The terms "Awaiting Trial Males" (ATM), "Awaiting Trial Females" (ATF), "Convicted Males" (CM), "Convicted Females" (CF), "Detained at His Excellences Pleasure" (Underage detainees in prison with special authorization), "Debtors", "Criminal Lunatics" (Mentally ill persons charged with an offense), and "Civil Luinatics" (Mentally ill persons) charged age, sex, and the percentage of the sentence that has already passed, as well as any health issues or pregnancy (Deng & Wibowo, 2004).

A questionnaire survey was used to carry out the descriptive study design. Because it assisted in gathering information and opinions from the stakeholders, this design is appropriate for this study.

4.3. Sample and sampling techniques

The non-probabilistic sampling technique will be used for the study. To pick the experts, participants or respondents would be sampled on purpose.

4.4. Research instrument

A questionnaire titled "Weighing Criteria for Acquittal Likelihood (WCAL)" was used to collect the data. The questionnaire is divided into two portions, A and B. Section A includes items pertaining to respondents' personal information. Section B is made up of ranking scales utilizing the Likert scale of 1-5 for each of the six factors considered.

4.5. Data collection

The researcher and two research assistants were briefed on the goal of the study and how to administer the questionnaires. The surveys were provided to the respondents and were promptly retrieved after completed.

4.6. Data analysis

Descriptive statistics were used to assess the data that were collected. A mean value of 2.50 or more is considered to have a high degree of influence, while scores below that were considered to have a low degree of influence on the decision point. The association between marital crisis severity and study habit inventory results (rated as poor, fair, average, good, and very good) will be evaluated using partial correlation.

5. Results and Discussion

This section contains the survey results, as well as an analysis and discussion of the findings.

5.1. Results of the survey analysis

a)   Oko Correctional Center

Table 1 shows the analysis of capacity and list of prisoners in Oko Correctional Center.

Table 1. Capacity and list of prisoners in Oko Correctional Center

Status	Male	Female
Condemned inmate	20	5
Lifer	19	8
Long-sentenced	112	34
Short-sentenced	289	87
Detainee	79	23
Awaiting trial	45	17

Figure 1 represents the statuses of the inmates in Oko Correctional Center.
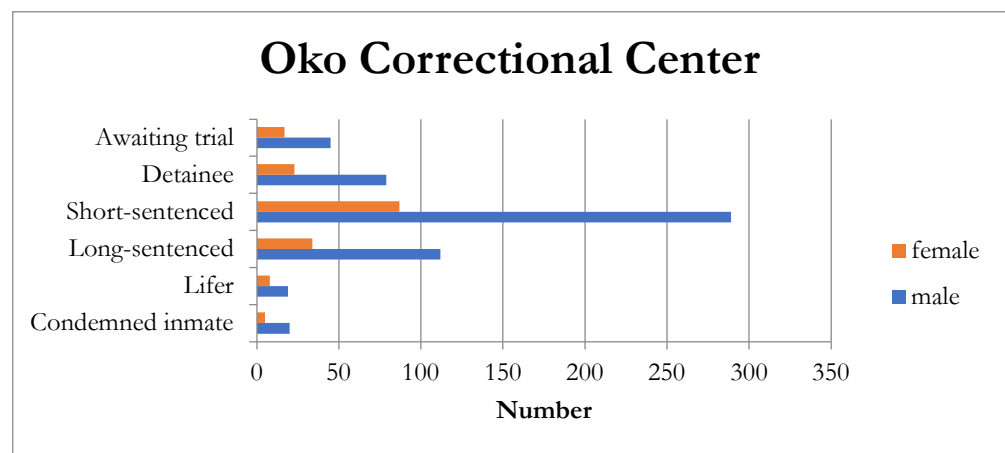

Figure 1. Status of the inmates in Oko Correctional Center

b) Ubiaja Correctional Center

Table 2 shows the analysis of capacity and list of prisoners in Ubiaja Correctional Center.

Table 2. Capacity and list of prisons in Ubiaja Correctional Center

Status	Male	Female
Condemned inmate	14	2
Lifer	11	3
Long-sentenced	82	14
Short-sentenced	209	61
Detainee	29	11
Awaiting trial	32	14

Figure 2 analyses the statuses of the inmates in Ubiaja Correctional Center.
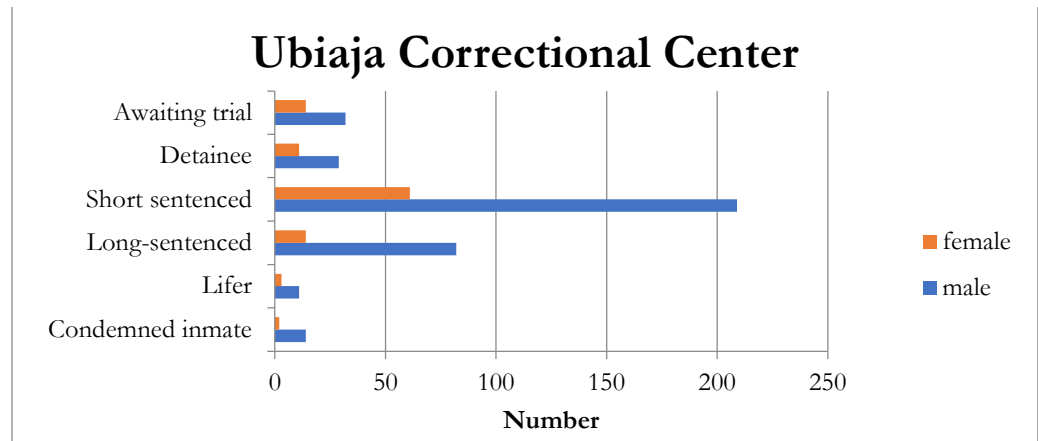
Figure 2. Status of the inmates at Ubiaja Correctional Center

c) Ozalla Correctional Center

Table 3 shows the analysis of capacity and list of prisoners in Ozalla Correctional Center.

Table 3. Capacity and list of prisons in Ozalla Correctional Center

Status	Male	Female
Condemned inmate	1	0
Lifer	2	1
Long-sentenced	54	22
Short-sentenced	76	32
Detainee	-	-
Awaiting trial	2	2

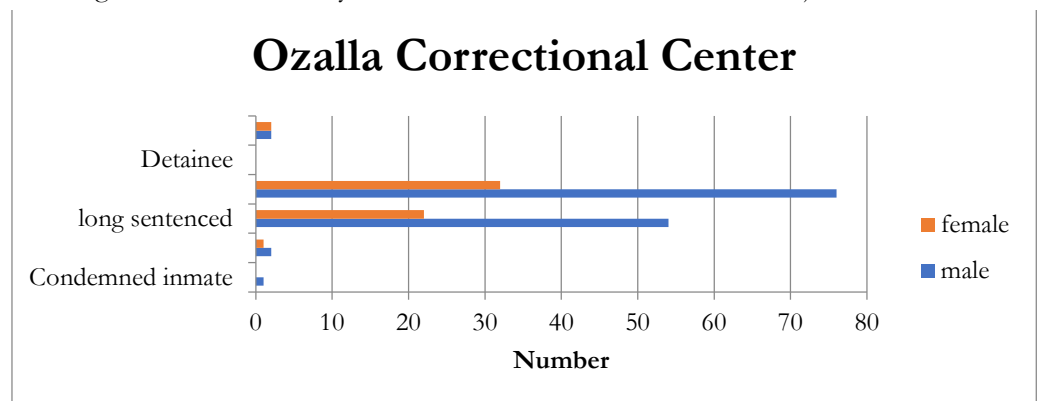Figure 2 shows the analysis of the statuses of the inmates in Ubiaja Correctional Center.

Figure 3. Status of the inmates at Ozalla Correctional Center

5.2. The proposed model framework

It is not only desirable but also crucial to implement a model to address the prison overcrowding issue. By enabling them to interact with the system and exchange information with it, the proposed model gives the decision maker efficient tools to better grasp the choice problem and the effects of their decision-making behaviors on the business. The model must be effective, efficient, and adaptable in order to properly resolve the general IS project selection problem due to the diversity and complexity of the selection criteria, their interrelationships, and the volume of information. The decongestion strategy for prisons is presented in this section. The model was created to assist the decision maker in selecting the best inmate in a simple and straightforward manner by allowing the decision maker to input values to

express his or her requirements and to fully explore the relationships between the criteria, the alternatives, the methods available, and the outcome of the selection process (Chen & Hwang, 1992). The proposed model will assists the decision maker in adopting a problem-oriented approach to problem solving through an interactive information exchange between the two parties. In this process, the model lets the problem it is attempting to solve define the best strategy to use. This solution-focused approach is essential for tackling the IS project evaluation and selection issue in a company effectively and quickly.

The proposed model is composed of three major subsystems:

(a) The dialogue subsystem.

(b) The input management subsystem.

(c) The knowledge management subsystem.

The conversation subsystem is responsible for user-friendly communications between the model and the decision maker as well as integrating several other subsystems. All operations or directives selected by the decision maker are coordinated by the subsystem. The interface enables the decision maker to change or visualize the data as well as apply one of the available MA algorithms.

The interface is created to give the decision maker flexibility to customize the system; the decision maker can define the criteria he or she wants to ask about as well as add, remove, or edit criteria. In order to analyze various possibilities utilizing the knowledge management subsystem, a decision maker uses the database through the dialogue subsystem. The IS project assessment and selection problem is solved by the input management subsystem, which organizes and controls all of the inputs.

Typically, each challenge has a different set of required data inputs, both in terms of type and number. Primary and secondary types of these input data are distinguishable (Bastos et al., 2005)

The choices, the criteria, the decision matrix, and the pairwise comparison matrices make up the main input data. The weightings for the criteria are part of the secondary data. The input data are entered into the system for processing, and once they are there, they can also be changed. Due to the potential inclusion of additional MA methods in the proposed model, it should be highlighted that the system is adaptable enough to support the incorporation of new data types (Atsenwa, 2007). All of the MA methods offered by the model are managed via the knowledge management subsystem. Six MA methods have been included in the proposed model for the purpose of explaining it, to aid the decision maker in choosing the best MA method to address a particular IS project assessment and selection problem.

These three techniques include:

1. Simple Additive Weighting (SAW) method

2. Technique for Order Preference by Similarity to Ideal Solution (TOPSIS) method

3. Analytical Hierarchy Process (AHP) method and additional techniques.

The decision maker may directly use one of these MA techniques or the suggested model may automatically choose one of them using the knowledge management subsystem. The proposed model is divided into six phases: (a) identification of decision maker requirements; (b) determination of criteria weights; (c) determination of performance ratings of alternative IS projects with respect to each criterion; (d) choice of the best MA method; (e) assessment of the IS project; and (f) choice of the appropriate IS project alternative. The proposed model framework for tackling the problem is depicted in Figure 4.
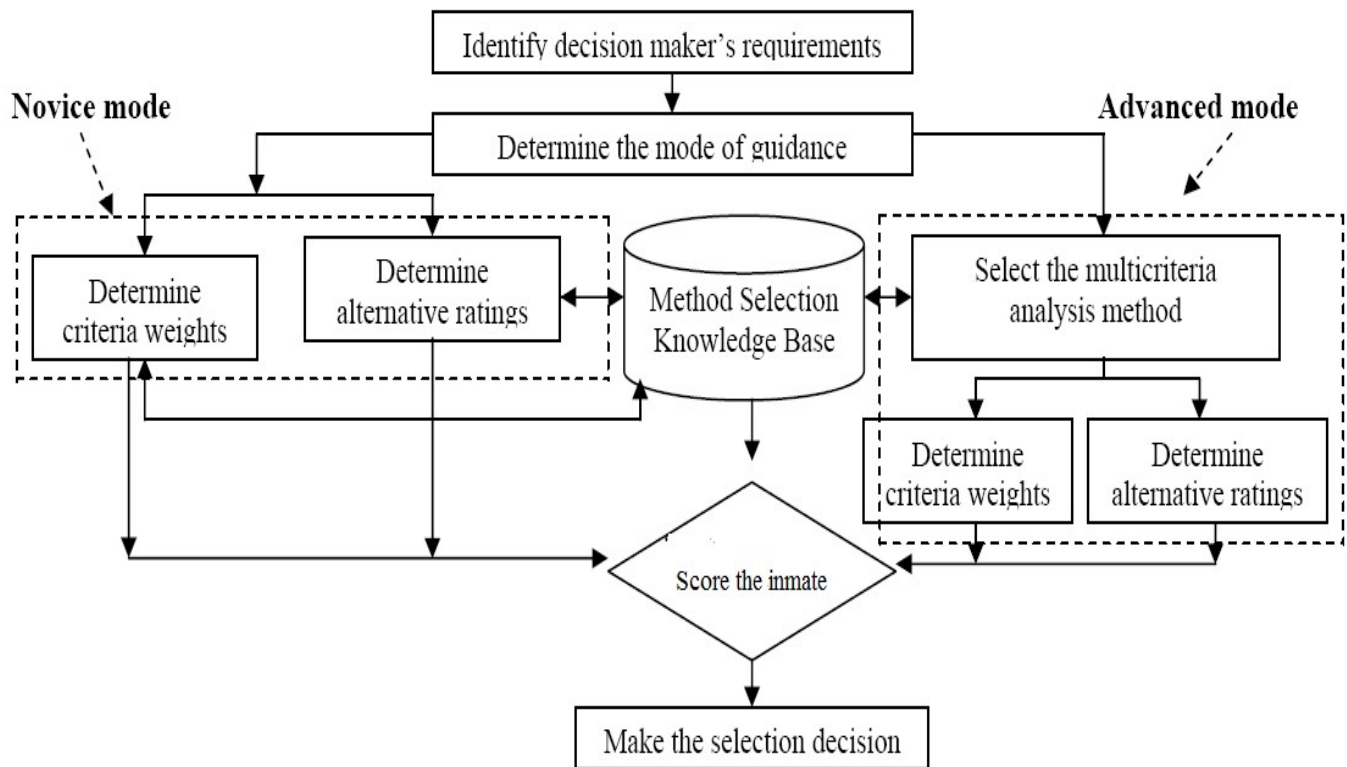
Figure 4. Proposed models for choosing an inmate with a high possibility of being found not guilty. Source: Oise Godfrey, 2019.

When evaluating and choosing IS projects, the initial phase begins with the identification of the decision maker's requirements. Among these conditions are (a) the decision maker's preference for a particular MA method, (b) the decision maker's availability of time, (c) the decision maker's desire to interact with the system, and (d) the desire to allow the system to choose one satisfactory solution or for the decision maker to choose the best solution. The proposed model offers the decision maker two different levels of guidance, namely (a) a beginner mode and (b) an expert mode. For a decision-maker who is not familiar with the MA process, the beginner mode is created. In the beginner's mode, the decision-maker is first questioned by the knowledge management subsystem about the nature of the issue and the ideal kind of solution. When the decision maker is knowledgeable about MA approaches and competent to choose a certain method, they employ the advanced mode. The identification of fundamental criteria weights in a particular choice circumstance is the next step in the second phase. The decision maker may use predetermined weights set by experts to establish the basic criteria weights using the model user interface.

The knowledge base uses the verbal phrases in the universe U = "Very high extent", "High extent", "Medium extent", "Low extent", and "Very low extent". Following the quantitative scaling on the 6 components from a database, the performance ratings of alternative inmates with regard to the acquittal criteria will be determined. Practically, the criteria may contain both quantitative and qualitative variables that meet the needs of the decision-maker and, depending on the MA employed, result in a ranking of the inmates.

5.3. Results of the statistical analysis for the expert system of the weighting criteria

The Relative Rank, which is likewise a relative measure of perception, goes from 0.2 (the lowest ranking index) to 1.0 (the highest ranking index, or 1/5). Table 4 displays the weightings Wi and ranks based on Wi values for all selection qualities, with a minimum value of ([IR = 0.2 + RR = 0.2]/2)=0.2 and a maximum level of importance index of 1. The table displays status, percentage of sentence served, dependency (Wi = 0.8), whereas health/pregnancy (Wi = 0.6), age (Wi = 0.4), and gender (Wi = 0.3).

Table 4. Weights of the different factors

Category	Scale	Frequency	Median	IR	Importance of criteria	RR	Weight	Rank

Category	Scale	Frequency						
	1	1	4	0.8	4		0.8	
	2	3						
	3	3						
	4	12						
Status	5	23					0.8	1
	1	0	5	1	3		0.6	
	2	4						
	3	7						
	4	7						
Fraction of sentence	5	24					0.8	1
	1	7	3	0.6	3		0.6	
	2	9						
	3	10						
Health	4	12						
Condition/Pregnancy	5	4					0.6	2
	1	13	2	0.4	2		0.4	
	2	10						
	3	4						
	4	7						
Age	5	8					0.4	3
	1	11	2	0.4	1		0.2	
	2	21						
	3	4						
	4	3						
Gender	5	1					0.3	4
	1	0	5	1	3		0.6	
	2	6						
	3	4						
	4	10						
Dependency	5	22					0.8	1

Further let's analyse the examples of ratings for inmates using the Simple additive weighing method (SAW) (Table 5 and 6).

Table 5. Paul Osakpamwan

Category	Value	Scale		$W_i * Score$
			1	
			2	
			3	4.0
			4	
Status	Awaiting trial	✓	5	
		✓	1	0.8
			2	
			3	
			4	
Fraction of sentence served	3 out of 24 yrs		5	

Category	Value	Scale		$W_i * Score$
		✓	1	0.6
			2	
			3	
			4	
Health Condition/Pregnancy	Very Healthy		5	
			1	
			2	
		✓	3	1.2
			4	
Age	54		5	
		✓	1	0.3
Gender	Male		2	
			1	
			2	
			3	
			4	
Dependency	Not applicable		5	
Total acquittal likelihood factor				6.9

Table 6. Josephine Amadi

Category	Value	Scale		$W_i * Score$
			1	
		✓	2	1.6
			3	
			4	
Status	*Short sentence*		5	
			1	
			2	
			3	
		✓	4	2.4
Fraction of sentence served	*10 out of 15 yrs*		5	
			1	
		✓	2	1.2
			3	
			4	
Health Condition/Pregnancy	*Healthy*		5	
			1	
		✓	2	0.8
			3	
			4	
Age	*42*		5	
			1	
Gender	*Female*	✓	2	0.6

		1
		2
		3
		4
Dependency	*Not applicable*	5
Total acquittal likelihood factor		6.6

Based on the results shown above for two detainees, the decision ranking using the SAW technique yields a ranking of acquittal likelihood of 6.9 for Paul Osakpamwan and a score of 6.6 for Josehine Amadi, implying that Josephine Amadi has a lesser score in comparison. It should be emphasized that the ratings for a given convict are expected to rise over time.

6. Conclusions

This study examines three correctional centers in Edo state (Oko, Ozalla, and Ubiaja correctional centers as case studies) to examine the issue of decongesting the Nigerian prison system. The proposed model goal is to rank and recommend prisoners who should be given priority for a rapid trial, bail, or transportation to another correctional facility or manner in accordance with Nigerian legal guidelines. The model offers the decision maker two types of guidance: (a) a beginner mode, and (b) an advanced mode. A decision maker who is not familiar with the MA methodology should use the beginner mode. The knowledge management subsystem first questions the decision maker in beginner mode about the features of the problem and the sort of solution desired. The advanced mode is utilized when the decision maker is conversant with MA methods and can select a specific approach based on the predetermined weights.

7. Implications

Applying the proposed model to efficiently address the prison overcrowding issue is not only desirable, but also crucial; as the model gives the decision maker efficient mechanisms to better understand the decision problem and the implications of their decision behaviors to the prison system by enabling them to interact with the system and exchange information with it. As a result, it is advised that the Nigerian correctional centers adopt such a decision-making method.

References

Aduba, J. N (1993). Overcrowding in Nigerian Prisons: a Critical Appraisal. *Journal of Criminal Justice, 21*(2), 185-191. https://www.ojp.gov/ncjrs/virtual-library/abstracts/overcrowding-nigerian-prison-critical-appraisal

Agomoh, U. (2007). Prisons and Penal Reforms in Nigeria. In *Reforming for Justice: A Review of Justice Sector Reforms in Nigeria 1999–2007* (pp. 108-124). Lagos: Access to Justice.

Agomoh, U. (2008). Protecting the Human Rights of People with Mental Health Disabilities in African Prisons. In *Colonial Systems of Control: Criminal Justice in Nigeria* (pp. 267-292). Ottawa: Les Presses del' Universite D' Ottawa. https://doi.org/10.2307/j.ctt1ckph37.20

Agomoh, U., Adeyemi, A., & Ogbebor, V. (2001). *The Prison Service And Penal Reform in Nigeria: A Synthesis Study For the Safety, Security And Access to Justice Programme of the Department for International Development (DFID).* PRAWA.

Agomoh, U., Onyia, L., & Nwankwo, N. (2009). *Jail Delivery Exercise practice Manual.* PRAWA. https://www.prawa.org/wp-content/uploads/2012/06/JAIL-DELIVERY-PACTICE-MANUALedited.pdf

Amnesty International, (2012). Amnesty International Report 2012. The State of the World's Human Rights. http://files.amnesty.org/air12/air_2012_full_en.pdf

Atsenwa, A. (2007). Criminal Justice Reforms in Areas of Bail, Remand and Sentencing. In Reforming for Justice: A Review of Justice Sector Reforms in Nigeria 1999–2007 (pp.75-107). Lagos: Access to Justice.

Bastos, R. M., de Oliveira, F. M., & de Oliveira, J. P. M. (2005). Autonomic computing approach for resource allocation. *Expert Systems with Applications, 28*(1), 9-19. http://dx.doi.org/10.1016/j.eswa.2004.08.014

Chen, J., & Hwang, C. L. (1992). *Fuzzy Multiple Attribute Decision Making: Methods and Applications.* New York: Springer-Verlag, 1992.

Cox, V., Paulus, P., & McCain, G. (1984). Prison Crowding Research: The Relevance of Prison Housing Standards and a General Approach Regarding Crowding Phenomena. *American Psychologist, 39*(10), 1148-1160. http://dx.doi.org/10.1037/0003-066X.39.10.1148

Coyle, A. (2002). *Human Rights Approach to Prison Management.* London: International Centre for Prisons Studies.

Crystal, A. B. (2004). *Overcrowding and Violence in federal correctional institution: An Empirical Analysis.* Ph.D. Thesis, Drexel University.

Deng, W., & Wibowo, S. (2004). *A fuzzy approach to selecting information systems projects.* The 5th ACIS International Conference on Software Engineering, Artificial Intelligence, Networking and Parallel/Distributed Computing (SNPD 2004). Beijing, China.

Ehonwa, O. L., & Odinkalu, A. C. (1991). *Behind the Wall: A Report on Prison Conditions in Nigeria and the Nigerian Prison System.* Lagos: CLO.

Ghasemzadeh, F., & Archer, N. P. (2000). Project portfolio selection through decision support. *Decision Support Systems, 26*, 73-88. https://doi.org/10.1016/S0167-9236(00)00065-8