CLUSTER ANALYSIS FOR GROUPING OF PRISONER PERSONALITY IN THE INDUSTRIAL REVOLUTION 4.0 ERA

Retno Ryani Kusumawati, Hannibal, Retika Najmamulat Asih

ABSTRACT

Industrial revolution 4.0 has affected all fields, including Indonesian Ministry of Law and Human Rights whose conducting a revitalization of correctional service where capacity was the main point of clustering is now changing into clustering based on change in behavior of the prisoners, which then used as recommendation for placing prisoners into Minimum Security, Medium Security and Maximum Security Prison. Prisoner's Personality will show a prisoner's tendency to behave and to think. Personality can be measured through Big Five Personality Model consisting of Openness to Experience, Conscientiousness, Extraversion, Agreeableness and Neuroticism. To simplify the placement process, the K-Means Clustering method is used. Of 137 prisoners assessed from Rangkasbitung and Serang Prison, 27 prisoners being placed to Medium Security prison, 52 prisoners to Maximum Security prison, and 58 prisoners to Minimum Security prison.

Keyword: Big Five Personality, Industrial Revolution 4.0, Prisoner's Personality, Revitalization of Correctional Service,

PRELIMINARY

The development of information technology from time to time makes changes and shifts the role of human resources into machines. Shifting information that is usually physically obtained becomes digital. Technological developments enhance the revolution. The 4.0 industrial revolution was characterized by the use of the internet, eliminating all existing physical boundaries. The 4.0 industrial revolution provides opportunities and benefits in various fields including business, economics, government as well as social and community. The most noticeable benefit is that everything becomes more efficient both in terms of time and cost. However, the big challenge that must be faced is the increasingly complex security issues, increasingly unnecessary HR problems, wider social inequalities, and other issues that have a negative impact.

Ministry of Law and Human Rights R.I. (abbreviated as Kemenkumham R.I.) is a ministry within the Indonesian Government in charge of legal and human rights affairs. Kemenkumham is under and responsible to the President of the Republic of Indonesia. Kemenkumham Regional Office (Kanwil) is a vertical agency of Kemenkumham domiciled in each province, which is under and responsible to the Minister of Law and Human Rights. Regional Offices consist of several divisions which oversee a number of Technical Implementation Units (UPT), including the Immigration Office, Correctional Institutions (Lapas), Open Correctional Institutions, Narcotics Prisons, Detention Centers (Rutan), Houses for Storage of State Confiscated Items (Rupbasan), Correctional Center (Bapas), Heritage Hall (BHP), and Immigration Detention House (Rudenim).

The existence of the 4.0 Industrial Revolution is a big challenge for the Ministry of Law and Human Rights. The toughest challenge in the UPT Lapas and Rutan is responsible for prisoners. It is a challenge for the Ministry of Law and Human Rights to be able to change the behavior of prisoners living in correctional institutions/detention in the period according to their criminal law. They will return to society with better personal and behavioral changes. The pattern of coaching in prisons must be adapted to changes in society in this era of revolution. The challenge of the Ministry of Law and Human Rights to create a new form of revolution on Prison management is one of them is Revitalization of Correctional Management. The correctional implementation itself aims to restore the relationship of the prisoners, whether in relation to his God, his personality, his fellow human beings, as well as his environment, and to make the prisoners productive and expected to be a human being who is empowered.

Another problem in the current penal system is overcrowding. Overcrowding is a problem in almost all UPT Prisons where the number of prisoners in Prisons/Detention Centers (Lapas/Rutan) has exceeded its capacity. This overcrowding creates new problems,

such as the imbalance in the number of correctional officers, the lack of budgets and facilities due to concentrated funds to combat prisoners' eating, which in turn results in the service and security of prisoners were not optimal. The failure of these things eventually led to the development received by each prisoners to be uneven resulting in the unpreparedness of some prisoners to deal with life outside the prison, especially with the existence of the 4.0 Industrial Revolution that requires individuals to become skilled human resources, innovation, and creativity, and the individual must also be able to utilize the skills he has in order to produce a product that can then be marketed so that building an entrepreneurial spirit becomes important to survive in life outside of prison.

Correctional systems with a large number of prisoners that have been placed previously referring to the capacity of prisons/detentions will be transferred to the revitalization system for the administration of prisons requiring special time. Starting from doing personality prisoners mapping, infrastructure, and prison/detention design then grouping individuals according to their personalities. Furthermore, prisoners will be placed according to his personality. To help facilitate these activities, an appropriate, fast and accurate method is needed. In this study, prisoner's personality grouping will be conducted as a recommendation for prisoner's placement.

LITERATURE REVIEW

Industrial Revolution 4.0 Era

The industrial revolution is a big and radical change in the way humans produce goods. The industrial revolution began with the Industrial Revolution 1.0 which was marked by the growth of mechanization and energy based on steam and water. During the Industrial Revolution 2.0, electrical energy and motorbikes emerged. Furthermore, in Revolution 3.0 was marked by the growth of the electronics-based industry, information technology, and automation. Then, came the 4.0 Industrial Revolution which was marked by the development of the Internet of/for Things (Schwab, 2017). Schwab (in his book *The Fourth Industrial Revolution*, 2017), states that the Industrial Revolution 4.0, fundamentally, changed the way of life, working and relating to each other

This industrial revolution, in fact, has an impact on all fields, such as the manufacturing industry, production value chains, socio-economic factors, up to the education and skills of workers. Indonesia itself, basically, is still not ready for Human Resources (HR) and its distribution. In this 4.0 Industrial Revolution, there are at least 3 things that need to be considered, namely the quality of human resources to fit the needs of the labor market based on digital technology; the quantity of qualified, competent and in accordance with industry needs; and uneven distribution of HR (Haryono, 2018).

Big Five Personality

Personality can give a picture of a person's tendency to behave and think, which behavior and thoughts of a person will bring up a pattern of action, as explained by Pervin, Cervone, and John (in Widhiastuti, 2014) that personality affects thoughts, feelings, and behavior someone's behavior. Personality can be seen through several models, one of which is through the Big Five Personality Model, which consists of 5 personality dimensions abbreviated as OCEAN, (John, 1990).

OCEAN consists of Openness to Experience (O) which includes curiosity, broad interest, creativity, originality and imaginative; Conscientiousness (C) which involves regularity, accuracy, persistence, and the nature of discipline in completing a task; Extraversion (E) which shows the ability to adjust to the environment, activeness in interaction, optimism and concern for others; Agreeableness (A) which describes tenderness, someone's trust with others, sympathy and empathy, and the ability to cooperate/cooperate; and Neuroticism (N) which includes negative feelings, such as anxiety, nervousness, emotions, feelings of inadequacy and impulsivity.

Revitalization of Correctional Services

In Law Number 12 of 1995 concerning Penitentiary, it is explained that the correctional system is an order of direction and boundaries and a way of fostering prisoners based on Pancasila that is carried out in an integrated manner between the Trustees, who are fostered, and the community to improve the quality of Prisoners in order to be aware of mistakes, improve themselves, and not repeat criminal acts so that they can be accepted back by the community, can actively play a role in development, and be able to live naturally as a good and responsible citizen. Therefore, the system of correctional administration is made in such a way as an effort to restore the prisoner to its nature in human relations with God, human beings with their personalities, and humans with their environment.

To support and direct, the Government, in this case, the Ministry of Law and Human Rights R.I. has issued Regulation of the Minister of Law and Human Rights of the Republic of Indonesia Number 35 Year 2018 concerning Revitalization of Penitentiary Management which explains that Revitalization of Correctional Operations is an effort to optimize the implementation of correctional facilities as a form of treatment of Prisoners, Prisoners and Clients, and protection of ownership rights to evidence. With this, Revitalization of Penitentiary Management includes the formation of Prisoners (Regulation of the Minister of Law and Human Rights R.I. Number 35 of 2018). Through this revitalization, prisoners is obliged to conduct an assessment as a recommendation in placing prisoners into Super Maximum Security, Maximum Security, Medium Security, and Minimum Security Prisons. The following is a comparison matrix between each prison.

Table 1. Prison Comparison Matrix

No	Indicator	<i>Super Maximum Security</i>	<i>Maximum Security</i>	<i>Medium Security</i>	<i>Minimum Security</i>
1.	Goal	Aware of	Discipline	Trained	Integrated
2.	Indicator of Success	<ul style="list-style-type: none"> Ward off bad influences that are attached to personality or behavior Changing the concept of self about personality or behavior 	<ul style="list-style-type: none"> Establish self-discipline Build compliance with rules 	<ul style="list-style-type: none"> Providing education and training Ensure continuity of training with market share Providing learning opportunities in the production / apprenticeship area 	<ul style="list-style-type: none"> Build healthy interactions with the community Employ according to competence Provide additional business value from production
3.	Program	<ul style="list-style-type: none"> Disengagement There is no remission There is no reintegration program Visit services using Multimedia/ Video Conference (not in one building) 	<ul style="list-style-type: none"> System Concentration There is remission There is no reintegration program Visit Service uses an intercom and separator (located in one building but no physical contact) 	<ul style="list-style-type: none"> Vocational Training / Life Skill Training There is remission There is assimilation or management and CMK Visit services can be face to face and physical contact in a building with supervision 	<ul style="list-style-type: none"> Integration There is remission There are CMK, PB, CB, CMB Visit services can be face to face and physical contact in a building and given a family visit permit
4.	Accessibility	<ul style="list-style-type: none"> Individual movements do not exist Individual supervision Communication only with officers and on a limited basis 	<ul style="list-style-type: none"> Individual movements are limited Group supervision Communication with officers freely Communication with 	<ul style="list-style-type: none"> Individual movements are limited Group supervision Communication with officers freely Communication with 	<ul style="list-style-type: none"> Free individual movements Group supervision Communication with officers freely Communication with

No	Indicator	<i>Super Maximum Security</i>	<i>Maximum Security</i>	<i>Medium Security</i>	<i>Minimum Security</i>
			prisoners is limited	prisoners freely <ul style="list-style-type: none"> Limited communication with family 	prisoners freely <ul style="list-style-type: none"> Communicate with family freely
5.	Placement	Prisoners based on the results of the assessment are categorized as having a very low level of awareness/high risk	<ul style="list-style-type: none"> Prisoners from the Super Maximum Security Prison or convicted based on the results of the assessment have a low level of awareness 	Prisoners from Maximum Security or Prisoners based on the results of the assessment have a medium level of awareness	<ul style="list-style-type: none"> Prisoners from Medium Security Prison based on the results of the assessment have a high level of awareness

Source : Direktorat Jenderal Pemasyarakatan, 2018

By looking at the indicators above, then at each level of prison there is guidance as follows:

Table 2. Prison's Level

Prison's Level	Type of Fostering Prisoners	Instution in Charge
<i>Super Maximum Security</i>	a. Development of religious awareness b. Fostering awareness of nation and state c. Legal awareness development d. Psychology counseling	Direktorat Jenderal Pemasyarakatan
<i>Maximum Security</i>	a. Development of religious awareness b. Fostering awareness of nation and state c. Legal awareness development d. Fostering intellectual abilities e. Psychology counseling f. Rehabilitation	Kantor Wilayah Kementerian Hukum dan HAM R.I.
<i>Medium Security</i>	a. Beginner level education and skills training b. Advanced level of education and skills training c. Advanced level of education and skills training	Kantor Wilayah Kementerian Hukum dan HAM R.I.
<i>Minimum Security</i>	Industrial scale production of goods or services	Kantor Wilayah Kementerian Hukum dan HAM R.I.

Source : Permenkumham R.I. Nomor 35 Tahun 2018

Following are the provisions of personality as recommendations for placement of prisoners by referring to the Regulation of the Minister of Law and Human Rights R.I. Number 35 of 2018.

Table 3. Term on Conditions of Prisoner's Personality

Prison Levels	Indicator of Prisoner Behavior	Prisoner's Personality
<i>Super Maximum Security</i>	a. Ever/have a tendency to escape/plan to escape from prison, both with/without the help of others/networks, and endanger other people or not b. Ever/have a tendency to commit violence, both individually and in groups c. Still active as a member of extremist/religious based fundamentalist groups/networks and/or as members of separatist groups/networks d. Never/still hold important positions in extremist groups/networks based on religion and/or as members of separatist groups/networks e. Have ever received military training, such as a former TNI or a former police officer, and/or paramilitary training f. Have been involved in and/or held important positions in demonstrations g. Have been processed legally more than 3 times due to traffic violations that are not accidental	<ul style="list-style-type: none"> <i>Neuroticism</i> (N) high <i>Extraversion</i> (E) low <i>Openness to Experience</i> (O) low <i>Agreeableness</i> (A) low <i>Conscientiousness</i> (C) high

Prison Levels	Indicator of Prisoner Behavior	Prisoner's Personality
	h. Never been dismissed from work because of disciplinary violations i. Having been diagnosed as having a tendency to very high aggressiveness/anti-social personality/anti-authority personality/having a temperament personality j. Having been diagnosed by a doctor having a dangerous infectious disease that cannot/is difficult to cure k. Having been diagnosed by a psychologist/psychiatrist has a severe psychological disorder l. Having been diagnosed by a psychologist/psychiatrist has below average intelligence m. Has great political power/influence	
Lapas Maximum Security	a. There is a tendency to escape/plan to escape from the prison, both with/without the help of others/networks, and endangering others b. There is a tendency to commit violence, both individually and in groups c. Still active as a member of extremist/religious based fundamentalist groups/networks and/or as members of separatist groups/networks d. Have ever received military training, such as a former TNI or a former police officer, and/or paramilitary training e. Ever been involved in demonstrations f. Have been processed legally more than 3 times due to traffic violations that are not accidental g. Never been dismissed from work because of disciplinary violations h. Ever been diagnosed as having a tendency to high aggressiveness/anti-social personality/anti-authority personality i. Having been diagnosed by a doctor having a dangerous infectious disease that cannot/is difficult/can be cured j. Having been diagnosed by a psychologist/psychiatrist has moderate-level psychological disorders k. Having been diagnosed by a psychologist/psychiatrist has below average intelligence	<ul style="list-style-type: none"> • Neuroticism (N) medium • Extraversion (E) low • Openness to Experience (O) low • Agreeableness (A) low • Conscientiousness (C) medium
Medium Security	a. There is no tendency to escape from prison b. There is no tendency to commit violence, either individually or in groups c. Never been involved as a member of extremist/religious-based fundamentalist groups/networks and/or as members of separatist groups/networks d. Psychologically, the level of aggressiveness is low and there is no tendency for an anti-social/anti-authority personality e. It has been diagnosed by a doctor that there is no contagious disease f. Have been diagnosed by a psychologist/psychiatrist having a mild psychological disorder or not having a psychological disorder g. Ready to receive training, both physically and mentally prepared	<ul style="list-style-type: none"> • Neuroticism (N) low • Extraversion (E) low • Openness to Experience (O) medium • Agreeableness (A) medium • Conscientiousness (C) low
Minimum Security	a. There is no desire to escape from the prison b. There is no tendency/does not like violent behavior c. Never been involved as a member of extremist/religious-based fundamentalist groups/networks and/or as members of separatist groups/networks d. Psychologically, the level of aggressiveness is low and has the ability to interact socially well e. It has been diagnosed by a doctor that there is no contagious disease f. Having been diagnosed by a psychologist/psychiatrist does not have a psychological disorder g. Have the skills to produce a marketable product h. Can create innovations, both product innovations produced, production processes, and how to market products	<ul style="list-style-type: none"> • Neuroticism (N) medium • Extraversion (E) medium • Openness to Experience (O) high • Agreeableness (A) high • Conscientiousness (C) high

Source: Kanwil Kemenkumham Banten, 2019

RESEARCH METHODS

This study uses primary data derived from prisoner's personality data records from Serang Prison and Rangkas Prison. The number of prisoners that became the object of the study was 137 in total. The independent variables used in this study are:

1. Openness to Experience
2. Conscientiousness
3. Extraversion
4. Agreeableness
5. Neuroticism

This study will classify prisoners based on their personality by using cluster analysis in SPSS. Follow existing data, for the clustering process using the Non-Hierarchical or K-Means Cluster method. The K-Means method processes all objects at once. This process starts with determining the number of clusters first. The desired number of clusters is in accordance with the responsibilities of the Regional Office of the Ministry of Law and Human Rights, namely as many as 3 clusters namely the Maximum Security Prison, Medium Security Prison and Minimum Security Prison.

After the analysis, continued with the interpretation of each cluster to see the difference in variables in the cluster formed and the number of members in each cluster.

ANALYSIS AND DISCUSSION

Respondents in this study were prisoners in the correctional institutions/detention of Banten Regional Office of the Ministry of Law and Human Rights with a total of 137 people. Descriptive statistics are used to find out how the general description of the spread of prisoners in each. Descriptive statistics of Inamate's personality can be seen in the following table:

Table 4. Descriptive Statistic of Prisoner's Personality
Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Openness	137	5	16	11.23	1.819
Conscientiousness	137	6	15	12.09	1.873
Extraversion	137	8	15	10.73	1.512
Agreeableness	137	5	16	11.31	1.897
Neuroticism	137	6	15	10.53	1.839
Valid N (listwise)	137				

Furthermore, it can be done to adjust personality scores by using a data concentration measure that divides the data into four equal parts, namely $1/4$ N each or called Quartile (Q). The quartile is divided into three, namely quartile 1 (Q1), quartile 2 (Q2), and quartile 3 (Q3). These three quartiles divide all distributions from data frequencies which will be counted into four equal parts and $1/4$ N respectively. The results are as follows:

Table 5. Normalization of Personality Scores

Personality Score	Description
< 11	Low
11	Medium
> 11	High

The next step is cluster analysis using the Non-Hierarchical Cluster or K-Means Cluster method with the SPSS version 23. Aids program From the clustering process, there are 3 clusters or groups of respondents, each of which has different characteristics from one another. The average respondent's personality score is as follows:

Table 6. Personality According to Clusters

Personality	Cluster 1	Cluster 2	Cluster 3
<i>Openness to Experience</i>	11	10	12
<i>Conscientiousness</i>	9	13	13
<i>Extraversion</i>	10	10	11
<i>Agreeableness</i>	11	10	13
<i>Neuroticism</i>	9	11	11

Interpretation of each Cluster

Cluster 1

Cluster 1 contains prisoners which has the following personalities:

Table 7. Personality in Cluster 1

Personality	Cluster 1	Description
<i>Openness to Experience</i>	11	High
<i>Conscientiousness</i>	9	Low
<i>Extraversion</i>	10	Low
<i>Agreeableness</i>	11	Medium
<i>Neuroticism</i>	9	Low

Prisoners in Cluster 1 shows that the average of prisoners is quite open to new insights, but still prefers things that are conventional and simple. In addition, this includes individuals who often work aimlessly, tend to give up easily, and are lazy. Prisoners in this cluster is also rather closed, not enjoying social interaction so much, it is rather difficult to empathize, but it is not difficult to be cooperative if asked. This cluster also includes a person who is calm, relaxed, and emotionally strong. Looking at the profile, it is predictable that the tendency of the prisoners in Cluster 1 to be placed in the Medium Security Prison.

In the Medium Security Prison, prisoners will receive training in the form of training to improve/increase its skills so that prisoners could create a product that could be marketed. Guidance is in accordance with the personality of the prisoners in this cluster where guidance is needed which forces the prisoners to work with certain goals and strengthens its ability to socialize because it is faced with other people who also get the same training. In addition, prisoners in this cluster is not difficult to be cooperative and also has calm/not emotional emotions so there will be no obstacles in giving guidance.

Cluster 2

Cluster 2 contains prisoners which has the following personalities:

Table 8. Personality in Cluster 2

Personality	Cluster 2	Description
<i>Openness to Experience</i>	10	Low
<i>Conscientiousness</i>	13	High
<i>Extraversion</i>	10	Low
<i>Agreeableness</i>	10	Low
<i>Neuroticism</i>	11	Medium

Prisoners in Cluster 2 shows that the average has a tendency to be uncooperative, cynical, rude, even manipulative, cruel, and easily suspicious of others. Coupled with the low level of extraversion, this cluster include a quiet type, less friendly, and prefers to be alone as a

prisoners. Prisoners in this cluster also has a tendency towards impulsivity and easily provoked emotions, even if there is nothing to disturb, prisoners tends to look calm. This shows the possibility of prisoners to committing acts of violence, besides that it is added to the nature of hardworking, neat, and careful, it is possible, the prisoners can arrange a plan to escape carefully so that it is not known by others, Therefore, looking at the personality profile, the prisoners in Cluster 2 should be placed in the Maximum Security Prison.

Cluster 3

Cluster 3 contains prisoners which has the following personalities:

Table 9. Personality in Cluster 3

Personality	Cluster 3	Description
<i>Openness to Experience</i>	12	High
<i>Conscientiousness</i>	13	High
<i>Extraversion</i>	11	Medium
<i>Agreeableness</i>	13	High
<i>Neuroticism</i>	11	Medium

Prisoners in Cluster 3 shows that on average prisoners has a broad, creative interest and great curiosity. Besides that, it is supported by hard-working, organized, neat, and careful personnel in work, as well as being cooperative, empathetic, and obedient. Although prisoners in this cluster has an average tendency to be anxious and nervous, as long as there is no trigger, prisoners with a quiet person. prisoners in this cluster also enjoys socializing with other people, but at certain times it also takes time for themselves. Looking at the personality profile, prisoners in this cluster is appropriate if placed in the Minimum Security Prison. His creative personality, hard worker, cooperative, and thoroughness in his work show his ability to be productive individuals, especially if accompanied by skills that suit his interests and talents.

From the results of the cluster analysis, it can be seen that prisoners will be placed, namely:

Table 10. Prison Level

Prison Level	Number of Prisoner's Placement
<i>Medium Security</i>	27
<i>Maximum Security</i>	52
<i>Minimum Security</i>	58

CONCLUSION

Based on the results of the analysis discussed, it was found that out of 137 prisoners that had previously been placed in Rangkasbitung and Serang Prison, they would be placed according to their personalities. prisoners with a high Openness to Experience personality, high Conscientiousness, Moderate Extraversion, High Agility and Neuroticism will be placed in the Minimum Security Lapas. In this study 58 people will be placed in the Minimum Security Prison.

Prisoners with moderate Openness to Experience personality, high Conscientiousness, low Extraversion, Agreeableness and Low Neuroticism will be placed in Medium Security Prison. In this study 27 people will be placed in the Medium Security Prison.

Prisoners with a low Openness to Experience personality, high Concerniousness, Moderate Extraversion, Agreeableness and Low Neuroticism will be placed in the Maximum Security Prison. In this study 52 people will be placed in the Maximum Security Prison.

LIMITATIONS AND RECOMMENDATIONS

This research is a preliminary study using the K-Means method which is processed using SPSS. When compared with the manual calculations made by Kemenkumham employees there is no significant difference from the results. But manual calculations using the Ms-Excel program help take a long time and are done in many stages.

The number of prisoners in Banten for all UPTs is approximately 11,000 people. For existing prisons, design and infrastructure have been prepared in accordance to Regulation of Ministry of Law and Human Rights Number 11 of 2017 concerning Grand Design Handling Overcrowded in State Detention Houses and Correctional Institutions that have adopted technology in the era of 4.0.

Furthermore, with placements tailored to the personality of the prisoners, it is expected that prisoners will get guidance that is in accordance with the conditions and situation. The placement of the prisoners is also expected to reduce the overcrowding that occurs in almost all Correctional Technical Implementation Units, both in the Banten Regional Office of the Ministry of Law and Human Rights and in all other Regional Offices of the Ministry of Law and Human Rights of the Province. With the reduction in overcrowding, prisoners had also received coaching evenly so that it can be an individual who is ready to face life outside of correctional institutions / detention and contribute as a productive HR in the era of the Industrial Revolution 4.0.

The K-Means Clustering method can be used as a prisoners grouping method based on its personality at other Technical Implementation Units in the Banten Regional Office of the Ministry of Law and Human Rights and can be further developed through various measurement tools considering that the K-Means Clustering method is more practical and faster.

BIBLIOGRAPHY

- Donnelly, G., Iyer, R., & Howell, R. T. (2012). The Big Five personality traits, material values, and financial well-being of self-described money managers. *Journal of Economic Psychology*, 33(6), 1129-1142. <https://doi.org/https://doi.org/10.1016/j.joep.2012.08.001>
- Haryono, Siswoyo. (2018). *Re-Orientasi Pengembangan SDM pada Revolusi Industri 4.0*. Universitas Muhammadiyah Yogyakarta. Yogyakarta.
- John, O. P. (1990). "The Big Five Factor Taxonomy: Dimension of Personality in the Natural Language & in Questionnaires". In L. Pervin (Ed.) *Handbook of Personality: Theory & Research*. (pp. 66-100). Guilford Press. New York.
- Keputusan Direktur Jenderal Pemasyarakatan Kementerian Hukum dan Hak Asasi Manusia Republik Indonesia Nomor : PAS-15.PR.01.01 Tahun 2019 tentang Penetapan Lembaga Pemasyarakatan *Pilot Project Maximum Security, Medium Security, dan Minimum Security*.
- Lippa, R. A. (2006). Finger lengths, 2D:4D ratios, and their relation to gender-related personality traits and the Big Five. *Biological Psychology*, 71(1), 116-121. <https://doi.org/https://doi.org/10.1016/j.biopsycho.2005.02.004>.
- Milfont, T. L., & Sibley, C. G. (2012). The big five personality traits and environmental engagement: Associations at the individual and societal level. *Journal of Environmental Psychology*, 32(2), 187-195. <https://doi.org/https://doi.org/10.1016/j.jenvp.2011.12.006>
- Oltedal, S., & Rundmo, T. (2007). Using cluster analysis to test the cultural theory of risk perception. *Transportation Research Part F: Traffic Psychology and Behaviour*, 10(3), 254-262. <https://doi.org/https://doi.org/10.1016/j.trf.2006.10.003>.
- Peraturan Menteri Hukum dan Hak Asasi Manusia Republik Indonesia Nomor 35 Tahun 2018 tentang Revitalisasi Penyelenggaraan Pemasyarakatan.
- Peraturan Menteri Hukum dan Hak Asasi Manusia Republik Indonesia Nomor M.HH-05.OT.01.01 Tahun 2011 tentang Perubahan atas Keputusan Menteri Kehakiman Nomor M.01-PR.07.03 Tahun 1985 tentang Organisasi dan Tata Kerja Lembaga Pemasyarakatan.

- Peraturan Menteri Hukum dan Hak Asasi Manusia Republik Indonesia Nomor 11 Tahun 2017 tentang *Grand Design* Penanganan *Overcrowded* pada Rumah Tahanan Negara dan Lembaga Pemasyarakatan.
- Santoso, Singgih. (2018). *Mahir Statistik Multivariat dengan SPSS*. PT Elex Media Komputindo. Jakarta.
- Schwab, Klaus. (2017). *The Fourth Industrial Revolution*. Crown Business. New York.
- Stephens, C. L., Christie, I. C., & Friedman, B. H. (2010). Autonomic specificity of basic emotions: Evidence from pattern classification and cluster analysis. *Biological Psychology*, 84(3), 463–473. <https://doi.org/10.1016/j.biopsycho.2010.03.014>
- Undang – Undang Republik Indonesia Nomor 12 Tahun 1995 tentang Pemasyarakatan.
- Widhiastuti, Hardani. (2014). “Big Five Personality sebagai Prediktor Kreativitas dalam Meningkatkan Kinerja Anggota Dewan”, *Jurnal Psikologi*, 41, 115–133.
- Wiggins, J. S., & Trapnell, P. D. (1997). Chapter 28 - Personality Structure: The Return of the Big Five (R. Hogan, J. Johnson, & S. B. T.-H. of P. P. Briggs, eds.). <https://doi.org/https://doi.org/10.1016/B978-012134645-4/50029-9>