



Big Five Personality Traits and Criminal Recidivism: Mediating Effect Framework

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Abstract

Many studies have shown the significant relationship of the Big Five facets of the individual personality in relation to criminal behaviour and re-offending (recidivism). This study examined the mediating effect of the Big Five personality traits of ex-prisoners based on their prison experiences in relation to criminal recidivism using the Five-Factor Model (FFM) model. Data were drawn purposely among the ex-prisoners ($n=256$) in metropolitan Kano, Nigeria using survey method. The study utilized PROCESS procedures for SPSS & SAS software, but in specific terms PROCESS (Hayes, 2013) was used in running the mediation analysis of the data. The result showed that, out of the five facets of the FFM only two were having a mediating effect between prison experience and criminal recidivism among the ex-prisoners. Specifically, conscientiousness ($X-Y=1.12$, $X-M=-0.07$, $X+M$ together predicting $Y=-0.12$, $C'=1.10$), and agreeableness ($X > Y=1.12$, $X-M=-0.24$, $X+M$ together predicting $Y=-0.04$, $C'=1.10$) were having mediation effect. The remaining facets did not mediate. The study concluded that personality traits can mediate the relationship between prison experience and criminal recidivism among the ex-prisoners with particular reference to conscientiousness and agreeableness.

Keywords: Criminal Recidivism, Ex-prisoners, FFM, Mediation, Personality Traits

Introduction

Individual personality and its role in the area of crime and correctional studies have come a long way. Though, it is usually directed towards classification and treatment of offenders rather than to the explanation of causality (Listwan et al., 2010). Many scholars in the area of corrections (Megargee, 1994; Jesness, 1983; Warren, 1983; Megargee & Bohn, 1979; Quay & Parsons, 1972) have come up with psychological typologies to differentiate individuals who are considered as offenders that require correctional purposes.

However, few studies are found to have concerns for the personality types identified by those typologies to be associated with offender behaviour (Heide, 1982, 1999; Van Voorhis, 1994; Jesness, 1988). One of the central focus of the correctional typologies is to put in place differential treatment strategies that would be assigned to offenders in the correctional

interventions on the basis of their personality considerations. Also, Andrews & Bonta (1998), perceived personality to be a 'responsivity' consideration and it is also considered as one of numerous individual dispositions or characteristics that are considered as having influence towards offenders' success or otherwise within a given correctional programmes. According to Andrews and Bonta (1998), personality measures should be integrated when it comes to the understanding of criminal behaviour. In essence, the successful integration and eventual inclusion of personality in the correctional settings is usually seen as an adequate 'test' of its applicability to theory.

In a meta-analysis study by Miller and Lynam (2001), on the relationship between personality and general antisocial behaviour, they noted that the new generation of personality research usually employs and utilises some structural approaches. According to them, such approach utilises widely agreed upon types, dimensions,

domains to organise and categorise the multitude of traits that ultimately comprise personality. Thus, the most frequently and commonly used structural models include: (i) neuroticism, extraversion, openness to experience, agreeableness and conscientiousness (John & Srivastava, 1999); (ii) positive emotionality, negative emotionality and constraint (Tellegen, 1985); (iii) psychoticism, extraversion and neuroticism (Eysenck, 1977). All these are structures that were established and found to be associated with criminal behaviour.

Personality Traits and Recidivism

It is argued that Big Five personality traits are empirically and often used to best describe the dimensions of personality (Fayombo, 2010). Specifically, these are: Openness, Conscientiousness, Extroversion, Agreeableness, and Neuroticism (OCEAN)/ (CANOE) when they are arranged the other way (Digman, 1990; Ewen, 1998; Srivastava, 1999; The OCEAN of Personality, 2004). The term "Big Five" was coined by Goldberg (1993) which was initially associated with studies of personality traits used in natural language. The Big Five are usually considered universal and widely used especially when people are asked to describe their personalities themselves (Passini & Norman, 1966) and they are also considered to be associated with predictable patterns of behaviour and social outcomes (John & Srivastava, 1999). The (Big Five) facets are equally known as the Five-Factor Model (FFM) (Costa & McCrae, 1992) which was first presented by the President of the American Psychological Association, Thurstone, (1933) and as the global factors of personality (Russell & Karol, 1994). The term "Five-Factor Model" has been more commonly associated with studies of traits using personality questionnaires (Ahmed, 2016; Ahmed & Ahmad, 2015a; McCrae & Costa, 1992) and personality researchers commonly agree that personality is best captured by the five factor model rather than by two, three, sixteen or forty factor models (John & Srivastava, 1999; McCrae & Costa 1992). The five factor model encompasses factors which are actually a cluster of more specific traits that are known to be statistically correlated.

Conscientiousness Trait

Individuals with conscientiousness personalities are normally found to be organised and thorough. They also have the ability to plan their activities ahead and also relate to impulse control. However, this is not same with the problems of impulse control found in neuroticism. According to Costa and McCrae (1992), people who are high on neurotic impulsiveness find it difficult to resist temptation or delay gratification while individuals who are low on conscientious self-discipline are unable to motivate themselves to perform a task that they would like to accomplish. Though, they can be conceptually similar but empirically distinct. Moreover, Goleman (1997) stressed that many of the behaviours associated with conscientiousness fall under the broad category of emotional intelligence and are frequently assessed by self-report integrity tests given by various corporations to prospective employees. Studies also indicated that conscientiousness is one of the best predictors of performance in the workplace and conscientious employees are generally more reliable, more motivated and hard working (Salgado, 1997).

Agreeableness Trait

This personality trait measures how compatible people are with others. It is basically considered as how people are able to get along with others. It is a tendency to be pleasant and accommodating in social circumstances and situations reflecting individual differences in concern for cooperation and social harmony (Graziano & Eisenberg, 1997). People with agreeable traits are found to be empathetic, considerate, friendly, generous, and helpful. They also have an optimistic view of human nature. They tend to believe that most people are honest, decent, and trustworthy and less likely to suffer from social rejection (Bierman, 2003). Moreover, it is established that most people who are likely to help their own kin, or empathise with them but contrarily, agreeable people are likely to help even when these conditions are not present (Graziano, Habashi, Sheese, & Tobin 2007). Thus, they can help and do not need any other motivations (Penner, Fritzsche, Craiger, & Freifeld, 1995).

Neuroticism Trait

Neuroticism has an inherent negative denotation (Fayombo, 2010) and it is sometimes referred to as 'Emotional Stability'. It is an enduring tendency pattern to experience negative emotional states like anxiety, anger, guilt, and depressed mood (Matthews & Deary 1998). Goleman (1997) established that people with such trait respond more poorly to environmental stress; they are more likely to interpret ordinary situations as threatening and minor frustrations as hopelessly difficult. They are often self-conscious and shy, and they may have trouble controlling urges and delaying gratification (Fayombo, 2010). Furthermore, neurotic personality is also associated with low emotional intelligence, which equally involves emotional regulation, motivation, and interpersonal skills. It is also a risk factor for "internalizing" mental disorders such as phobia, depression, panic disorder, and other anxiety disorders which are traditionally referred to as neurosis (Hettema, Neale, Myers, Prescott, & Kendler 2006). People who are highly neurotic may show more emotional reactions whenever confronted with stressful situations (Van Heck, 1997). On the other hand, such personalities appear to use avoiding and distracting coping strategies, such as denying, wishful thinking, and self-criticism, rather than more approaching strategies (Bolger, 1990; Heppner et al., 1995; McCrae & Costa, 1986). Ineffective coping with stressful situations in the work environment makes individuals who are highly neurotic more vulnerable to the symptoms that are typically associated with burnout (Bakker, Van der Zee, Lewig & Dollard 2006).

Openness to Experience Trait

Openness to Experience is also referred to as Intellect or Imagination. The trait refers to how willing people are to make adjustments in notions and activities in accordance with new ideas or situations (Goldberg, 1993; McCrae, & John, 1992). It includes traits like having wide interests, being imaginative, insightful, attentiveness to inner feelings, preference for variety, and intellectual curiosity (Costa, & McCrae, 1992). Findings by researchers have established that people who are highly open to experience tend to be politically liberal and tolerant of diversity (McCrae 1996; Jost, 2006). Moreover, they are generally considered to be

more open to different cultures and lifestyles. They are lower in ethnocentrism and right-wing authoritarianism. There is no relationship between openness and neuroticism, or any other measure of psychological well-being. Being open and closed to experience are simply two different ways of relating to the world (Butler, 2000).

Extraversion Trait

This trait of personality is also known as Surgency. It refers to a social adaptability, though the popularity of this term seems to be diminishing (Zuckerman, 1991). Extraversion is the act, state, or habit of being predominantly concerned with and obtaining gratification from what is outside the self. It is also defined as a trait characterized by a keen interest in other people and external events, and venturing forth with confidence into the unknown (Ewen, 1998). The broad dimension of extraversion encompasses such more specific traits as talkative, energetic, gregarious and assertiveness.

On the other hand, some finding suggested that criminal recidivism represents a stable behavioural pattern (Savage, 2009). Thus, it is plausible to assume that personal dispositions could be one of the determinants of that kind of behaviour. The personality traits that are considered as being related to criminal recidivism are those that were already established and proven as being related to criminal behavior in general. Findings showed that the Big Five domains (John, Naumann, & Soto, 2008) maintain stable and interpretable relations with delinquency and crime. These findings relate primarily to negative correlations between crime and Agreeableness and Conscientiousness (Miller & Lynam, 2001; Le Couff & Toupin, 2009).

Criminal personality is associated and characterized by aggression and the inability to delay gratification. This is also established based on the relationships between the Big Five personality factors and recidivism even in juvenile delinquents. In a study conducted by van Dam, Janssens, and De Bruyn (2005), their findings demonstrated that objectively operationalized recidivism (court and police information) was not related to personality structure. Albeit, when recidivism was examined

by self-assessment measures, statistically significant differences between non-recidivists and recidivists have appeared. Recidivists scored significantly higher on Neuroticism and lower on Agreeableness (van Dam et al., 2005). Another finding established that significant predictors of recidivism were low conscientiousness and low openness, while the interaction of these domains, when their influence on recidivist behavior was in question, was also significant (Clower & Bothwell, 2001).

Current Study and Conceptual Framework

Many studies in the area of criminology, and psychological criminology to be specific, established a significant relationship among psychopathology, personality traits and criminal recidivism among individuals (Ullrich & Marneros, 2006). Moreover, other studies equally established a link between specific facets of personality and the tendency of committing crime, violence, aggression and other anti-social behaviours. Findings of such studies are congruent (Međedović, 2012) with those demonstrating that psychotic symptoms are related to the production of violent behaviour independently (Douglas, Guy, & Hart, 2009) or those that are in constant interaction with psychopathic characteristics (Fullam & Dolan, 2006) can lead to crime and recidivism. In line with these arguments, this study intends to use the Big Five personality traits with a view to establishing which among them has the capacity of mediating the relationship between the prison experiences of the ex-prisoners and criminal recidivism among the ex-prisoners in metropolitan Kano, Nigeria. Hence, the study set to test a hypothesis: *personality traits significantly mediate the relationship between prison experiences of the ex-prisoners and criminal recidivism.*

Method and Plan of Analysis

The study adopted survey method. The respondents (ex-prisoners) were purposively selected within the metropolis. Specifically, 256 respondents were used after the initial data cleaning and screening was conducted in order to ascertain the requirement of multiple regressions. For the analysis strategy, the study utilized PROCESS procedures for SPSS & SAS software, but in specific terms PROCESS (Hayes, 2013) mediation technique was used in

order to establish the mediating effect of the Big Five personality facets in relation to prison experiences of the ex-prisoners and criminal recidivism.

Measurement

Two main constructs were used. Their measurements were derived from the adaptation of measurement used by previous studies. Specifically, criminal recidivism as used in this study stands for the criminal re-offending of ex-prisoners after their initial release from prison. As such, re-offending; reconviction; and reincarceration was used to measure the construct in line with the studies of Stahler et al., (2013), Meade et al., (2012), Listwan et al., (2010) and Harris et al., (2009).

While construct of personality was measured in this study by adapting the Mini-IPIP Scale of personality which comprised four items each of the Big-Five traits as used by Donnellan et al., (2006). These include extraversion; agreeableness; conscientiousness; neuroticism; and intellect/imagination. The measurement comprised 20 items with alpha value of .91, .81, .82, .87 and .79 respectively.

Findings

Demographic Profile of the Respondents

The demographic variable analysis using simple descriptive statistics of the respondents show that overwhelming majority of the respondents are males (90%) and 10% are females. Majority of the respondents 86.7% are found to be between the ages of 18 and 34 years and only 13.3% are 35 and above years. Also, 76.7% of the respondents are single, whereas 23.4% have married. Educationally, majority 50% are having secondary education, while those that have primary and no formal education are having 23.3% each and only 3.3% are having post secondary education. It was also discovered that 73.3% are unemployed while 26.6% are either self employed or petty traders.

Mediation Analysis

From the analysis obtained using PROCESS out of the five personality facets only two are found to be having significant relation with criminal recidivism among the ex-prisoners (Table 1).

Specifically, agreeable and conscientiousness are the only facets of the personality that are significant while the remaining three are not significantly related to recidivism based on the ex-prisoners prison experiences. Thus, the

mediation analysis was conducted on only the two facets that have significant relationship in line with the suggestions of Baron and Kenny (1986).

Table 1. Mediation Analysis of Conscientiousness

Relationships	f	R ²	β	t	p
X-Y (Prison Experience>Criminal Recidivism)	65.34	0.20	1.12	8.08	0.01
X-M (Prison Experience>Conscientiousness)	0.205	0.21	-0.07	-0.45	0.65
X+M together predicting Y	35.48	0.22	-0.12	-2.16	0.04
C'			1.10	8.08	0.01
Sobel test (normal theory test)			Z=.404	p=.686	K ² =.004

From the test, it is evident that, there is mediation in terms of the relationships (Table 2). This is because the coefficients before the introduction of the mediator is 1.12 but with the introduction of the mediator the beta coefficient changed slightly (β=1.10). Hence, conscientiousness mediates the relationship (partially) between prison experience and

recidivism. Thus, it can be argued that, those ex-prisoners who have lower conscientiousness (who can be easily influenced by others decisions) can become recidivists easily. In other words, this type of personality can enhance or influence an ex-prisoner to easily become recidivist.

Table 2. Mediation Analysis of Agreeableness

Relationships	f	R ²	β	t-value	p-value
X > Y (Prison Experience>Criminal Recidivism)	65.34	0.20	1.12	8.08	0.01
X > M (Prison Experience>Agreeableness)	3.32	0.01	-0.24	-1.82	0.69
X+M together predicting Y	32.834	0.21	-0.04	-0.68	0.50
C'			1.10	7.95	0.01
Sobel test (normal theory test)			Z=.566	p=.571	K ² =.005

The analysis established a mediation relationship among the variables. The X-Y relationship is significant (β= 1.12). With the introduction of the mediator, the results differ slightly (β=1.10).

Also, the C' path proved to be significant (0.01). Thus, Agreeableness mediate the relationship between prison experience and criminal recidivism.

Table 3 . Individual Mediation Effect Size

Mediators	K ²	Effect Size
Conscientiousness	0.004	Small
Agreeableness	0.005	Small

From the Table 3 it can be deduced that all the mediators when taken separately are having small effects. Thus, this effect size of the mediation of the two personality traits shows that, though they mediated the relationship

between the prison experiences of the ex-prisoners and criminal recidivism, but, they only have smaller effect. As such, it can be argued that, their mediation effect of such a relationship is weak.

Discussion and Implication

The result of the mediation analysis of this study shows that the five facets used (FFM) accounted for only two facets as being mediators in relation to prison experience of the ex-prisoners and criminal recidivism. Specifically, agreeableness and conscientiousness proved to have not only a direct relation with criminal recidivism, but also they equally mediate such relationship. The study showed some level of consistency with that of Međedović, et al., (2012) who established that psychopathic tendencies were the best predictor of both types of criminal recidivism in the sample of perpetrators with lower intensity of criminal behaviour. Their analysis also showed that predictive ability was low agreeableness, but again, anti-sociality proved to be a more successful predictor. The present study outcome is basically in line with other empirical studies which show supports and the ability of psychopathy and personality traits to predict criminal behaviour and criminal recidivism (Andrews, Bonta, & Wormith, 2006).

Equally, it can be deduced from the findings that two facets of personality were found to have a relationship with recidivism. This further corroborated the findings of Levine & Jackson (2004), who established that personality dimension represent a reliable predictor of self-assessed delinquency offenders even among the young offenders which also cut across various types of crimes (Gudjonsson, Einarsson, Bragason, & Sigurdson, 2006). Thus, by implication, the outcomes of the present study demonstrated that though the personality traits (agreeableness and conscientiousness) had direct effect relationship, but nevertheless, they did not only have a direct effect but an indirect effect (mediating) as well.

The evidence from the present study is in accordance with the notion of previous findings on the general psychoticism researches which maintained a constant significant relationship between the personality dispositions and psychopathic elements among the individuals and offenders generally. Evidently, findings have it that psychoticism is an especially

successful predictor in young offenders; however, it continues to be related to more severe crimes in adults (Heaven, Newbury, & Wilson, 2004). These findings further suggested that psychoticism is a personality characteristic that exists in offenders who frequently engage in criminal activity and recidivism. Explicit correlations between Psychoticism and recidivism have been established for adolescent violent behaviour (Carrasco, Barker, Tremblay, & Vitaro, 2006), as well as for self-assessed recidivism in various kinds of crimes (van Dam et al., 2005).

Conversely, a research conducted by Dam, Janssens and Bruyn (2005) while examining which personality model between PEN and Big Five predictors of recidivism, their findings revealed that, offenders on PEN's Extraversion and the Big Five dimensions of Agreeableness and Openness are found to be higher in officially recorded recidivist cases when compared to non-recidivists and PEN's Psychoticism, Big Five's Neuroticism and Agreeableness differentiated self-reported recidivists from non-recidivists, whereas only PEN's Psychoticism was found to have predicted severity of self-reported recidivism. Thus, it can be argued that, different facets can account or can predict recidivism among the two different models. But in the present study one, model Five Factor Model or the Big Five Model was used, but it still corroborated some of the findings of the cited two models.

Conclusively, there is clear relationship between individual personality traits and criminal recidivism, especially among the ex-prisoners who have prison experiences. Therefore, it is apt to argue that ex-prisoners who happened to possess agreeableness and conscientiousness personality traits are more prone to continue with their previous criminal act. They thereby become criminal recidivist as a result of their personality predispositions which evidence shows that such personality predisposition enhances their re-offending of their criminal behaviour. As such, these types of ex-prisoners are always on transit of going back to prison custody as criminal recidivists.

Reference

- Ahmed, A.M. (2016). Predictors of Criminal Recidivism: A study of Recidivists in metropolitan Kano, Nigeria. Unpublished PhD thesis submitted to Universiti Utara Malaysia.
- Ahmed, A.M. and Ahmad, A.B. (2015a), "Prison, stigma, discrimination and personality as predictors of criminal recidivism: a preliminary findings", A paper presented at International Conference on Economics and Social Sciences (ICESS-2015), Rainbow Paradise Hotel, Penang, May 16-17.
- Andrews, D.A., & Bonta, J. (1998). *The psychology of criminal conduct* (2nd ed.). Cincinnati, OH: Anderson.
- Andrews, D. A., Bonta, J., & Wormith, J. S. (2006). The recent past and near future of risk and/or need assessment. *Crime and Delinquency*, 52, 7-27.
- Bakker, A. B., Van der Zee, K. I., Lewig, K. A., & Dollard, M. F. (2006). The relationship between the Big Five personality factors and burnout: a study among volunteer counselors. *Journal of Social Psychology*, 146, (1) 31-50.
- Baron, R. M., & Kenny, D. A. (1986). The moderator–mediator variable distinction in social psychological research: conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, 51,(6), 11-73.
- Bierman, K. L. (2003). *Peer rejection: Developmental processes and intervention strategies*. New York: The Guilford Press.
- Bolger, N. (1990). Coping as a personality process: A prospective study. *Journal of Personality and Social Psychology*, 59, 525-537.
- Butler, J. C. (2000). Personality and emotional correlates of right-wing authoritarianism. *Social Behavior and Personality*, 28, 1-14
- Carrasco, M., Barker, E. D., Tremblay, R. E., & Vitaro, F. (2006). Eysenck's personality dimensions as predictors of male adolescent trajectories of physical aggression, theft, and vandalism. *Personality and Individual Differences*, 41, 1309-1320.
- Costa, P.T., & McCrae, R.R. (1992). Revised NEO Personality Inventory (NEO-PI-R) and NEO Five-Factor Inventory (NEO-FFI) manual. Odessa, FL: Psychological Assessment Resources.
- Clower, C. E., & Bothwell, R. K. (2001). An Exploratory study of the relationship between the Big Five and inmate recidivism. *Journal of Research in Personality*, 35, 231-237.
- Digman, J.M. (1990). Personality structure: Emergence of the five-factor model. *Annual Review of Psychology*, 41, 417-440.
- Donnellan, M.B., Oswald, F.L., Baird, B.M. & Lucas, R. E. (2006). The mini-ipp scales: tiny-yet-effective measures of the Big Five Factors of personality. *Psychological Assessment*, 18(2), 192-203.
- Douglas, K. S., Guy, L. S., & Hart, S. D. (2009). Psychosis as a risk factor for violence to others. *Psychological Bulletin*, 135, 679-706.
- Ewen, R. B. (1998). *Personality: A topical approach*. Mahwah, NJ: Erlbaum
- Eysenck, H. (1977). *Crime and personality*. London: Routledge and Paul.
- Fayombo, G. A. (2010). The relationship between personality traits and psychological resilience among the Caribbean adolescents. *International Journal of Psychological Studies*, 2(2), 105-116.
- Fullam, R., & Dolan, M. (2006). The criminal and personality profile of patients with schizophrenia and comorbid psychopathic traits. *Personality and Individual Differences*, 40, 1591-1602.
- Graziano, W.G., & Eisenberg, N. (1997). Agreeableness; A dimension of personality. In R. Hogan, S. Briggs, & J. Johnson, (1997). *Handbook of Personality Psychology*. San Diego, CA: Academic Press.
- Graziano, W. G., Habashi, M. M., Sheese, B. E., & Tobin, R. M. (2007). Agreeableness, empathy, and helping: A person x situation perspective. *Journal of personality and social psychology*, 93(4), 583.
- Goldberg, L. R. (1993). The structure of phenotypic personality traits. *American Psychologist*, 48, 26-34.
- Goleman, D. (1997). *Emotional Intelligence*. New York: Bantam

- Gudjonsson, G. H., Einarsson, E., Bragason, O. O., & Sigurdson, J. F. (2006). Personality predictors of self-reported offending in Icelandic students. *Psychology, Crime & Law*, 12, 383-393.
- Harris, P.W., Lockwood, B. & Mengers, L. (2009) ACJCA white Paper: Defining and Measuring Recidivism. <http://www.cjca.net>. Retrieved January, 9, 2014.
- Hayes, A. F. (2013). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach*. Guilford Press. New York, NY
- Heaven, P.C.L., Newbury, K., & Wilson, W. (2004). The Eysenck psychoticism dimension and delinquent behaviours among non-criminals: changes across the lifespan? *Personality and Individual Differences*, 36, 1817-1825.
- Heide, K. (1982). Classification of offenders ordered to make restitution by interpersonal maturity level and by specific personality dimensions. Unpublished dissertation, State University of New York at Albany, Albany.
- Hettema, J. M., Neale, M. C., Myers, J. M., Prescott, C. A., & Kendler, K. S. (2006). A population-based twin study of the relationship between neuroticism and internalizing disorders. *American journal of Psychiatry*, 163, 857-864.
- Hepner, P. P., Cook, S. W., Wright, D. M., & Johnson, W. C., Jr. (1995). Progress in resolving problems: A problem-focused style of coping. *Journal of Counseling Psychology*, 42, 279-293.
- Jesness, C.F. (1988). The Jesness inventory classification system. *Criminal Justice and Behavior*, 15, 78-91.
- Jesness, C.F. (1983). *The Jesness Inventory* (rev. ed.). Palo Alto: CA: Consulting Psychologists Press.
- John, O.P., & Srivastava, S. (1999). The big five trait taxonomy: History, measurement, and theoretical perspectives. In L.A. Pervin, & O.P. John (Eds.), *Handbook of personality: Theory and research* (pp. 139-153). New York: The Guilford Press.
- John, O. P., Naumann, L. P., & Soto, C. J. (2008). Paradigm shift to the integrative Big-Five trait taxonomy: History, measurement, and conceptual issues. In O. P. John, R. W. Robins, & L. A. Pervin (Eds.), *Handbook of Personality: Theory and Research*, 3rd ed. (pp. 114-158). New York, NY: Guilford Press.
- Jost, J. T. (2006). The end of the end of ideology. *American Psychologist*, 61, 651-670.
- Le Couff, Y., & Toupin J. (2009). Comparing persistent juvenile delinquents and normative peers with the Five-Factor Model of personality. *Journal of Research in Personality*, 43, 1105-1108.
- Levine, S. Z., & Jackson, C. J. (2004). Eysenck's theory of crime revisited: Factors or primary scales? *Legal and Criminological Psychology*, 9, 1-18.
- Listwan, S.J., Piquero, N.L. & Voorlis, P.V. (2010). Recidivism among a white-collar sampled: Does personality matter? *Australia & New Zealand Journal of Criminology*, 43, (1), 156-174.
- Matthews, G., and Deary, I. J. (1998). *Personality traits*. Cambridge, UK: Cambridge University Press.
- McCrae, R. R., & Costa, P. T., Jr. (1986). Personality, coping, and coping effectiveness in an adult sample. *Journal of Personality*, 54, 385-405.
- McCrae, R. R., & John, O. P. (1992). An introduction to the Five-Factor Model and its applications. *Journal of Personality*, 60, 175-215.
- McCrae, R. R., & Costa, P. T. (1992). Discriminant validity of NEO-PIR facet scales. *Educational and Psychological Measurement*, 52(1), 229-237.
- McCrae, R. R. (1996). Social consequences of experiential openness. *Psychological Bulletin*, 120, 323-337.
- Mededović, J., Kujačić, D., & Knežević, G. (2012). Personality-related determinants of criminal recidivism. *Psihologija*, 45(3), 277-294.
- Megargee, E.I. (1994). Using the Megargee MMPI-based Classification with the MMPI-2s of male prison inmates. *Psychological Assessments*, 6, 337-344.
- Megargee, E.I., & Bohn, M. (1979). *Classifying criminal offenders: A new system based on the MMPI*. Beverly Hills, CA: Sage.
- Miller, J.D., & Lynam, D.R. (2001). Structural models of personality and their relation to antisocial behavior: A meta-analytic review. *Criminology*, 39, 765-798.
- Passini, F. T., & Norman, W. T. (1966). A universal conception of personality structure? *Journal of personality and social psychology*, 4(1), 44.

- Penner, L. A., Fritzsche, B. A., Craiger, J. P., & Thurstone, L. L. (1933). The theory of multiple factors. Address of the president before the American Psychological Association, Chicago meeting, The vectors of the mind. First published in *Psychological Review*, 41, 1-32. [Online] Available <http://psychclassics.yorku.ca/Thurstone/> (August 2, 2010).
- Freifeld, T. S. (1995). Measuring the prosocial personality. *Advances in Personality Assessment*, 10, 147-163.
- Quay, H., & Parsons, L. (1972). *The differential behavioral classification of the juvenile offender*. Washington DC: Department of Justice.
- Salgado, F. (1997). The five factor model of personality and job performance in the European community. *Journal of Applied Psychology*, 82, (1), 30-43.
- Savage, J. (2009). Understanding persistent offending: linking developmental psychology with research on the criminal career. In: J. Savage, (ed.), *The Development of Persistent Criminality* (pp. 3-33). Oxford: Oxford University Press.
- Stahler, G.J., Mennis, J., Belenko, S., Welsh, W.N., Hiller, M.L. & Zajack, G. (2013). Predicting recidivism for released state prison offenders: Examining the influence of individuals and neighborhood characteristics and spatial contagion on the likelihood of reincarceration. *Criminal Justice and Behavior*, 40 (6), 690-711.
- Srivastava, S. (2010). Measuring the Big Five Personality Factors. [Online] available <http://www.uoregon.edu/~sanjay/bigfive.html> (July 7, 2010)
- Tellegen, A. (1985). Structures of mood and personality and their relevance to assessing anxiety, with an emphasis on self report. In A.H. Tuma, & J.D. Maser (Eds.), *Anxiety and the anxiety disorders* (pp. 681-706). Hillsdale: Lawrence Erlbaum.
- The OCEAN of Personality synopsis, Chapter 4: Trait Theory. All Psych Online. Last updated March 23, 2004 [Online] available http://allpsych.com/personalitysynopsis/trait_application.html (August 8, 2010).
- Ullrich, S., & Marneros, A. (2006). Dimensions of personality disorders in offenders. *Criminal Behaviour and Mental Health*, 14, 202-213.
- van Dam, C., Janssens, J.M.A.M., & De Bruyn, E.E.J. (2005). PEN, Big Five, juvenile delinquency and criminal recidivism. *Personality and Individual Differences*, 39, 7-19.
- Van Heck, G. L. (1997). Personality and physical health: toward an ecological approach to health-related personality research. *European Journal of Personality*, 11(5), 415-443.
- Van Voorhis, P. (1994). *Psychological classification of the adult male prison inmate*. New York: State of New York Press.
- Warren, M. (1983). Applications of interpersonal maturity theory to offender populations. In W.S. Laufer, & J.M. Day, (Eds.), *Personality theory, moral development, and criminal behavior* (pp. 23-50). Lexington, MA: Lexington Books.
- Zuckerman, M. (1991). *Psychobiology of personality*. New York: Cambridge University Press.