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Development and validation of crime behaviour factor battery

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This research examined the systematic processes utilized in the development and validation of the Crime Behaviour Factor Battery (CBFB) for measuring crime behaviours and factors responsible for such. The intended sample was 900 Nigerian adolescents, youths and adults, popularly believed to be prone to committing crime; but only 548 of them finally participated in the research. Their ages ranged between 16 and 58 with a mean of 30.5. The internal consistency for the sub-scales ranged between 0.1183 and 0.8816. While the Crombach alpha (α) ranged between 0.9079 and 0.9726, the Guttman split half reliability (r) ranged between 0.8068 and 0.9073. The significant inter-factor correlation coefficient is an evidence for the construct validity of the scales. The significance of the inventory to psychologists, counselors and all kinds of researchers were discussed.

Key words: Crime behaviour, battery, reliability, validity, internal consistency.

INTRODUCTION

Crime rate in our society is on the astronomical increase. It occurs in every sector of human endeavour, and is perpetrated by both young and old, male and female, literate and illiterate, religious and atheists, leaders and followers, government and governed as well as members of the law enforcement agents (Animasahun, 2007, 2008; Odesola, 2007; Soniyi, 2007; Ketebe, 2007; Pakes and Pakes, 2009; Aremu, 2011; Babalola, 2011; Olukoya, 2011; Oyebiyi, 2011).

All efforts to combat crime have not really yielded any positive result, possibly because the root of crime has not been properly attended to. For instance, reports worldwide indicates on any given day, there are plenty of crime stories in the news media, and according to Pakes and Pakes (2009), various news reports suggest that the criminal justice system cannot cope. Aremu (2007) reported that rarely does an evening pass in which the locally televised nightly news does not provide coverage of at least one shocking and disturbing act of criminal violence involving juveniles and youths. These facts were earlier established by Elliot (1993), and Snyder and Sickmund (1995), as well as Farrington (1991).

Criminology, the scientific study of criminal and criminal behaviour (Encarta Premium, 2009) attempts to build theories that explain why crimes occur and test those theories by observing behaviour. However, designing psychological instruments to examine the potentiality to crime and reasons for such is scanty. This is the gap this research effort tries to fill.

Psychologists (Lombroso, Sigmund Freud, Brunner, Eysenck, Kohlberg, Dollard, Bandura, to mention a few) established that while some people with certain characteristics are more likely to commit offenses than others based on the Biological theories of crime, genetic factors, neurological abnormalities and psychological theories of crime which include moral development, social learning and personality theories, there are certain specific factors that serve as motivation for people to commit crime, which are grossly social economic factors, such as family background, family disruption, poor parenting, poverty, hunger, deprivation, peer dependence, unfulfilled aspirations, drug addiction, ethnic heterogeneity and urbanization (explicitly or implicitly relying on Shaw and Mckays (1972) social disorganization theory (Becker, 1968; Bailey,1984; Agnew, 1992; Elliot, 1993; Warr, 1993; Fagan, 1995; Hazel, 1998; Corman and Morcan, 2000; Lee, 2000; Animasahun, 2002; Warr, 2002; Gesinde, 2003; Aremu, 2009). Hence, Perkes and Perkes (2009) suggested that identifying such factors and looking at ways of influencing them remains an important area of focus in criminal psychology.

In line with the afore-mentioned, Miller and Lynam (2001) carried out a meta-analytical study in which they reviewed over 20 studies, and were able to identify several traits that were strongly associated with antisocial behavior, among them were: hostility, self-centredness, spitefulness, jealousy, indifference to others, lack of ambition and motivation for noble works, lack of perseverance, having difficulty in controlling their impulses and more likely to hold non-traditional and unconstitutional values and beliefs. Gottfredson and Hirschi (1990) argued that the essential difference between criminals and non-criminals is their degree of self control. All the identified traits earlier on and many more are accommodated in Test I of the Crime Behaviour Factor Battery (CBFB) which focuses on crime behavior ratings.

The motivational factors for committing crime emanate from various theories of crime which include:

1. Biological: Genetic factors and neurotogical abnormallities.
2. Psychological: Moral development, social learning and personality factors.
3. Sociological: Social factors, societal factors, socio-structural factors, ecological or environmental factors, sub-cultural, socio-control factors and macro social factors.
4. Economic: Poverty, unemployment, etc.
5. Behavioural
6. Cognitive
7. Phenomenoligical
8. Humanistic
9. Existential: (Ibudeh, 1990; Lynch, 2007).

All these mentioned and others have been incorporated into the thirteen (13) identified factors responsible for committing crime in the society as contained in the battery. Buttressing this submission, the U.S. Department of Justice (2003) submitted that the primary operational goal of professional policing is reactive crime control which consists of three essential functions:

(a) Assess the nature, extent, and distribution of crime in order to efficiently and effectively allocate resources and deploy personnel.
(b) Identify the crime-suspect correlations to assist investigations.
(c) Identify the conditions that facilitate crime and incivility so that policy makers may make informed decisions about prevention approaches (Reuland, 1997).

To achieve this objective therefore, the Crime Behaviour Factors Battery (CBFB) was developed as an instrument of assessment to perform two major functions:

(1) To identify rate of potentiality for committing crime.
(2) To identify factors responsible for such behaviours, so

that remediative, reformative and rehabilitational programme could be put in place to reduce crime rate in the society.

Therefore, while Test 1 in the battery is crime behaviour rating scale, Test 2 to 14 centre on factors responsible for committing crime; namely: personal factors, social economic, societal, political, as well as factors resident in law enforcement agencies, judiciary, religious factors, peer group, media and career-related factors (Animasahun, 2007).

Hence, the battery, which is a package of 14 (fourteen) different but related tests is a diagnostic instrument which could be used as a research tool as well as clinical and counseling instrument for detection of potentiality for committing crime as well as the motivating factors behind such behaviour so as to initiate remediative, reformative and rehabilitative programmes for the affected individuals.

Rationale for the instrument

The phenomenon of crime is a serious problem in the society which is perpetrated by a larger percentage of the population. It is suffice to say that it has become part of our social life but which is however, classified as antisocial. The generality and intensity of crime is what makes criminal psychology seeks to answer two major questions:

(1) How can psychology further our understanding of crime, its causes, consequences and prevention?
(2) How can psychology help the criminal justice system and other agencies in dealing with crime (Pakes and Pakes, 2009)?

Based on the these pertinent questions and the fact that many lives are nipped in the bud, properties and valuables of life are destroyed, dreams are shattered as a result of crime, something urgent must be done to address the situation. We must no longer wait till crime is committed before we do something. We need to be proactive in our approach to crime rather than reactive or retroactive actions.

Also, one of the major functions of professionally trained counseling psychologists (Guidance Counselors) is to remediate antisocial and criminal tendencies of their clients in both secondary and tertiary institutions. However, they only work on people that have been involved in certain kinds of antisocial or criminal behaviours which is significantly retro-active efforts. The main reason for this is because there is dearth of measuring instruments to detect criminal potentials or intent earlier. It is strongly believed that if there is an instrument to discover these negative behaviours earlier, necessary remediative and reformative programmes would be put in place to forestall such behaviours.

The idea of this instrument emanated from the

researchers experience during his PhD research over inmates in Nigeria prisons as well as his experience in teaching and research in Remedial, Reformatory and Rehabilitational Counseling Psychology at the post graduate levels at the University of Ibadan.

The Crime Behaviour Factor Battery is therefore developed to detect early the level of criminal intent of an individual and also find out possible factors responsible for such behaviour so as to quickly put in place remediative programmes. This will go a long way in reducing crime rate in the society.

MATERIALS AND METHODS

Item development

The Crime Behaviour Factor Battery was developed based on specific crime characteristics and major factors prompting crime intent gathered from literature (Lombroso, 1968; Dobinson and Ward, 1985; Wislon and Hermstein, 1985; Gottfredson and Hirsch, 1990; Ibudeh, 1990; Farrington, 1991; Elliot, 1993; Fagan, 1995; Jensen and Rojek, 1998; Primentel, 2000; Ross, 2000; Corman and Mocan, 2000; Curran and Claire, 2001; Medahunsi, 2001; Weatheburn, 2001; Robinso, 2002; Anderson and Bushman, 2002; Johnson et al., 2002; Rhee and Waldman, 2002; Warr, 2002; U.S. Department of Justice, 2003; Ross, 2003; Aimasahun, 2007; Pakes and Pakes, 2009; Saka, 2010). Several factors were gathered but only fourteen (14) were found to be very strong and most relevant. Some of the other factors not listed in the instrument because of their insignificant contributions to crime factors include: cultural, perceptual, psychological, cognitive, phenomenological, humanistic and existential.

Relevance of each variable to crime factors

Crime behaviour rating scale

This is the scale containing specific crime behaviours and characteristics that can easily predispose an individual to commit crime as gathered from literature (Lombroso,1968; Gibbons, 1979; Dobinson and Ward, 1985; Vold and Bernard, 1986; Gottfredson and Hirsch, 1990; Adler, Freda and Willian, 1993; Lester, 1993; Maguire and Pastore, 1994; Snyder and Sickmund, 1995; Reulah, 1997; Medahwasi, 2001; Animasahun, 2002; Johnson et al., 2002; Warr, 2002; U.S. Department of Justice, 2003; Agboola, 2009; Aremu, 2009; Curran and Claire, 2001; Lynch, 2009; Pakes and Pakes, 2009; Saka, 2010).

Personal factor

This refers to individual's endowment, exposure, habit, mannerism and experiences that predispose him to commit crime (Cohen, 1955; Louise and Ellen, 1978; Dobinso and Ward, 1985; Wilson and Hermstein, 1985; Ibudeh, 1990; Fagan, 1995; Jensen and Rojek, 1998; Corman and Mocan, 2000; Sampson and Laub, 2003; Miller and Lynam, 2007).

Family/Parental factor

This refers to certain factors traceable to one's parents, heredity,

parenting style, parental status, parental relationship and situational factors affecting an individual growth and development that can influence an individual to commit crime (Lombroso, 1968; Loeber and Stouthamer-Loeber, 1986; Ibudeh, 1990; Warr, 1993; Fagan, 1995; Medahunsi, 2001; Warr, 2002; Rhee and Waldman, 2002; Gesinde, 2003; Morley and Hall, 2003).

School based factor

This refers to learning deficiencies, negative attitude towards teaching and learning, as well as certain school factors that affect learning and which can influence a student to commit crime (Cohen, 1955; Farrington, 1991; Elliot, 1993; Snyder and Sigmund, 1995; Jensen and Rojek, 1998; Curran and Claire, 2001; Animasahun, 2002; Warr, 2002; Gesinde, 2003).

Social factor

This is based on the social learning model of the behaviourists that all behaviours are learnt, be it positive or negative. This factor therefore refers to the environmental issues and experiences that predispose an individual to commit crime (Dobins and Ward, 1985; Ibudeh, 1990; Agnew, 1992; Richters, 1993; Medahunsi, 2001; Weatheburn, 2001; Rhee and Waldman, 2002).

Economic factor

This refers to various kinds of financial hardships, handicaps, problems, and the associated consequences that can influence an individual to commit crime (Becker, 1968; Vold and Bernard, 1986; Ibudeh, 1990; Agnew, 1992; Fagan, 1995; Medahunsi, 2001; Weatheburn, 2001).

Societal factor

This refers to the belief system, attitude and behavior of a group of people to which an individual belongs which is unjustifiably negative and can therefore predispose an individual to commit crime (Ibudeh, 1990; Agnew, 1992; Hazel, 1998; Richters, 1993; Medahunsi, 2001; Rhee and Waldman, 2002; Warr, 2002; Aremu, 2009).

Political factor

This refers to anomalies traceable to the government, people in power as well as the political class, which can induce an individual to be involved in certain criminal activities (Farrington, 1991; Elliot, 1993; Primentel, 2000; Ross, 2000; Warr, 2002; Ross, 2003).

Factors resident in law enforcement agencies

These are certain misbehaviours practically evident in the lives of security agents which consequently provoke some individuals to perpetrate criminal activities or inculcate criminal intentions (Igbinovia, 1985; Richters, 1993; Campbell, 1998; Human Rights Watch, 1998; Fisher, 1999; Robinso, 2002; Warr, 2002; Tella and Schagrodsky, 2004; Shi, 2005; Aremu, 2009).

Factors resident in the judiciary

The judiciary interprets the law, and is regarded to be the last hope

of the masses. However, it is unfortunate that certain illegal and oppressive activities are perpetrated by its members. These indirectly predispose an individual to commit crime or strengthen the intensity of criminal activities of some individuals (Adler, Freda and Williams, 1993; Fagan, 1995; Weatheburn, 2001; Robinso, 2002; Warr, 2002).

Religious factor

This refers to the roles and activities of religious leaders and people whereby they hide under the name of God to perpetrate their illicit activities encourage criminals and even mislead many other individuals to be involved in crime (Hazel, 1998; Curran and Claire, 2001; Warr, 2002; Animasahun, 2007; Agboola, 2009; Lynch, 2009; Saka, 2010).

Peer group factor

This refers to the power of influence the age group members exert on an individual, through which the individual learns certain misbehaviours which influence the individual to commit crime (Warr, 1993; Fagan, 1995; Snyder and Sickmund, 1995; Jensen and Rojek, 1998; Warr, 2002).

Media factor

This refers to certain antisocial behaviours learnt from watching television, films cable networks, recorded tapes and CD, or from hearing certain influencing slogans, music and messages on the radio which has powerful influence on an individual to practice such behaviours which may eventually become an habit and predispose an individual to commit crime (Centerwall, 1993; Fagan, 1995; Rojek, 1998; Medahunsi, 2001; Weatheburn, 2001; Anderson and Bushman, 2002; Animasahun, 2002, 2007).

Career related factor

This refers to situations whereby people find themselves in accidental careers, made a wrong career choice or totally disappointed with the condition of service at their work place, and consequently bedeviled with unfulfilling aspirations, many times struggle to make both ends meet, and often caught in the web of crime (Dobinso and Ward, 1995; Lester, 1993; Weatheburn 2001; Johnson et al., 2002; Animasahun, 2002; 2007; Agboola 2009; Aremu, 2009; Saka, 2010).

Items between 7 and 41 were generated on each of the fourteen scales. A total of 378 items were gathered. These were administered on 2,000 inmates in Nigeria prisons; 1,000 students each from Nigerian Universities, Polytechnics and Colleges of Education; 250 okada riders; 250 members of National Union of Road Transport Workers (NURTW); 250 Liquor sellers; and 250 civil servants, since civil servants are prominent members of the society, and who also feature prominently in crime incidences for example, bribery and corruption, forgery, stealing of office equipments, assault, use of charms etc. Therefore a total of 6,000 Nigeria populace who are popularly believed to have a link with crime in the society, were randomly selected in each group on simple, cluster, purposive and convenience random sampling techniques. The reliability coefficient realized from the analysis of the results obtained from the administration, using Guttmann split-half reliability, was 0.678.

The result proved a kind of reliability but test experts advocated for certain other steps to authenticate each items in the package. The items were therefore subjected to a process of discrimination index through a careful inter-item analysis. The participants were divided into 2 halves based on their responses to each of the items. Through this, 36 discriminating items (D = 36) were discovered and eliminated. The remaining 342 items were further scrutinized, reconstructed or deleted, which finally produced 337 items that made the final production. These were finally tested on 900 randomly selected Nigerians from the aforementioned groups across the Federation, using a simple, cluster, purposive and convenience random sampling technique. Ages of the participants ranged from 16 to 58 with a mean of 30.5.

The Prison formation in Nigeria which is grouped into nine (9) zones (A- H and Federal Capital Territory (FCT) was used as criteria for the random selection of the participants in the study. The zones are displayed in Table 1.

One hundred (100) participants involving each of the targeted group were randomly selected from each zone. The breakdown is catalogued in Table 2.

From Table 2, it is clearly revealed that out of the 900 questionnaires, only 548 were returned and duly completed which surmounted to 61% of the desired sample. This was taken to be a fair representation. It was made up of 332 Males (60.6%) and 216 Females (39.4%). The analysis using Guttman Split half reliability yielded a coefficient of 0.795, which was considered to be a good one, and therefore constituted the final form of the inventory.

Description of the scales in the Inventory

The Crime Behaviour Factor Battery (CBFB) is made up of fourteen (14) subscales, while scale I is the Clime Behaviour Rating Scale, scales 2 to 14 continue the factors responsible for crime incidence. A brief explanation of the scales is contained in Table 3.

The items in each of the scales are scored on 5-point Likert format, which ranged from 1 (Strongly Disagree) to 5 (Strongly Agree).

RESULTS

The analysis for the validation of the instrument was carried out through the computer using SPSS package. The Crombach alpha (α), Spearman Brown and Guttman split half reliability (r) statistical tools were employed for measuring the coefficient values of the items. The internal consistency reliability values were equally determined. These results are presented in Tables 4 to 17.

DISCUSSION

The results displayed in the Tables 4 to 17 clearly show that the Crime Behaviour Factor Battery (CBFB) is a multidimensional measure of crime behaviours and possible factors prompting such in the society, which has been found to be reliable and valid. All the items in each test loaded saliently, i.e. they have positive significant contributions and correlate significantly with the domain in each section as established in the results of Cronbach alpha values. Also, all the items had significant inter-item correlation coefficient as evident in Tables 4 to 17. This is a demonstration of high internal consistency among the items and the subscales.

Table 1. Prison formation in Nigeria.

Zone	States
Zone A	Lagos and Ogun States
Zone B	Kaduna, Katsina, Jigawa and Kano States
Zone C	Bauchi, Gombe, Adamawa, Borno and Yobe States
Zone D	Niger, Kwara, Kebbi, Zamfara and Sokoto States
Zone E	Imo, Abia, Akwa Ibom, Cross River, Rivers and Bayelsa States
Zone F	Oyo, Osun, Ondo and Ekiti States
Zone G	Edo, Anambra, Delta, Ebonyi and Enugu States
Zone H	Benue, Kogi, Taraba, Plateau and Nasarawa States
Federal Capital Territory: Abuja	

Source: Nigeria Prison Service.

Table 2. Catalogue of participants across the federation.

S/N	Zone	Prison inmates	Students in higher institutions	Okada riders	NURTW members	Liquor sellers	Civil servant	Total	No. submitted
1	A	20	20	15	15	15	15	100	68
2	B	20	20	15	15	15	15	100	57
3	C	20	20	15	15	15	15	100	60
4	D	20	20	15	15	15	15	100	56
5	E	20	20	15	15	15	15	100	53
6	F	20	20	15	15	15	15	100	85
7	G	20	20	15	15	15	15	100	60
8	H	20	20	15	15	15	15	100	52
9	FCT	20	20	15	15	15	15	100	57
TOTAL		180	180	135	135	135	135	900	548
Gender Specification		M=110 F=70	M=90 F=90	M=135 F=Nil	M=135 F=Nil	M=Nil F=135	M=80 F=55	M=550 F=350	M=332 F=216

Table 3. Description of the scales in the inventory.

Test	Title	No of Items	Example of items
1.	Crime behaviour rating scale	33	-My behaviors often go contrary to acceptable norms. -I have sometimes been arrested for a crime
2.	Personal factors	38	-Lack of self control -Smoking marijuana
3.	Family/Parental factors	38	-Born by indiscipline parents -Brought up by non-challant and care free parents
4.	School based factors	30	-Engaging in recreational activities during school hours -Taught by highly indiciplined teachers
5.	Social factors	22	-Living with siblings with criminal records -Living in slums and ghettos
6.	Economic factors	16	Poverty and inability to provide basic needs for family High rate of unemployment
7.	Societal factors	31	-Respect for superficial wealth irrespective of source -Inadequate reward for hardwork, honesty and integrity

Table 3. Contd.

8.	Political factors	41	-Presence of people with high track record of deviant behaviours in power -Government officials sponsor many cases of murder in this country
9.	Factor resident in the law enforcement agencies	24	-Bribery and corruption has eaten deep into the fabrics of our law enforcement agents. -Harassment has taken the place of protection by our law enforcement agents
10.	Factor resident in the judiciary	15	-Appointment of judges has political undertone. -High rate of bribery and corruption is the order of the day in our judicial system.
11.	Religious factors	15	The fear of God has become a thing of the past. Religious leaders aid and abet crime for money and fame.
12.	Peer group factors	7	Association with peers known for criminal records and deviant behaviours. Associating with peers who smoke, drink alcohol or use drugs .
13.	Media factors	7	-Observation of crime related films teach advanced techniques in crime. -Youths learn bad dressing and all sorts of crime from internet
14.	Career related factors	20	-A wrong choice of career can influence an individual into crime. -Being unemploy able for lack of necessary skills predisposes one to commit crime

Table 4. Internal consistency value of crime behaviour rating scale.

Item	Inter-item correlation coefficient	RI (T − 1)
1	0.5812	$p < 0.05$
2	0.5902	$p < 0.05$
3	0.6616	$p < 0.05$
4	0.7100	$p < 0.05$
5	0.5612	$p < 0.05$
6	0.6602	$p < 0.05$
7	0.8009	$p < 0.05$
8	0.5611	$p < 0.05$
9	0.6263	$p < 0.05$
10	0.6201	$p < 0.05$
11	0.5886	$p < 0.05$
12	0.7412	$p < 0.05$
13	0.6713	$p < 0.05$
14	0.8816	$p < 0.05$
15	0.6802	$p < 0.05$
16	0.6714	$p < 0.05$
17	0.7116	$p < 0.05$
18	0.6768	$p < 0.05$
19	0.6333	$p < 0.05$
20	0.6387	$p < 0.05$

Table 4. Contd.

21	0.5711	$p < 0.05$
22	0.5804	$p < 0.05$
23	0.8801	$p < 0.05$
24	0.6446	$p < 0.05$
25	0.6404	$p < 0.05$
26	0.5661	$p < 0.05$
27	0.6209	$p < 0.05$
28	0.6919	$p < 0.05$
29	0.5996	$p < 0.05$
30	0.7899	$p < 0.05$
31	0.6074	$p < 0.05$
32	0.7946	$p < 0.05$
33	0.6444	$p < 0.05$

Correlation between forms   = 0.76; equal length Spearman Brown = 0.83; Unequal Length Spearman Brown = 0.84; Guttman split half = 0.88; Crombach alpha = 0.94; alpha for part I = 0.91; alpha for part II = 0.89; inter item correlation ranged from   0.5611 to 0.8816; convergent validity = 0.86; discriminant validity = 0.016; intra class coefficient = 0.92; norm = 63.

Table 5. Internal consistency values of personal factors.

Item	Inter-item correlation coefficient	RI (T – 1)
1	0.4207	$p < 0.05$
2	0.5314	$p < 0.05$
3	0.5004	$p < 0.05$
4	0.5408	$p < 0.05$
5	0.6194	$p < 0.05$
6	0.6231	$p < 0.05$
7	0.6328	$p < 0.05$
8	0.5057	$p < 0.05$
9	0.5897	$p < 0.05$
10	0.6329	$p < 0.05$
11	0.6575	$p < 0.05$
12	0.6258	$p < 0.05$
13	0.6465	$p < 0.05$
14	0.6009	$p < 0.05$
15	0.6430	$p < 0.05$
16	0.6354	$p < 0.05$
17	0.5794	$p < 0.05$
18	0.6387	$p < 0.05$
19	0.6545	$p < 0.05$
20	0.6195	$p < 0.05$
21	0.6795	$p < 0.05$
22	0.6522	$p < 0.05$
23	0.6628	$p < 0.05$
24	0.6820	$p < 0.05$
25	0.6754	$p < 0.05$
26	0.6880	$p < 0.05$
27	0.7014	$p < 0.05$
28	0.7120	$p < 0.05$
29	0.6996	$p < 0.05$
30	0.7108	$p < 0.05$

Table 5. Contd.

31	0.6871	$p < 0.05$
32	0.6669	$p < 0.05$
33	0.6424	$p < 0.05$
34	0.6332	$p < 0.05$
35	0.6803	$p < 0.05$
36	0.7038	$p < 0.05$
37	0.6842	$p < 0.05$
38	0.6559	$p < 0.05$

Correlation between forms = 0.7135; equal length Spearman Brown = 0.8328; unequal length Spearman Brown = 0.8328; Guttman split half = 0.8301; Crombach alpha = 0.9599; inter item correlation ranged from 0 .4207 to 0.7108.

Table 6. Internal consistency values of family/ parental factors.

Item	Inter-item correlation coefficient	RI (T – 1)
1	0.4201	$p < 0.05$
2	0.6274	$p < 0.05$
3	0.6358	$p < 0.05$
4	0.6443	$p < 0.05$
5	0.6361	$p < 0.05$
6	0.3226	$p < 0.05$
7	0.1183	$p < 0.05$
8	0.3233	$p < 0.05$
9	0.4522	$p < 0.05$
10	0.5586	$p < 0.05$
11	0.6103	$p < 0.05$
12	0.6054	$p < 0.05$
13	0.6858	$p < 0.05$
14	0.6730	$p < 0.05$
15	0.6934	$p < 0.05$
16	0.6646	$p < 0.05$
17	0.6648	$p < 0.05$
18	0.6604	$p < 0.05$
19	0.6106	$p < 0.05$
20	0.4892	$p < 0.05$
21	0.5354	$p < 0.05$
22	0.4900	$p < 0.05$
23	0.5514	$p < 0.05$
24	0.6418	$p < 0.05$
25	0.6581	$p < 0.05$
26	0.6714	$p < 0.05$
27	0.6573	$p < 0.05$
28	0.6391	$p < 0.05$
29	0.6531	$p < 0.05$
30	0.6959	$p < 0.05$
31	0.6896	$p < 0.05$
32	0.6705	$p < 0.05$
33	0.7283	$p < 0.05$
34	0.6789	$p < 0.05$
35	0.6903	$p < 0.05$
36	0.6582	$p < 0.05$

Table 6. Contd.

37	0.6121	p < 0.05
38	0.6018	p < 0.05

Correlation between forms = 0.7034; equal length Spearman Brown = 0.8258; unequal length Spearman Brown = 0.8258; Guttman split half = 0.8231; Crombach alpha = 0.9503; inter item correlation ranged from   0.1183 to 0.7283.

Table 7. Internal consistency values of school-based factors.

Item	Inter-Item correlation coefficient	RI (T − 1)
1	0.6831	p < 0.05
2	0.7151	p < 0.05
3	0.6993	p < 0.05
4	0.6267	p < 0.05
5	0.6761	p < 0.05
6	0.7045	p < 0.05
7	0.6499	p < 0.05
8	0.6699	p < 0.05
9	0.6103	p < 0.05
10	0.6594	p < 0.05
11	0.6528	p < 0.05
12	0.5894	p < 0.05
13	0.6722	p < 0.05
14	0.7319	p < 0.05
15	0.6982	p < 0.05
16	0.7017	p < 0.05
17	0.7078	p < 0.05
18	0.6431	p < 0.05
19	0.6848	p < 0.05
20	0.5571	p < 0.05
21	0.4471	p < 0.05
22	0.4614	p < 0.05
23	0.5365	p < 0.05
24	0.5721	p < 0.05
25	0.6045	p < 0.05
26	0.6267	p < 0.05
27	0.6852	p < 0.05
28	0.7035	p < 0.05
29	0.6349	p < 0.05
30	0.6889	p < 0.05

Correlation between forms =   0.7338; equal length Spearman Brown = 0.8465; unequal length Spearman Brown = 0.8465; Guttman split half = 0.8449; Crombach alpha = 0.9512; inter item correlation ranged from   0 .4471 to 0.9312.

Furthermore, the coefficient analyses using Guttman split half demonstrated that all the scales were reliable. The coefficient alpha values are: r = 0.8842; 0.8301; 0.8231. 0.8449; 0.8803; 0.8678; 0.8433; 0.9073; 0.8677; 0.8495; 0.8504; 0.8068; 0.8430; and 0.8542 respectively. This result is a strong indicator of the reliability of the inventory. Finally, the Crombach alpha values for the tests clearly proved the extent of the scientific and skillful development processes to which the inventory was subjected, which resulted in a high reliability of the inventory. The value are: α = 0.9431; 0.9599; 0.9503; 0.9512; 0.9523; 0.9406; 0.9628; 0.9726; 0.9544; 0.9354; 0.9304; 0.9079; 0.9152; and 0.9482 respectively.

It should be noted that only TEST 1 has a norm, which

Table 8. Internal consistency values of social factors.

Item	Inter-Item correlation coefficient	RI (T − 1)
1	0.6901	$p < 0.05$
2	0.7422	$p < 0.05$
3	0.7192	$p < 0.05$
4	0.6905	$p < 0.05$
5	0.6486	$p < 0.05$
6	0.7086	$p < 0.05$
7	0.7220	$p < 0.05$
8	0.7518	$p < 0.05$
9	0.7339	$p < 0.05$
10	0.7808	$p < 0.05$
11	0.7895	$p < 0.05$
12	0.7038	$p < 0.05$
13	0.6929	$p < 0.05$
14	0.6387	$p < 0.05$
15	0.7382	$p < 0.05$
16	0.6829	$p < 0.05$
17	0.7166	$p < 0.05$
18	0.6100	$p < 0.05$
19	0.7205	$p < 0.05$
20	0.7227	$p < 0.05$
21	0.6804	$p < 0.05$
22	0.6795	$p < 0.05$

Correlation between forms = 0.7878; equal length Spearman Brown = 0.8813; unequal length Spearman Brown = 0.8813; Guttman split half = 0.8803; Crombach alpha = 0.9523; Inter item correlation ranged from 0.6100 to 0.7895.

Table 9. Internal consistency values of economic factors.

Item	Inter-item correlation coefficient	RI (T − 1)
1	0.7250	$p < 0.05$
2	0.7350	$p < 0.05$
3	0.7039	$p < 0.05$
4	0.7030	$p < 0.05$
5	0.6991	$p < 0.05$
6	0.6516	$p < 0.05$
7	0.7557	$p < 0.05$
8	0.7997	$p < 0.05$
9	0.7809	$p < 0.05$
10	0.7273	$p < 0.05$
11	0.7558	$p < 0.05$
12	0.7109	$p < 0.05$
13	0.7275	$p < 0.05$
14	0.7363	$p < 0.05$
15	0.7490	$p < 0.05$
16	0.6837	$p < 0.05$

Correlation between forms = 0.7766; equal length Spearman Brown = 0.8679; unequal length Spearman Brown = 0.8679; Guttman split half = 0.8678; Crombach alpha = 0.9406; Inter item correlation ranged from 0.6516 to 0.7997.

Table 10. Internal consistency values of societal factors.

Item	Inter-item correlation coefficient	RI (T – 1)
1	0.6857	p < 0.05
2	0.7459	p < 0.05
3	0.7240	p < 0.05
4	0.6576	p < 0.05
5	0.7067	p < 0.05
6	0.7808	p < 0.05
7	0.7634	p < 0.05
8	0.7356	p < 0.05
9	0.7137	p < 0.05
10	0.7097	p < 0.05
11	0.7136	p < 0.05
12	0.7448	p < 0.05
13	0.7455	p < 0.05
14	0.7060	p < 0.05
15	0.7230	p < 0.05
16	0.7578	p < 0.05
17	0.7360	p < 0.05
18	0.5514	p < 0.05
19	0.7221	p < 0.05
20	0.6978	p < 0.05
21	0.6261	p < 0.05
22	0.6123	p < 0.05
23	0.6478	p < 0.05
24	0.5706	p < 0.05
25	0.6079	p < 0.05
26	0.5608	p < 0.05
27	0.6156	p < 0.05
28	0.7044	p < 0.05
29	0.7372	p < 0.05
30	0.6830	p < 0.05
31	0.6245	p < 0.05

Correlation between forms = 0.7414; equal length Spearman Brown = 0.8515; unequal length Spearman Brown = 0.8516; Guttman split half = 0.8433; Crombach alpha = 0.9628; inter item correlation ranged from 0.5514 to 0.7808.

is 63. This means that scores below 63 indicate low crime behaviour intent while scores above 63 are indications of strong possession of crime behaviours. However, for categorization sake, scores between 0 and 50 indicate low crime intent; scores between 51 and 70 indicate moderate crime intent, while scores from 71 and above indicate high crime intent.

These results further buttress the earlier findings of great scholars and researchers in the field of criminology and criminal psychology such as Lombroso (1968); Shaw and McKays (1972); Gibbons (1979); Dobinso and War, (1985); Vold and Bernard (1986); Gottfredson and Hirsch (199)0; Ibudeh (1990); Farrington (1991); Elliot (19930; Lester (19930; Fagan (1995); Snyder and Sickmund (1995); Reulah (1997); Corman and Mocan (2000); Weatheburn (2001); Johnson et al. (2002); U.S. Department of Justice (2003); Ross (2003); Aremu, (2009) and Pakes and Pakes (2009), to mention a few; who had all established certain characteristics of a criminal as well as certain factors facilitating such behaviours. However, while many of these authors focused on specific factors, the present study embraces multiple factors responsible for crime incidences.

With all these clear evidences, therefore, Crime Behaviour Factor Battery (CBFB) is both valid and reliable. The results of the inter-item analysis in each section is a proof of high internal consistency which is a sufficient ground for construct validity because the item measured what they are designed to measure (crime behaviors and factors). Also, the specification and

Table 11. Internal consistency values of political factors.

Item	Inter-item correlation coefficient	RI (T − 1)
1	0.6770	$p < 0.05$
2	0.5929	$p < 0.05$
3	0.7186	$p < 0.05$
4	0.7194	$p < 0.05$
5	0.7041	$p < 0.05$
6	0.6947	$p < 0.05$
7	0.7116	$p < 0.05$
8	0.6820	$p < 0.05$
9	0.7325	$p < 0.05$
10	0.6186	$p < 0.05$
11	0.6491	$p < 0.05$
12	0.5742	$p < 0.05$
13	0.7656	$p < 0.05$
14	0.7096	$p < 0.05$
15	0.7741	$p < 0.05$
16	0.6174	$p < 0.05$
17	0.7804	$p < 0.05$
18	0.6593	$p < 0.05$
19	0.6927	$p < 0.05$
20	0.7429	$p < 0.05$
21	0.7189	$p < 0.05$
22	0.7449	$p < 0.05$
23	0.7128	$p < 0.05$
24	0.6975	$p < 0.05$
25	0.7640	$p < 0.05$
26	0.7293	$p < 0.05$
27	0.7190	$p < 0.05$
28	0.6882	$p < 0.05$
29	0.7243	$p < 0.05$
30	0.6994	$p < 0.05$
31	0.7172	$p < 0.05$
32	0.7390	$p < 0.05$
33	0.7296	$p < 0.05$
34	0.6770	$p < 0.05$
35	0.7197	$p < 0.05$
36	0.6642	$p < 0.05$
37	0.6945	$p < 0.05$
38	0.5914	$p < 0.05$
39	0.5718	$p < 0.05$
40	0.5711	$p < 0.05$
41	0.6706	$p < 0.05$

Correlation between forms = 0.8311; equal length Spearman Brown = 0.9077; unequal length Spearman Brown = 0.9078; Guttman split half = 0.9073; Crombach alpha = 0.9726; inter item correlation ranged from 0.5711 to 0.7804.

definitions of domains of crime behaviours provide evidence that the instrument has content validity; and finally, the high Crombach alpha as well as the Guttman split half reliability are sufficient grounds to establish the reliability of the instrument.

Possible application of the CBFB

The Crime Behaviour Factor Battery (CBFB) is an instrument that has both counseling and research uses. It can provide necessary information needed for counseling

Table 12. Internal consistency values of factors resident in the law enforcement agencies.

Item	Inter-item correlation coefficient	RI (T − 1)
1	0.7057	$p < 0.05$
2	0.7657	$p < 0.05$
3	0.7675	$p < 0.05$
4	0.7552	$p < 0.05$
5	0.6924	$p < 0.05$
6	0.6836	$p < 0.05$
7	0.7124	$p < 0.05$
8	0.7232	$p < 0.05$
9	0.5923	$p < 0.05$
10	0.7100	$p < 0.05$
11	0.7184	$p < 0.05$
12	0.7474	$p < 0.05$
13	0.6122	$p < 0.05$
14	0.6834	$p < 0.05$
15	0.7101	$p < 0.05$
16	0.6422	$p < 0.05$
17	0.6520	$p < 0.05$
18	0.6459	$p < 0.05$
19	0.6963	$p < 0.05$
20	0.7824	$p < 0.05$
21	0.7052	$p < 0.05$
22	0.7160	$p < 0.05$
23	0.7490	$p < 0.05$
24	0.6232	$p < 0.05$

Correlation between forms = 0.7676; equal length Spearman Brown = 0.8685; unequal length Spearman Brown = 0.8685; Guttman split half = 0.8677; Crombach alpha = 0.9544; inter item correlation ranged from 0.5923 to 0.7824.

Table 13. Internal consistency values of factors resident in the judiciary.

Item	Inter-item correlation coefficient	RI (T − 1)
1	0.6788	$p < 0.05$
2	0.7480	$p < 0.05$
3	0.7611	$p < 0.05$
4	0.7500	$p < 0.05$
5	0.7026	$p < 0.05$
6	0.7518	$p < 0.05$
7	0.7062	$p < 0.05$
8	0.7718	$p < 0.05$
9	0.7437	$p < 0.05$
10	0.7538	$p < 0.05$
11	0.7381	$p < 0.05$
12	0.6880	$p < 0.05$
13	0.6871	$p < 0.05$
14	0.7258	$p < 0.05$
15	0.6802	$p < 0.05$

Correlation between forms = 0.7452; equal length Spearman Brown = 0.8540; unequal length Spearman Brown = 0.8545; Guttman split half = 0.8495; Crombach alpha = 0.9354; inter item correlation ranged from 0.6788 to 0.7718.

Table 14. Internal consistency values of religious factors.

Item	Inter-item correlation coefficient	RI (T – 1)
1	0.6365	$p < 0.05$
2	0.6970	$p < 0.05$
3	0.7716	$p < 0.05$
4	0.7767	$p < 0.05$
5	0.7977	$p < 0.05$
6	0.7302	$p < 0.05$
7	0.6893	$p < 0.05$
8	0.7648	$p < 0.05$
9	0.7778	$p < 0.05$
10	0.6438	$p < 0.05$
11	0.6568	$p < 0.05$
12	0.6811	$p < 0.05$
13	0.6595	$p < 0.05$
14	0.6949	$p < 0.05$
15	0.7108	$p < 0.05$

Correlation between forms = 0.7515; equal length Spearman Brown = 0.8581; unequal length Spearman Brown = 0.8586; Guttman split half = 0.8504; Crombach alpha = 0.9304; inter item correlation ranged from 0.6365 to 0.7977.

Table 15. Internal consistency values of peer factors.

Item	Inter-item correlation coefficient	RI (T – 1)
1	0.7931	$p < 0.05$
2	0.8161	$p < 0.05$
3	0.8403	$p < 0.05$
4	0.8278	$p < 0.05$
5	0.7837	$p < 0.05$
6	0.7935	$p < 0.05$
7	0.7728	$p < 0.05$

Correlation between forms = 0.7010; equal length Spearman Brown = 0.8242; unequal length Spearman Brown = 0.8268; Guttman split half = 0.8068; Crombach alpha = 0.9079; inter item correlation ranged from 0.7728 to 0.8403.

Table 16. Internal consistency values of media factors.

Item	Inter-item correlation coefficient	RI (T – 1)
1	0.8190	$p < 0.05$
2	0.8237	$p < 0.05$
3	0.8555	$p < 0.05$
4	0.8164	$p < 0.05$
5	0.8529	$p < 0.05$
6	0.7954	$p < 0.05$
7	0.7431	$p < 0.05$

Correlation between forms = 0.7556; equal length Spearman Brown = 0.8608; unequal length Spearman Brown = 0.8629; Guttman split half = 0.8430; Crombach alpha = 0.9152; inter item correlation ranged from 0.7431 to 0.8555.

psychologists to assist their clients to know their level of crime intention and possible factors influencing such behaviours so as to initiate a remediative measure, which can lead to prevention; because, really, prevention is

Table 17. Internal consistency values of career related factors.

Item	Inter-item correlation coefficient	RI (T − 1)
1	0.6937	$p < 0.05$
2	0.6995	$p < 0.05$
3	0.7223	$p < 0.05$
4	0.6823	$p < 0.05$
5	0.7310	$p < 0.05$
6	0.7249	$p < 0.05$
7	0.6966	$p < 0.05$
8	0.7383	$p < 0.05$
9	0.7178	$p < 0.05$
10	0.7042	$p < 0.05$
11	0.7250	$p < 0.05$
12	0.7365	$p < 0.05$
13	0.7267	$p < 0.05$
14	0.6939	$p < 0.05$
15	0.7085	$p < 0.05$
16	0.7265	$p < 0.05$
17	0.7417	$p < 0.05$
18	0.6877	$p < 0.05$
19	0.6818	$p < 0.05$
20	0.6809	$p < 0.05$

Correlation between forms = 0.7456; equal length Spearman Brown = 0.8542; unequal length Spearman Brown = 0.8542; Guttman split half = 0.8542; Crombach alpha = 0.9482; inter item correlation ranged from 0.6809 to 0.7417.

better than cure. Also, researchers at any level of education would find the instrument useful in their research activities. It is strongly believed that through results obtained by such researchers, recommendations and actions taken, crime rate in our society will be drastically reduced. The instrument can also be found useful by other nations of the world who are seriously looking for a way of reducing crime rate in their countries.

Limitation

The major limitation of the instrument is that it could not exhaust all kinds of anti-social and criminal behaviours in existence. It is therefore suggested that other researchers can bring these out and work on them, so that all hands would be on deck to reduce crime in the world. Other limitations include non-use of more sophisticated statistical package like SEM. Future researchers should take note of this.

Conclusion

Based on all the evidences provided in this paper, the Crime Behaviour Factor Battery (CBFB) could be said to be a valid and reliable instrument to measure crime behavior and possible factors enhancing them.

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