

## **Construct Validity and Dimensionality of Levenson's Self-Report Psychopathy Scale (LSRPS) in a Sample of Adult Incarcerated Offenders in KPK Pakistan**

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The present study investigates the construct validity and dimensionality of Levenson's Self-report Psychopathy Scale (LSRPS) in a sample of adult offenders (N= 342) imprisoned in different jails of Khyber Pakhtunkhwa (KPK) Pakistan, following translation of the measure into Urdu. Confirmatory factor analysis was used to assess the three alternative models of the Urdu Version of LSRPS with uncorrelated measurement error terms. Results revealed that the three-factor model of LSRPS is a better fit to the data than the one or two factor models. The reliability of the LSRPS was measured using Cronbach's Alpha. The implications for the theory and suggestions for future research are discussed. Valuable evidence is added to cross-cultural applications of LSRPS .

**Keywords:** Psychopathy; adult offenders; imprisoned; self-report translation; confirmatory factor analysis, Khyber Pakhtunkhwa

Psychopathy is an extreme variation from normal personality and a robust predictor of crime and violence (Cook & Michie, 2001; Edens, Skeem, Cruise & Cauffman, 2001; Hart, 1998; Hart & Hare, 1996; Jones, Miller & Lynam, 2011; Lynam, Whiteside & Jones, 1999; Miller, Lyman, Widiger & Leukefeld, 2001). Psychopaths are defined as callous, emotionless, manipulative, and impulsive individuals. They violate social values without any feelings of guilt, shame and regret (Miller & Lynam, 2003). A wealth of research has demonstrated a relationship between psychopathy and criminality. There a strong evidence that psychopathic criminals are more violent and have higher rates of recidivism than non-psychopathic criminals (Harpur, Hare & Hakstian, 1989; Hart, 1998; Hemphill, Hare & Wong, 1998; Neal & Sellbom, 2012; Salekin, Brannen, Zalot, Leistico & Neumann, 2006; Sellbom, 2012; Walter, 2003).

To assess and evaluate the construct validity and conceptual model of any scale, it is essential to know the latent structure that contains the latent classes or factors of that scale.

### **Core Concept of Psychopathy**

Based on previous researches, two major approaches have been developed to understand the latent structure of psychopathy: the personality-based approach and the behaviour-based approach. The personality-based approach considers traits such as dishonesty, callousness, fearlessness, and failure to form a close bond with others. The behaviour based-approach involves antisocial behaviour such as physical aggressiveness, impulsiveness, vandalism, and antagonism (Brinkley, Schmitt, Smith & Newman, 2001; Lilienfeld & Andrews, 1996; Sellbom, 2011).

To understand the underlying construct of psychopathy, Karpman (1948) made a distinction between primary psychopathy and secondary psychopathy. According to his distinction, primary psychopaths are callous, emotionless, selfish, and manipulative, while secondary psychopaths are impulsive, short-tempered and exhibit deviant life styles. He proposed that primary psychopaths should be considered true psychopaths, whereas secondary psychopaths are more impulsive and found to be engaged in antisocial acts.

During the 1960s and 1970s, the concept of psychopathy was not clearly explained due to the lack of consensus regarding its conceptualization. It took fifty years to arrive at the exact definition of psychopathy but it still needs strong psychological underpinnings (Blackburn, 1988). To date, many findings about the core concept of psychopathy and its emergence among community and incarcerated samples have been explored widely (Hare, Hart & Harpur, 1991; Hart, 1998; Levenson, Kiehl & Fitzpatrick, 1995; Lynam et al., 2007; Marcus, John & Edens, 2004; Salekin et al., 2006; Sellbom, 2011; Williams et al., 2007). However, precise definition and exact factor structure to assess psychopathy remain controversial (Poythress et al., 2010; Salekin et al., 2006; Williams & Paulhus, 2004).

On the basis of a wealth of clinical experience, Cleckley (1976) defined the core construct of psychopathy in his classic monograph "The Mask of Sanity". Cleckley introduced sixteen features such as callousness, egocentricity, and persistent lying. His efforts were descriptive and provided important ground work for future orientation and reliable identification of the core construct of psychopathy.

In the late 1980s, on the basis of Cleckley's criteria, Hare introduced twenty components of psychopathy like shallow charm, feelings of grandiosity, lying, conning, lack of feelings of regret, less empathy, inadequate-behavioural control, behavioural problems, impulsiveness, lack of responsibility for one's own actions, poor marital relations, juvenile delinquency, and criminal behaviour.

Similarly, two alternative approaches for psychopathy were compared by Harper, Hare and Hakstian (1989) based on PCL-R factor analysis. The interpersonal approach was constructed from core features of the psychopathic personality such as narcissism, shallow affect, lack of guilt, and the behavioural approach which considered conduct problems, deviant life style, and antisocial acts.

Hare and Neumann (2005) proposed that psychopathy is a multidimensional construct and suggested that existence of early antisocial behaviour is an important component of the psychopathy construct.

Williams, Nathanson and Paulhus (2003) suggested an association between psychopathy and aggressive, antisocial, and violent behaviour. They found that those individuals who scored high on the psychopathy scale engaged in delinquent behaviour. Total scores on the psychopathy scale were also associated with all aspects of antisocial behaviour.

Brinkley et al. (2008) theoretically defined the three factors of LSRPS and suggested that factor 1 (the egocentric) measures manipulative, egocentric, and cunning behaviour; factor 2 (the antisocial) assesses recklessness and disruptive life style; and factor 3 (the callous) measures unsympathetic and emotionless approaches to life.

Sellbom (2011) defined 'psychopathy as a severe personality disorder underpinned by behavioural, interpersonal and affective traits' (p. 440).

### **Psychopathy as Robust Predictor of Crime and Violence**

The relationship between psychopathy and crime is well documented. It is suggested that psychopathy is a personality construct associated with aggressive personality traits and antisocial behaviour (Williams, Paulhus & Hare, 2007).

Blackburn (1975) analysed the personality profile of 79 male offenders who were non-psychotic. He used a cluster analysis method and suggested two types of psychopaths: primary psychopaths and secondary psychopaths. He found that primary psychopathy was associated with extraversion but not with neuroticism, whereas, in contrast, secondary psychopathy was linked to neuroticism but not to extraversion. Furthermore, he found that both were highly correlated with impulsivity. Hare and Neumann (2005)

suggested that 'psychopaths have shallow emotions, cunning behaviour, lack of guiltiness, lack of establishing strong bonds with others, and impulsive behaviour' (p. 57).

### **Different models of psychopathy**

Before elaborating the latent factors of scale, it is imperative to investigate whether the underlying construct is categorical or dimensional. It has been shown in previous studies that psychopathy is a dimensional construct (Hare & Neumann, 2005; Lilienfeld & Andrews, 1996; Walters, Brinkley, Magaletta & Diamond, 2008). However, the exact structural model of psychopathy is not appropriately clear (Cook & Michie, 2001) because the factor structure of each measure is controversial (Poythress et al., 2010; Salekin et al., 2006; Williams, Nathanson & Paulhus, 2003). Therefore, further studies are essential to investigate the appropriate structural model of psychopathy across diverse and cross-cultural settings.

Previous studies have revealed that the basic structure of PCL-R has been analysed a two-factor model, a three-factor model, and a hierarchical-model. According to the literature, the most prominent and widely used PCL-R scale is based on the two factor model (Cook, Michie & Skeem, 2007). Harpur et al., (1989) suggested that the two factor model of PCL-R is a valid and reliable tool to assess psychopathy among the prison population.

Hemphill et al., (1998) conducted a meta-analysis after reviewing the literature related to the Hare Psychopathy Checklist Scale and recidivism. The purpose of their study was to understand the link between PCL-R and recidivism. Results showed that psychopaths were more likely to be recidivists than non-psychopaths.

Cooke and Michie (2001) examined the utility of the three-factor hierarchical model to understand the complex construct of psychopathy. They suggested that their three-factor model contained items which appropriately assess the basic tendencies, instead of characteristic adaptations. They proposed that criminality is not a basic component of psychopathy: it can be the consequence of psychopathy because it has been found that many psychopaths are not criminals, and are well represented in their society. The study emphasized the three-factor structure to evaluate the core concept of psychopathy. However, study remains unable to consider the antisocial dimension of psychopathy.

Salekin et al., (2006) assessed two-three-and four-factor models respectively among a sample of adolescent offenders (N=30) by using the Psychopathy Check List: Youth Version. CFA results supported the utility of a model consisting four factors. Factor-1 (Interpersonal dimension) is underpinned by feelings of grandiosity, superficial charm, pathological lying, and manipulation. Factor-2 (Affective dimension) includes shallow effect, lack of empathy, lack of guilt and irresponsibility. Factor-3 (Life style/Behavioural dimension) is comprised of lack of planning, parasitic life style, and impulsivity. Factor-4 (Antisocial dimension) included early behavioural problems, serious criminal behaviour, criminal versatility, and juvenile delinquency. However, weak factor loadings on factor-4 revealed that the three-factor model is more appropriate. Results revealed that the first two factors were strong predictors of psychopathy, whereas remaining two factors were slightly less predictive.

William and Paulhus (2007) replicated the four-factor model among a student sample to measure the factor structure of psychopathy. The Root Mean Square of Approximation (*RMSEA*) for the four-factor model was .06 while the values of the two good fit indexes, incremental fit index (IFI) and confirmatory fit index (CFI) exceed .92. To assess the discriminant validity, the scale was correlated with Levenson's Self-Report Psychopathy Scale (LSRPS; Levenson et al., 1995) and the Psychopathic Personality Inventory (PPI; Lilienfeld & Andrews, 1996), although the correlation between SRP-II and these measures was not high enough: PPI ( $r = .60$ ), LSRP ( $r = .53$ ) and P scale ( $r = .63$ ) respectively. However, one of the limitations of these studies was capturing four factor model of psychopathy among a sample of students rather than criminal offenders.

Brinkley and his colleagues (2008) assessed the dimensionality and concurrent validity of LSRPS among 430 imprisoned females. They found inadequacy in a two-dimensional approach and proposed a three-dimensional structure. These three dimensions are: affective, interpersonal, and behavioural.

Similarly, Sellbom (2011) suggested the three-factor model as the best fitting, by using both male and female samples and two extensively studied populations (college students and incarcerated). The author proposed that psychopathy is a severe personality trait consisting of behavioural, interpersonal and affective traits. The behavioural factor is related to impulsivity and carelessness while the interpersonal factor involves deceitfulness and feelings of grandiosity. The affective factor is associated with callousness, emotionless, and lack of feeling of guilt.

A recent study conducted by Neal and Sellbom (2012) examined the dimensionality and construct validity of Hare's Self-Report Psychopathy Scale among 602 students. They found the utility of the four-factor model. Factor 1 (IMP) strongly predicted lack of honesty, blaming others, alienation, aggression, deception and selfishness. Factor 2 (CA) predicted low empathy, callousness and unemotional traits. Factor 3 (ELS) predicted proneness towards boredom, seeking excitement, impulsivity, less dependability, and less control, whereas, Factor 4 (CT) strongly predicted aggression and theft. As expected, ELS and CT were both significant predictors of alcohol-and drug-related problems. CT is the best behavioural measure to assess engagement in externalizing and criminal behaviour, whereas ELS is the best predictor of violent risk.

### **Construct validity of LSRPS**

The LSRPS (Levenson, Kiehl & Fitzpatrick, 1995) self-report Questionnaire consists of a-26-items, comprising two factors labelled primary psychopathy and secondary psychopathy. The two factors of LSRPS are similar to the two factors underpinned by Hare's Psychopathy Checklist Revised (Harpur et al., 1989; Levenson et al., 1995; Poythress et al., 2010). Factor 1 items were designed to assess inclination to lying, lack of remorse, callousness, manipulativeness and selfishness. Factor 2 items were created to assess impulsiveness, lack of control to tolerate frustration, high-temperedness, and inability to settle long-term goals. This scale was initially validated on 487 university students. The internal consistency (Cronbach's Alpha) for the primary scale was  $\alpha = .82$  and for the secondary scale  $\alpha = .63$ , which was acceptable. Results indicated that the use of LSRPS was satisfactory among the student sample (Levenson et al., 1995).

In an effort to report the reliability and validity of the Levenson Self-Report Psychopathy, two analyses were conducted by Laynam, Whitide and Jones (1999). The first study investigated the factor structure of LSRPS and its association with antisocial behaviour and common dimensions of personality by using 1,958 undergraduate students. The second study included 70 criminals to discriminate psychopath offenders from non-psychopaths by using performance tasks. The analysis of the study included two steps. In the first step, the model was investigated using both males and females. Results indicated that the two-dimensional model was better fitted to the data than the one-dimensional model. The second analysis consisted of 1,746 participants examining two factors across men and women. Results indicated that the model was acceptable with RMSEA 0.026 and CFI 0.90. To investigate the construct validity of the LSRPS, the researchers examined the relationship between the LSRPS (total score and two scales score) and life time and one year previously delinquency, use of drugs, alcohol use in the past year, and imprisonment history. Those individuals who scored higher on LSRPS were involved in using different drugs like marijuana, cocaine, and psychedelic substances in their lifetimes and in the previous year than those who scored low on the LSRPS. Furthermore, individuals who scored high on LSRPS had been involved in more antisocial acts during their whole life and within the previous year than those who scored low. Finally, those who scored high on LSRPS were more likely to report being arrested in their lifetime. There was significant correlation between using a variety of drugs during the previous year and scores on LSRPS factor 2 than scores on factor1. The difference between factor 1 and factor 2 was not significant. There was strong correlation between scores on LSRPS factor 2 and antisocial behaviour during the previous year and forever. Additionally, the association between total scores on LSRPS and variety of lifetime antisocial behaviour was stronger for women than for men. The reliability in term of internal consistency for primary scale was excellent ( $\alpha = .84$ ) and for the

secondary scale was acceptable ( $\alpha=.68$ ). Further results showed that Test-retest reliability of LSRPS across eight week was quite high ( $r=.83, p < .01$ ).

Brinkley et al. (2008) found the two-factor model to be an adequate and applied Exploratory Factor Analysis (EFA) which confirmed the three-factor structure by using 19 out of 26 items of LSRPS. These factors were labelled Egocentricity (10 items), Callous (4 items), and Antisocial (5 items). These three factors showed different correlations with sensation seeking, antisocial behaviour, aggression, hostility, and egocentricity. Egocentric and callous factor did not exhibit the similar constructs to the primary psychopathy scale from Levenson et al.'s 1995 study, but antisocial actions were very well associated with the secondary scale. The study found that the three-factor structure is more appropriate for assessing psychopathy than two-factor structures.

Sellbom (2011) found the three-factor model to be best fitting. The Cronbach's alpha for the three factors were .83 (Egocentricity), .61 (Callous), and .64 (Antisocial), while .84 for total score. The reason for the comparatively low reliability for the Callous and Antisocial scales was the small number of items of the subscales, respectively 4 and 5.

### **Current study**

Sellbom (2011) investigated the internal structure of LSRPS, and the construct validity of the total scale and sub-scales by using both the 26- item version and the 19-item version, and found the three-factor model (using 19 items) to be the best fitting model, as suggested by Brinkley, et al., (2008).

Brinkley et al. (2008) suggested that scholars who would use LSRPS should strongly consider scoring on three factors rather than two factors when conducting future research. Therefore, in the current study total 19 items out of 26 items are used to examine the core concept of psychopathy.

It is hypothesised, based on the results of previous researches (Brinkley et al., 2008; Sellbom, 2011), that a three-factor model will represent a better fitting model than the two-and one-factor models among adult prisoners. In Pakistan very limited studies have been conducted to measure the core concept of psychopathy among the imprisoned population. Therefore, the present study was conducted to explore the construct validity and dimensionality of the Urdu Version of LSRPS to assess psychopathy among adult offenders.

## **Method**

### **Participants and procedure**

In the current study 342 male adult offenders imprisoned in the different jails located in the different cities of Khyber Pakhtunkhwa (KPK) Pakistan were recruited. The age range of the respondents was between 21 and 45 years ( $M = 30.08, SD = 7.58$ ). Most of the offenders (57.9%) came from single parent families, 56.7% belonged to rural areas, and 53.2% were imprisoned for violent crime. Additionally, 37.4% ( $n= 128$ ) of prisoners were single, 52% ( $n= 178$ ) were married, 8.2% ( $n= 28$ ) were divorced and 2.3% ( $n= 8$ ) were widowed. Most of the offenders (65.5%) were from lower economic status.

Approval for this project was sought from the Minister to Prisons of KPK. A booklet along with a consent sheet was provided only to those participants who were able to read and write in Urdu. The participants were assured that all the data would be kept anonymous and that they could withdraw from the study at any point. The questionnaire was completed by participants within their living cells in the prisons. The participants were requested to return a completed questionnaire to the superintendent.

### **Materials**

**Levenson Self-report psychopathy scale** (Levenson, Kiehl & Fitzpatrick, 1995) consists of 26 items but only 19 of these were selected for the present study, as used by previous researchers Brinkley (2008) and Sellbom (2011). 5-point Likert Scale was used to score the item: 1= *strongly disagree*, 2 = *disagree*, 3= *sometimes*, 4= *agree* and 5= *strongly agree*. Six items included in the selected items were reversely scored

(i.e. from strongly agree = 1 to strongly disagree = 5). The possible range of the scores was between 19 and 95.

**Inventory of Callous-Unemotional Traits ICUT (Frick 2004)** consists of 24 items. 4-Likert Scale was used to score the item from 0 (*not at all true*) to 3 (definitely true). The scale is designed to assess the callous and unemotional traits.

**Demographic information:** An information sheet was used to collect demographic information. The demographic information consisted of age, location, offender types, and socio-economic status. The Principal researcher translated the measure from English into Urdu and then sent the translation to two other assistant professors in related fields to translate the Urdu version back into English. Both the translated Urdu version and English version were submitted to four academics who suggested some changes.

## Results

Traditional confirmatory factor analytic (CFA) techniques were used to examine the construct validity and dimensionality of the Urdu version of the LSRP scale. A three-factor model of the LSRP scale was specified and estimated using Amos 18, and SPSS 19 was used for the analysis of descriptive statistics and correlations. CFA techniques are helpful in assessing dimensionality and factor loading. To compare the three alternative models of LSRP, Goodness-of fit indices: Chi-square ( $\chi^2$ ), Root Mean Square Error of Approximation (RMSEA; Steiger, 1990) with 90% Confidence Interval (90% CI), Root Mean Square Residual (SMSR), Akaike Information Criterion (AIC; Akaike, 1973), Comparative Fit Index (CFI; Bentler, 1990) and Tucker Lewis Index (TLI; Tucker and Lewis, 1973). A nonsignificant chi-square (Kline, 2005) and values above 0.95 for the CFI and TLI reflect a good model fit (Hu and Bentler, 1999; Vandenberg, 2002). However, values above 0.90 for CFI and TLI indicate adequate fit (Hu and Bentler, 1999; Vandenberg, 1999). Values less than 0.05 for RMSEA and RMSR indicate good fit, and values up to 0.08 suggest reasonable errors of approximation in the population (Browne & Cudeck, 1993). To compare the alternative models, AIC was used. The smallest value of AIC indicates the best fitting model.

Descriptive statistics included mean (*M*), standard deviation (*SD*), range, and Cronbach's Alpha reliability (Cronbach, 1951) for the total and the subscales of LSRPS along with socioeconomic status and type of crime that are presented in Table 1. The descriptive statistics indicated that adult criminal offenders reported high level of egocentricity, antisocial behaviour, and callousness. Results also indicated that type of criminal offense is significantly positively correlated with total and subscales of LSRPS and significantly negatively correlated with socioeconomic status. Furthermore, total and subscales of Urdu version of LSRPS and socio-economic status were significantly negatively correlated among incarcerated adult criminal offenders.

**Table 1**

*Descriptive statistics, reliability and correlation for LSRPS (total) and three subscales, socio-economic status and type of crime (N = 342)*

Variable	TPS	EC	CA	AS	SES	TC
Total Psychopathy Score(TPS)	1					
Egocentricity (EC)	0.89**	1			.	
Callous (CA)	0.64**	0.39**	1		.	
Antisocial (AS)	0.73**	0.44**	0.35**	1	.	

Means	48.17	24.41	10.44	12.22	NA	NA
Standard deviations	17.84	11.32	4.79	6.36	NA	NA
Range	19-90	10-50	4-20	5-25	NA	NA
Cronbach's alpha ( $\alpha$ )	0.94	0.97	0.93	0.96	NA	NA

\*\*p < 0.01

#### Factor Analysis of Urdu Version LSRPS

Three factors of LSRPS were specified. The first model of LSRPS was specified as the one-factor model including all of the 19 items in the scale. The second model consisted of two dimensions of the LSRPS: the first dimension comprised 13 items measuring primary psychopathy (Q2, Q4, Q7, Q9, Q11, Q13, Q17, Q21, Q22, Q23, Q24, Q25, and Q26); the second dimension was comprised of 6 items (Q1, Q3, Q5, Q10, Q16, and Q15) measuring secondary psychopathy. The third model of LSRPS included three factors comprising egocentric (10 items; Q1, Q3, Q5, Q7, Q9, Q11, Q13, Q17, Q21, and Q23), Callous (four items; Q22, Q24, Q25, and Q26), and Antisocial (five items; Q2, Q4, Q10, Q16, and Q18). Each model was specified on the basis of the results obtained by the studies conducted by Brinkley (2008) and Sellbom (2011).

Table 2 indicates both standardised and unstandardized factor loading along with standard errors for each observed variable. Hair et al. (1998) suggest that in CFA, standardised factor loading should be 0.6 or above because this shows that half of the variance in the observed variable is explained by the latent variable. The factor loadings for all items among the current sample ranged from 0.81 to 0.94; therefore the present results are consistent with the indications of Hair et al. (1998).

**Table 2**

*Standardized and unstandardized regression paths (with standard errors) for the specified structural model*

Item		<i>B</i>	<i>B</i>	<i>SE</i>
<b>Factor 1 (Egocentric)</b>				
1.	Success is based on survival of the fittest; I am not concerned about the losers.	1.00	.85***	.04
2.	For me, what's right is whatever I can get away with.	1.00	.91***	.03
3.	In today's world, I feel justified in doing anything I can get away with to succeed.	1.00	.92***	.03
4.	My main purpose in life is getting as many goodies as I can.	1.00	.84***	.04
5.	Making a lot of money is my most important goal.	1.00	.90***	.03
6.	I let others worry about higher values; my main concern is with the bottom line.	1.00	.92***	.03
7.	People who are stupid enough to get ripped off usually deserve it.	.99	.81***	.03
8.	I tell other people what they want to hear so that they will do what I want them to do.	1.00	.90***	.04
9.	I often admire a really clever scam.	.97	.83***	.04
10.	I enjoy manipulating other people's feeling.	1.00	.81***	.04
<b>Factor 2 (Callous)</b>				
1.	I make a point of trying not to hurt others in pursuit of my goals.	1.00	.91***	.02
2.	I feel bad if my words or actions cause someone else to else to feel emotional pain.	.96	.85***	.03
3.	Even if I were trying very hard to sell something, I wouldn't lie about	1.00	.87***	.03

it.

4.	Cheating is not justified because it is unfair to others.	1.00	.88***	.03
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**Factor 3 (Antisocial)**

1.	I find myself in the same kind of trouble, time after time.	1.00	.93***	.02
2.	I am often bore	.98	.94***	.02
3.	I quickly lose interest in tasks I start.	.95	.89***	.03
4.	I have been in a lot of shouting matches with other people.	.90	.89***	.02
5.	When I get frustrated, I often "let off steam" by blowing my top.	1.00	.92***	.02

### Internal Consistency and inter-item Correlation of Urdu Version of LSRPS

Internal consistency was evaluated using Cronbach's Alpha. Table 3 shows correlations between latent factors: 0.45 for Egocentric and Antisocial, 0.41 for Egocentricity and Callous and 0.36 for Callous and Antisocial. Correlations among the three factors show that all three components of the LSRPS are statistically moderately correlated.

**Table3**

*Correlation between three latent factors of Urdu version of LSRP Scale*

Latent Factors	EC	CA	AS
Egocentric (EC)	---		
Callous (CA)	.41	---	
Antisocial (AS)	.45	.36	---

Note: All correlations are significant at  $p < .001$

### Three Factors model of Urdu version of LSRPS

Results indicate that all indices showed improvement in the three-factor model. Even though chi-squared is statistically significant, as Tanaka (1987) suggested, that model cannot be rejected on the basis of significant chi-square because big sample sizes amplify the power of the test. In addition, the CFI = .95, TLI = .94, RMSEA = .07 and RSMR = .03 indicate an adequate fit of data. The AIC value (612.536) also indicates that the three-factor model is better fitted to the data than alternative models.

**Table 4**

*Fit indices for the three alternative confirmatory factor analysis models of LSRPS.*

	$\chi^2$	df	CFI	TLI	(90%CI)	RMSEA	SRMR	AIC
<b>Models</b>								
1 Factor Model	3400.016***	153	.57	.52	(.24/.25)	.24	.18	3474.016
2 Factor Model	3338.569***	152	.58	.53	(.24/.25)	.24	.19	3414.569
3 Factor Model	536.536***	152	.95	.94	(.07/.09)	.07	.03	612.536

Note.  $\chi^2$  = chi squared goodness of fit statistic; df = degrees of freedom; RMSEA = Root-Mean-Square Error of Approximation; CI = Confidence Interval; AIC = Akaike Information Criterion; CFI = Comparative Fit Index; TLI = Tucker Lewis Index; SRMR = Standardized Square Root Mean Residual. \*\*\* Indicates  $\chi^2$  results are statistically significant ( $p < .001$ ).



**Table 5***Bivariate correlation between LSRPS scores and relevant external criteria*

	Total Score (TPS)	Egocentricity (EC)	Callous (CA)	Antisocial (AS)
ICUCA	<b>44**</b>	<b>43**</b>	<b>31**</b>	<b>25**</b>
ICUUC	<b>42**</b>	<b>36**</b>	<b>30**</b>	<b>31**</b>
ICUUE	<b>38**</b>	<b>27**</b>	<b>21**</b>	<b>23**</b>
Recidivism	<b>58**</b>	<b>54**</b>	<b>32**</b>	<b>40**</b>
Violent crime	<b>60*</b>	<b>58**</b>	<b>32**</b>	<b>48**</b>
Substance abuse	<b>29**</b>	<b>41**</b>	-.01	<b>21*</b>
Socio-economic status (SES)	<b>-0.21**</b>	<b>-0.19**</b>	<b>-0.14**</b>	<b>-0.12**</b>

Note. ICUCA Inventory of Callous-Unemotional Traits Callousness; ICUUC = Inventory of Callous-Unemotional Traits Uncaring; ICUUE = Inventory of Callous-Unemotional Traits Unemotional. All correlations are statistically significant at  $p < 0.05$  and  $p < 0.01$ .

### **Construct Validity of Three Factors of Urdu Version LSRPS**

Table 5 shows bivariate correlations between LSRPS and subscale scores and external criteria. Initial correlation revealed that the total score of LSRPS and the three subscales are significantly related to the three factors of ICU: recidivism, violent crime, and substance abuse. Significant positive relationship has been found between recidivism and the total and subscales of LSRPS. The variable of violent crime is highly significantly correlated with LSRPS total score and EC subscale of Psychopathy. The variable of socio-economic status is significantly negatively correlated with the total and subscales of LSRPS.

### **Conclusion**

The main purpose of the present study was to examine the construct validity and dimensionality of the Urdu Version of the LSRPS among the adult incarcerated population in Pakistan. Present results suggest that LSRPS can be conceptualized and reliably measured by the three-factor model, with the factors: egocentricity, callous and antisocial. The current research used traditional confirmatory factor analysis to specify and empirically test three alternative models of the Urdu Version of the Levenson Self-report Psychopathy Scale.

Results show that the three-factor solution provides an excellent fit to the data, much better than the one-and two-factor solutions. These current findings support the earlier research conducted by Brinkley (2008) and Sellbom (2011).

The results of the CFA suggest that the three-factor model of the Urdu version of LSRPS fit the data very well. The three-factor model of the Urdu Version of LSRPS is demonstrably the best fitting model and provides strong empirical support for the construct validity of LSRPS. Thus the three-factor solution for the LSRPS among incarcerated offenders in Pakistan is consistent with Brinkley's (2008) and Sellbom's (2011) investigations.

Further, the three-factor model of the Urdu version of LSRPS was supported by examination of the factor loading. The current results indicate that almost all items loaded strongly onto their latent factor, and the majority of items displaying factor loading above 0.80 which satisfying the criteria specified by Hair, Anderson, Tatham and Black (1998).

The current study shows that the three factors in the subscales of the Urdu version of LSRPS are moderately correlated. That is contrary to Sellbom's (2011) study. The present study also explored the relationship between the total and subscales of LSRPS scores and external variables including ICUCA, ICUUC, ICUUE, recidivism, violent crime, substance abuse, and socio-economic status to assess the additional

validation criteria. The present results indicated significant positive correlation between LSRPS total and subscales and type of crime. These results are consistent with those of previous studies (Hare, 1991; Hemphill et al., 1998; Salekin et al., 1996; Murrie, Cornell, Kaplan, McConville & Levy-Elkon, 2004). Moderate relationships have been found among total scores and antisocial subscale scores of psychopathy and substance abuse which is in line with the previous study conducted by Hemphill and colleagues (1994), who found moderate association between substance abuse and total score of PCL-R among male inmates. However, no relationship has been found between subscale of callousness and substance abuse which is consistent with the previous study which found that substance abuse tended to be more associated with factor two (antisocial factor) than factor one (callousness) (Mix, 2015).

Additionally, the variable of socio-economic status was significantly negatively related to the total score of the Urdu version of LSRPS and subscales and type of crime (violent or non-violent) which suggests that those adult criminal offenders who belong to low socio-economic status were more egocentric, callous, antisocial and violent than those belonging to the middle or upper class (Hare & McPherson, 1984; Hare, 1999; Heilbrun, 1979; Hemphill et al. 1998; Serin, 1991). However, the relationships between socio-economic status and the three sub-scales of LSRPS were slightly lower but still significant which is consistent with the study of Walsh and Kosson (2007), who found a slightly lower relationship between SES and PCL-R psychopathy.

### **Limitations and further suggestions**

There are also some limitations. The first concerned generalizability due to the homogeneity of the sample. Our conclusion is limited to incarcerated adult male offenders; therefore, the present study may not reflect the development of psychopathy in either females or the general population. Future research should replicate this study using a heterogeneous sample as well as the general population to understand the true construct of psychopathy. Another limitation was the method of data collection. A self-report questionnaire was used to collect the data, due to high security alerts in all prisons of KPK. It is suggested that a self-report measure can introduce response biases. Questionnaires were given only to those adult offenders who were able to read and write Urdu, naturally excluding a proportion of the prison population: this was an unavoidable limitation of the study.

In terms of suggestions for the future, further research is warranted to determine whether the three-factor model of LSRPS can be replicated in other samples. LSRPS dimensionality and construct validity is warranted among young and juvenile offenders. Further research with LSRPS also needs to be conducted, including the relationships between LSRPS and violent and non-violent offences, LSRPS scores and suicide ideation, LSRPS and self-esteem, not only in the incarcerated population but also in the general population, involving both male and female samples.

The results of the present research suggest that the Urdu version of LSRPS is a promising tool to assess psychopathy among adult offenders. It is an economical, easy to use and less time-consuming instrument and is capable of predicting violence and recidivism among the incarcerated population.

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