

Internal Consistency and Concurrent Validity for the Critical Hire-Personality Assessment: A Replication Study with Correctional Officers

Tony Tatman

USA

Received: April 25, 2020 Accepted: June 1, 2020 Online published: June 15, 2020

doi:10.5296/ijhrs.v10i3.16907

URL: <https://doi.org/10.5296/ijhrs.v10i3.16907>

Abstract

The Critical Hire – Personality Assessment (CH-PA) is a pre-employment personality assessment developed for law enforcement and correctional officer applicants. This study replicated findings provided by Tatman (2019) regarding the CH-PA's internal consistency and concurrent validity when compared to the NEO Personality Inventory-Revised. Results obtained in this study are consistent with findings obtained by Tatman (2019) and provide supporting evidence for the reliability and concurrent validity for the CH-PA when used with a sample of correctional officer applicants.

Keywords: pre-employment testing, personality testing, correctional officers

1. Introduction

1.1 Purpose and Literature Review

Pre-employment personality testing for law enforcement applicants has become a rather common practice in the United States. Approximately 98% of agencies from communities of 25,000 or more citizens report using pre-employment personality tests to aid in their law enforcement hiring decisions (Reaves, 2010), while at least 38 states have codified, or otherwise require per policy, applicant personality tests (Corey & Borum, 2013). This widespread use and popularity come, in part, from the rich empirical history showing personality testing's ability to adequately predict future workplace problems (Ones, Dilchert, Viswesvaran, & Judge, 2007). One model of personality commonly used in pre-employment personality testing is the Five Factor Model (FFM; Digman, 1990; Goldberg, 1993). The FFM separates personality into five unique domains or factors: Neuroticism, Extraversion, Openness, Agreeableness and Conscientiousness (Wiggins, 1996). Research has revealed that the FFM has significant correlations with, and has high accuracy rates for predicting, various

measures of work performance (Barrick, Mount, & Judge, 2001; Furnham & Fudge, 2008; Hurtz & Donovan, 2000; Mount, Barrick, & Stewart, 1998; Oh, Wang, & Mount, 2011; Ones et al., 2007; Rothmann & Coetzer, 2003; Salgado, 2002; Tett, Jackson, & Rothstein, 1991). The FFM has also been used to measure the personality traits of law enforcement officers and applicants from various countries. For example, the FFM has been found to predict work-related stress reactions in law enforcement officers in Italy (Garbarino, Chiorri, & Magnavita, 2014), burnout versus resilience in officers in South Africa (Louw, 2014), job performance ratings of officers in America (Detrick & Chibnall, 2006), and academy performance in police cadets in New Zealand (Black, 2000) and America (Detrick, Chibnall, & Luebbert, 2004).

Although many states identify correctional officers as peace officers (American Probation and Parole Association, 2006), the use of pre-employment personality testing has not been as widely used for correctional officer applicants as compared to police officer applicants. This limited use may stem, in part, from the lack of appropriate testing resources available to correctional hiring agencies. Tatman (2019) conducted an extensive search through the existing literature for pre-employment personality assessments for correctional officers. No tools were identified with published psychometrics or validation studies when used with correctional officers. As a result, Tatman developed the Critical Hire-Personality Assessment (CH-PA, Tatman, 2019), a FFM consistent personality assessment, to fill this gap in the pre-employment testing resources available for correctional hiring agencies. Tatman explored the psychometric properties of the CH-PA when used with correctional officers and found that it generated moderate to strong internal consistency coefficients, test re-test reliability, and criterion validity for predicting supervisor ratings of correctional officer job performance. The CH-PA scales and subscales also generated significant correlation coefficients with NEO Personality Inventory-R (NEO PI-R; Costa & McCrae, 1992) factors and facets, respectively, that were identified as being conceptually similar, suggesting strong concurrent validity. Although initial reliability and concurrent validity research on the CH-PA, when used with correctional office applicants, has been promising, the existing research findings constitute data from only one study. For a test to show adequate reliability and validity multiple studies or sources are needed, representing a trend of findings as opposed to a single analysis (Tippins, Sackett, & Oswald, 2018). Therefore, the purpose of this study is to replicate Tatman (2019) by examining the reliability and concurrent validity of the CH-PA with a sample of correctional officer applicants.

2. Methods

2.1 Participants

This sample consisted of 106 individuals (Males = 53; Females = 53) who applied for correctional officer positions within multiple rural and urban community-based corrections agencies in Iowa. The average age for participants in this sample was 34.43 (SD = 10.41, Median = 33), and ranged in age from 19 to 58. Racial/ethnic status for this sample consisted of 82 Caucasian, 15 African American, six Hispanic, two Bosnian, and one Asian participants.

2.2 Measures

The CH-PA is a pre-employment personality assessment developed for law enforcement and correctional officer applicants. The CH-PA uses the Five Factor Model of personality (FFM; Digman, 1990) as its theoretical framework, and contains five personality scales and 17 subscales. The five CH-PA scales consist of Stress Response ($\alpha = .86$), Extraversion ($\alpha = .85$), Flexibility ($\alpha = .77$), Agreeableness ($\alpha = .79$), and Conscientiousness ($\alpha = .89$) (Tatman, 2019). CH-PA questions are answered using a five-point, Likert-scale (e.g., Strongly Agree to Strongly Disagree).

In addition to the CH-PA, participants in this study also completed the NEO PI-R. The NEO PI-R was chosen in this study because, similar to the CH-PA, it uses the FFM as its theoretical framework, a model of personality identified as correlating with job performance and counterproductive behaviors (Barrick, Mount, & Judge, 2001; Salgado, 2002). This consistency in theoretical foundations allows for optimal comparisons between two measures of personality. In addition to being theoretically comparable to the CH-PA, the NEO PI-R is also appropriate for this study based on empirical evidence supporting its reliability and validity when used in law enforcement officer personnel selection procedures (Barrick & Mount, 1991; Detrick & Chibnal, 2006; Detrick & Chibnall, 2013; Detrick et. al., 2004). The NEO PI-R measures five factors of personality (Neuroticism, Extraversion, Openness, Agreeableness, and Conscientiousness). Each factor contains six facets or subscales. The NEO-PI-R has developed norms for men and women, as well as combined norms. Combined norms were used in this study.

2.3 Research Design and Sampling Procedures

This study utilized a secondary data analysis design. Agencies selected for inclusion into this study used the CH-PA and NEO PI-R as evaluation tools during their hiring process, providing naturally occurring, archival data. Participants in this sample completed the CH-PA and NEO PI-R as part of the agency's hiring process.

3. Results

3.1 Statistical Analyses

Concurrent validity was measured by calculating Pearson Correlation coefficients between CH-PA scales and NEO PI-R factors, as well as between CH-PA subscales and NEO PI-R facets. Internal consistency was measured by calculating Cronbach alphas.

3.1.1 Statistics and Data Analysis

CHP-PA scale and subscale Cronbach alpha scores, means, and standard deviations are provided in Table 1. Other than for CH-PA subscales Openness to Change ($\alpha = .56$) and Modesty ($\alpha = .57$), Cronbach alpha scores for the CH-PA scales and subscales showed adequate internal consistency. Results also revealed that NEO PI-R factors and their comparable CH-PA scales had significant correlation coefficients (Tables 2 to 6). Results also revealed significant relationships between NEO PI-R facets and their comparable CH-PA subscales (Tables 2 to 6).

Table 1. CH-PA Scale and Subscale Alphas, Means, and Standard Deviations

CH-PA		Alpha	M	SD
Scales	Subscales			
Stress Response		.84	29.91	6.17
	Irritability	.79	8.69	2.31
	Impulsivity	.65	11.57	2.88
	Social Discomfort	.69	9.65	2.27
Extraversion		.86	66.74	7.64
	Warmth	.80	21.09	2.31
	Assertiveness	.79	15.15	2.28
	Gregariousness	.72	12.64	2.65
	Activity Level	.73	17.86	3.13
Flexibility		.75	29.47	4.17
	Intellectual Curiosity	.81	14.76	3.01
	Openness to Change	.56	14.71	1.97
Agreeableness		.83	70.49	6.71
	Empathy	.77	28.92	3.00
	Trust	.73	14.47	2.36
	Modesty	.57	7.84	1.37
Conscientiousness		.89	81.64	8.08
	Drive & Self-Discipline	.81	38.28	3.37
	Organization	.80	23.01	3.98
	Dependability & Reliability	.77	34.17	2.77
	Deliberation	.78	26.50	4.22

Table 2. NEO PI-R Neuroticism and CH-PA Stress Response Correlations

NEO PI-R Factor	CH-PA			
	Scale	Subscales		
	Stress Response	Irritability	Impulsivity	Social Discomfort
Neuroticism	.54			
Facets				
Anxiety		.29 (.003)	.30 (.002)	.44
Angry Hostility		.69	.50	.40
Depression		.33 (.001)	.28 (.004)	.46
Self-Consciousness		.37	.39	.52
Impulsivity		.40	.58	.43
Vulnerability		.61	.50	.51

Note: NEO PI-R facets and CH-PA subscales predetermined by Tatman (2019) as being conceptually similar are identified in bold. All correlation coefficients were significant at $p < .0001$ unless otherwise noted.

Table 3. NEO PI-R Extraversion and CH-PA Extraversion Correlations

NEO PI-R	CH-PA				
	Scale	Subscales			
	Extraversion	Warmth	Assertiveness	Gregariousness	Activity Level
Factor					
Extraversion	.56				
Facets					
Warmth		.60	.33 (.001)	.47	.27 (.006)
Gregariousness		.47	.23 (.017)	.72	.32 (.001)
Assertiveness		.36	.59	.38	.26 (.009)
Activity		.33 (.001)	.35	.25 (.011)	.43
Excitement Seeking		.20 (.041)	.15 (.139)	.31 (.001)	.41
Positive Emotions		.55	.24 (.014)	.50	.29 (.003)

Note: NEO PI-R facets and CH-PA subscales predetermined by Tatman (2019) as being conceptually similar are identified in bold. All correlation coefficients were significant at $p < .0001$ unless otherwise noted.

Table 4. NEO PI-R Openness to Experiences and CH-PA Flexibility Correlations

NEO PI-R	CH-PA		
	Scale	Subscales	
	Flexibility	Intellectual Curiosity	Openness to Change
Factor			
Openness	.56		
Facets			
Fantasy		.08 (.41)	-.15 (.124)
Aesthetics		.33 (.001)	.25 (.012)
Feelings		.07 (.476)	-.02 (.846)
Actions		.07 (.457)	.42
Ideas		.71	.24 (.016)
Values		.18 (.064)	.21 (.038)

Note: NEO PI-R facets and CH-PA subscales predetermined by Tatman (2019) as being conceptually similar are identified in bold. All correlation coefficients were significant at $p < .0001$ unless otherwise noted.

Table 5. NEO PI-R Agreeableness and CH-PA Agreeableness Correlations

		CH-PA			
		Scale	Subscales		
NEO PI-R		Agreeableness	Empathy	Trust	Modesty
Factor	Agreeableness	.60			
Facets	Trust		.43	.59	.18 (.071)
	Straightforwardness		.41	.40	.25 (.011)
	Altruism		.41	.34	.04 (.674)
	Compliance		.38	.23 (.018)	.14 (.169)
	Modesty		.25 (.012)	.13 (.208)	.33 (.001)
	Tender Mindedness		.49	.22 (.027)	.05 (.593)

Note: NEO PI-R facets and CH-PA subscales predetermined by Tatman (2019) as being conceptually similar are identified in bold. All correlation coefficients were significant at $p < .0001$ unless otherwise noted.

Table 6. NEO PI-R Conscientiousness and CH-PA Conscientiousness Correlations

		CH-PA				
		Scale	Subscales			
NEO PI-R		Conscientiousness	Drive & Self-Discipline	Dependability & Reliability	Organization	Deliberation
Factor	Conscientiousness	.72				
Facets	Competence		.63	.66	.46	.51
	Order		.56	.40	.69	.62
	Dutifulness		.56	.56	.53	.54
	Achievement Striving		.53	.48	.33 (.001)	.28 (.004)
	Self-Disciplined		.71	.68	.58	.53
	Deliberation		.57	.53	.59	.67

Note: NEO PI-R facets and CH-PA subscales predetermined by Tatman (2019) as being conceptually similar are identified in bold. All correlation coefficients were significant at $p < .0001$ unless otherwise noted.

4. Discussion

Other than for the CH-PA Openness to Change and Modesty subscales, alpha coefficients obtained in this study for the CH-PA scales and subscales showed adequate internal consistency. Alphas obtained for Openness to Change and Modesty differ from Tatman (2019) who found internal consistency coefficients of .62 and .64, respectively. However, it should be noted that these two subscales were the only subscales reported by Tatman with alphas falling below .70, suggesting that the present study may have highlighted low internal consistency for Openness to Change and Modesty that was originally identified by Tatman. Therefore, the present findings combined with those found by Tatman would suggest that the

internal consistency of the Openness to Change and Modesty subscales appear to have questionable internal consistency. The remaining CH-PA scales and subscale alphas are consistent with those found by Tatman, and establish a growing pattern of empirical support for the tool's internal consistency. Correlation coefficients obtained in this study were also consistent with Tatman (2019), which suggest that the CH-PA is measuring similar constructs as the NEO PI-R and provides supporting evidence that the CH-PA has adequate concurrent validity as a measure of normal personality traits. These findings are important to the field of pre-employment personality testing by providing empirical evidence for the CH-PA's reliability and validity when used with correctional officer applicants. These findings are also important to the field as it initiates a pattern of findings required by the Uniform Guidelines on Employee Selection Procedures (UGESP; Uniform Guidelines on Employee Selection Procedure, 1978). The UGESP was adopted by the Equal Employment Opportunity Commission and delineates guidelines for determining the proper use of tests and other applicant selection procedures. UGESP guidelines require that selection instruments, such as pre-employment personality testing, show evidence for the validity, reliability, and applicability for the particular job it is being used with (i.e., correctional officer applicants). Findings obtained in this study help provide the empirical evidence required by the UGESP.

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