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DEVELOPMENT AND VALIDATION OF PERSONAL RESOURCE INVENTORY

Aisha Bano* **& Alay Ahmad**
Department of Psychology,
Preston University, Islamabad, Pakistan

ABSTRACT

*The objectives of the study were to develop, investigate factor structure and establish the psychometric properties of an indigenized Personal Resource Inventory. An item pool comprising of 179 items was reduced to a list of 45 items with the help of focus group. Sample comprised of 451 employees working in private, government and semi-government organizations with mean age 28.19 (± SD = 6.8). The 36 items correlated significantly (p < .01) with total scale's score with alpha reliability coefficient of .89 and split half reliability coefficient of .79 & .83. Test of sphericity was significant (x^2 (451) = 3718.19, df = 666, p < .000) and measures of sampling adequacy as moderate (KMO = .89). Rotated Varimax factor analysis of 36 items showed that factor loadings range from .34 to .62 for the four factors namely optimism, resilience, hope and self-efficacy, which explain 34.27% of the total variance which is satisfactory. A significant positive correlation with psychological well-being (r(80) = .57**, p < .01) and a significant negative correlation (r(80)=-.55**, p <.01) with depression is found. Positive Resource Inventory accounts for 33% of variance in psychological wellbeing and 30% of variance in depression.*

Keywords: Personal Resource, Psychological well-being, Indigenized, Psychometric Properties

* Correspondence Address: Aisha Bano, PhD Fellow, C/O Mrs. Col Nazir, House 414, Street 50, G-9/1, Islamabad, Pakistan. Email: ms_fairytale@outlook.com

INTRODUCTION

The World Health Organization (WHO, 2010) defines health as *"a state of complete physical, mental and social well-being, and not merely the absence of disease".* The term "personal resources" is used for those personality strengths (Park, Peterson, & Seligman, 2004) which have positive dimensionality as their unique feature. Many researches have been conducted in the west to describe the positive features of such personal resource model. Personal resources defined by Hobfoll, Johnson, Ennis and Jackson (2003) are those facets of the personality that are in general linked to resiliency and refer to one's sense of being in charge of, and being able to effectively influence his/her environment. Luthans, Youssef, and Avolio (2007) operationally defined personal resource through virtues (individual strengths) of hope, resilience, optimism and self-efficacy. Luthans, Youssef-Morgan, and Avolio (2015) documented personal resources to be based on four higher order core theory based and hence research based constructs of hope, self-efficacy, optimism and resilience and collectively named it as Psychological Capital (PsyCap). The four dimensions of Personal Resources are defined by them as: having confidence to take on and put in the necessary effort to succeed at challenging tasks (self-efficacy); making a positive attribution about succeeding now and in the future (optimism); persevering toward goals, and when necessary, redirecting paths to goals in order to succeed (hope); and when beset by problems and adversity, sustaining and bouncing back and even beyond (resiliency) to attain success.

Luthans, Youssef-Morgan, and Avolio (2015) after drawing from the broaden-and-build theory of Fredrickson (2011) appraised the meditational role of positive emotions in building and maintaining personal resource factors. The results of the study by Fredrickson, Cohn, Coffey, Pek, and Finkel (2011) demonstrates that positive emotions over a period of time increases personal resources of increased mindfulness, purpose in life, social support, life satisfaction and decreases depressive symptoms. In another study, it has been demonstrated that the positive emotions build personal resource repertoire over a period of time and thus increases individual adaptiveness to adversities whereas contrary to this negative affect i.e. neuroticism leads to harmful behavior (Soltaninejad et al., 2014). Various researches qualify the four psychological constructs namely hope, self-efficacy, optimism and resilience as personal resource (Luthans & Youssef-Morgan, & Avolio, 2015) by demonstrating positive correlation with increased capability for success (Aybas & Acar, 2017); enhanced positive mental health (Qhomashi, Ahmadi, Abbasi, & Salehi, 2016;

Selvaraj, 2015); good organizational fit (Manzoor, Khattak, & Hassan, 2015; Therasa & Vijayabanu, 2016) and negative correlation with depression (Riaz, Riaz, & Batool, 2014).

This study conducted in Pakistan will extend the mental health theory under the domain of positive psychology as positive psychological traits are still to be looked for in Pakistani context. Moreover, Pakistan has also been in fight against terrorism with the advent of 21st century and the coming generation has seen an edgy time with respect to healthy psychological maneuvers of joy and happiness. It is here where the interplay of positive and negative dispositional character traits creates difference between fully functioning and non-fully functioning individuals of the society. A sound indigenous measure for gauging positive individual traits is therefore needed in order to focus on something more positive rather than negative. Hence the main objective is to overcome the limitation of the manual of psychologist i.e. Diagnostic and Statistical Manual which states only the disorders of psychological nature but seems lacking in its prospect of those positive individual traits that must be buffering against these disorders among robust people?

In the light of the above literature following objectives were the focus:-

1. To develop an indigenized Personal Resource Inventory (PRI)

2. To investigate the factor structure of the indigenized Personal Resource Inventory (PRI) for Pakistani culture.

3. To establish the psychometric properties of the newly developed inventory.

METHOD

The study comprised of three phases:

Phase I:	Construct Domain Specification and Item Pool Generation
Phase II:	Investigation of Factor Structure of Indigenized Personal Resource Inventory
Phase III:	Establishment of Psychometric Properties of Personal Resource Inventory

Phase I: Construct Domain Specification and Item Pool Generation

The phase of construct domain specification and item pool generation comprised of seven steps:

In step I, data was collected by distributing a handout, in-depth interviews and literature review by incorporating the operational definitions of the construct i.e. personal resource along with the definitions of its proposed dimensions i.e. self-efficacy, resilience, hope, optimism based on the inclusion criterion of Luthans, Yousaf, and Avolio (2015) in all the three modalities of data collection. The indicators collected were from the subjects (N = 18) of age range 21-56 years; with minimum qualification of PhD (n = 01), M.Phil. (n = 02), Masters (n =04), Graduation (n = 06) and Inter (n = 02) and Matric (n = 03) working in private, semi-government and government organizations with atleast minimum experience of one year, were then combined and presented in sentence form. A total of 179 items were generated by this step.

In step II analysis of the items were done with the help of four experts and after review only 75 items were deemed appropriate for retention and be carried forward for further analysis.

In step III the 75 obtained items were pooled together and handed over to four subjects who were working in private and government sector instructed to categorize and place the item to their relevant dimension keeping in view their operational definition. By the feedback obtained by the participants all the items were sorted to their respected categories.

In step IV panel of four judges were given the definition of each dimension (six) and the list which contained the respective items. They were instructed to pick the representative item and discard the non-representative item for each dimension. In this step, as a result a total of 45 numbers of items were obtained to be retained for the newly constructed scale.

In step V the 45 items were presented in questionnaire form along with Likert type scale with six point response options ranging from "*absolutely applies on me (5)", "Moderately applies on me (4)", Mostly applies to me (3)", "Not really applies to me (2)", "No hardly applies to me (1)", "Not at all applies to me" (0).*

In step VI the initial questionnaire was presented to samples of 30 which had prospective subjects' characteristics and were working in private, semi-government and government organizations. Language changes and word phrasing was done accordingly of two of the ambiguous items which got highlighted in light of suggestions. This step yielded results showing that the instrument has face validity, is readable and comprehendible.

Step VII finalized the demographic information sheet to collect information like age, educational qualification, gender and work experience.

Phase II: Investigation of Factor Structure of Personal Resource Inventory

During phase II, an investigation of Factor Structure of Personal Resource Inventory is done.

Participants

A sample of 451 employees working in private, government and semi-government organizations was selected; characteristics were 62.3% males and 37.7% females with mean age of 28.19 (± *SD* = 6.8), mean job experience of 5.1 years (±*SD* = 5.97) and minimum qualification of Matric (10.9 %) and highest PhD (1.8 %). The remaining sample were Intermediate (22%), Graduates (32.6 %) Masters (27.7%) and. M.Phil (5.1%) The demographic characteristics of the participants are given in Table 1.

Measures

Personal Resource Inventory

The Personal Resource Inventory comprised of 45 items developed inventory in Phase I of this study, measuring optimism, resilience, hope and self-efficacy. Responses are scored on six point Likert scale ranging from "absolutely applies on me (5)", "Moderately applies on me (4)", Mostly applies to me (3)", "Not really applies to me (2)", "No hardly applies to me (1)", "Not at all applies to me" (1).

Procedure

The participants were approached and were assured of the confidentiality and the purpose of the research. The data was collected by distributing the newly constructed 45 items Personal Resource Inventory (PRI) to determine its Factor Structure. They were requested to read the instructions carefully and ask any query. They were to select from the given options, the option which is most accurately describing them for the particular statement. They were thanked for their time and cooperation.

Scoring & Statistical Analysis

The scoring was done following established standard scoring procedure The Principal component analysis was chosen to investigate the factors fundamental to the Personal Resource Inventory (Table 3 & 4). The suitability of the data for factor analysis is ensured using two approaches: The Kaiser Meyer Olkin Measure of Sampling and the Barlett's Test of Sphericity (Table 2).

Phase III: Establishment of Psychometric Properties of Indigenized Personal Resource Inventory

The reliability and validity of the Indigenized Personal Resource Inventory was established in this Phase III.

Reliability Analysis of Personal Resource Inventory

Three types of reliability estimates (internal consistency, test-re-test, and split-half reliability) were made in the present study.

Participants

A sample of 451 employees working in private, government and semi-government organizations was selected; characteristics were 62.3% males and 37.7% females with mean age of 28.19 (± *SD* = 6.8), mean job experience of 5.1 years (±*SD* = 5.97) and minimum qualification of Matric (10.9 %) and highest PhD (1.8 %). The remaining sample were Intermediate (22%), Graduates (32.6 %), Masters (27.7%) and M.Phil (5.1%). The demographic characteristics of the sample are given in Table 1.

Measures

Personal Resource Inventory

The retained and finalized 36 items Personal Resource Inventory in Phase-II of this study, measuring optimism, resilience, hope and self-efficacy. Responses are scored on six point Likert scale ranging from "absolutely applies on me (5)", "Moderately applies on me (4)", Mostly applies to me (3)", "Not really applies to me (2)", "No hardly applies to me (1)", "Not at all applies to me" (1).

Procedure

The participants were approached and were assured of the confidentiality and the purpose of the research. The data was collected by distributing the newly constructed 36 items Personal Resource Inventory (PRI). They were requested to read the instructions carefully and ask any query. They were to select from the given options, the option which is most accurately describing them for the particular statement.

After a period of one month, among these participants, 80 were contacted again and Personal Resource Inventory was re-administered on them to make an estimate of the test-retest reliability. They were thanked for their cooperation.

Scoring & Statistical Analysis

The scoring was done following established standard scoring procedure. The reliability estimates were made using Statistical Package for the Social Sciences-Version 13. Cronbach's Alpha Coefficient was employed to determine the Internal Consistency Reliability of Personal Resource Inventory (Table 6). Pearson Product Moment Coefficient of Correlation was used to analyzed Test-Retest Reliability and Split-Half Reliability (Table 6).

Validity Analysis of Personal Resource Inventory

Construct validity (i.e., Convergent) was computed for Personal Resource Inventory (PRI).

Participants

The sample for validity study comprised of 80 employees (43 males & 37 females) recruited from private, government and semi-government organizations. Their age ranged from 20 years to 55 years with mean age of 27.9 (±SD = 6.1; Table 7).

Measures

For establishment of Construct Validity (i.e. Convergent) of Personal Resource Inventory, the Warwick Edinburg Mental Wellbeing Scale (Waqas et al., 2015) and Depression Subscale of Depression Anxiety and Stress Scale (Aslam, 2007) were used.

Personal Resource Inventory

The 36 items indigenized Personal Resource Inventory measuring optimism, resilience, hope and self-efficacy. Responses are scored on six point Likert scale ranging from "absolutely applies on me (5)", "Moderately applies on me (4)", Mostly applies to me (3)", "Not really applies to me (2)", "No hardly applies to me (1)", "Not at all applies to me" (1).

Warwick Edinburg Mental Wellbeing Scale

The Warwick Edinburg Mental Wellbeing Scale (WEMWBS) is a 14 item scale developed by Waqas *et* al. (2015). The responses are scored on five categories from *'none of the time'* to *'all of the time'*. It assess previous two weeks period. Total score is an index of magnitude of one's positive psychological functioning. The Cronbach's alpha of WEMWBS is.89 indicating good internal consistency.

Depression Sub-scale of Depression, Anxiety and Stress Scale

The depression sub-scale of Urdu translated version of Depression, Anxiety and Stress Scale (DASS; Aslam, 2007) consists of 14 items. The responses are scored on four categories from *"did not apply to me at all"* to *"apply to me very much or most of the time".* The total score is an index of

magnitude of one's depression. The Cronbach's alpha (α = .72) indicates satisfactory internal consistency.

Procedure

The participants were approached and were assured of the confidentiality and the purpose of the research. They were administered indigenized Personal Resource Inventory (PRI) along with Warwick Edinburg Mental Wellbeing Scale and Depression sub-scale of Urdu translated version of Depression, Anxiety and Stress Scale with minimum of 10 minutes break between each administration. They were requested to read the instructions carefully and ask any query. They were to select from the given options, the option which is most accurately describing them for the particular statement. They were thanked for their time and cooperation.

Scoring & Statistical Analysis

The scoring of measures was done according to standard scoring procedures. The Pearson Product Moment Coefficient of Correlation was computed among Personal Resource Inventory, Warwick Edinburg Mental Wellbeing Scale (WEMWBS, Waqas et al., 2015) and Depression sub-scale of Urdu translated version of Depression, Anxiety and Stress Scale (DASS; Aslam, 2007) to make validity estimate (Table 6).

RESULTS

Phase II: Investigation of Factor Structure of Personal Resource Inventory

Table 1
Demographic Characteristics of the Participants (N=451)

Variables	Category	*f*	%
Gender	Male	281	62.3
	Female	170	37.7
Educational Qualification	Matric		10.9
	Intermediate		22
	Graduates		32.6
	Masters		27.7
	M.Phil		5.1
	PhD		1.8
	M	***SD***	
Age	28.19	6.8	

Table 2
Kaiser Meyer Olkin (KMO) Measure of Sampling Adequacy and Barlett's Test of Sphericity

		df	***Sig.***
Kaiser Meyer Olkin (KMO) Measure of Sampling Adequacy	.892	-	-
Barlett's Test of Sphericity	3718.189	666	.000

The Table shows that the Kaiser Meyer Olkin Measure of Sampling Adequacy demonstrate a value of .892 which is classified as good indicating the adequacy of sample. Further, the obtained value for Barlett's test of Sphericity is significant indicating appropriateness for factor analysis ($p < .000$).

Table 3
Item-total correlations of Personal Resource Inventory (PRI) of 36 items

Item #	***r***	***Item #***	***r***	***Item#***	***r***
1	.43**	14	.60**	27	.49**
2	.32**	15	.357**	28	.36**
3	.44**	16	.54**	29	.49**
4	.45**	17	.28**	30	.50**
5	.30**	18	.32**	31	.39**
6	.38**	19	.47**	32	.42**
7	.47**	20	57**	33	.51**
8	.46**	21	.34**.	34	.53**
9	.48**	22	.46**	35	.47**
10	.48**	23	.52**	36	.53**
11	.45**	24	.58**		
12	.31**	25	.31**		
13	.40**	26	.52**		

***p < .01*

Table 3 shows item-total correlation of 36 items with significant positive correlation above .30 ($p < .01$). Hence, the results showed that items do support the purpose of the test and factor analysis could be employed at this stage.

Table 4

Factor Loadings based on Principal Component Analysis with Varimax Rotation of 45 items of Personal Resource Inventory (PRI) (N = 451)

Item# No in Original Scale	New Item No	I	II	III	IV	Communality value
1	1	.49				.36
3	2		.52			.28
4	3		.62			.46
6	4				.62	.43
7	5				.34	.17
8	6				.44	.29
10	7				.39	.27
11	8		.52			.40
12	9			.49		.35
13	10		.45			.45
14	11			.56		.41
15	12				.52	.32
16	13	.40				.29
17	14				.60	.51
18	15			.57		.33
19	16				.53	.42
23	17			.37		.17
24	18			.45		.36
25	19	.41				.41
27	20		.64			.50
28	21			.37		.17
29	22	.34				.26
30	23	.48				.34
31	24	.58				.47
33	25	.32				.19
34	26		.49			.38
35	27	.34				.28

36	28	.38				.25
38	29	.59				.40
39	30			.51		.40
40	31		.52			.39
41	32	.49				.29
42	33	.51				.35
43	34		.59			.44
44	35			.51		.35
45	36		.54			.40

Table 4 shows Factor matrix obtained by employing Varimax rotation showing that four factors comprising of 36 items were extracted based on Kaiser criterion (Eigenvalues > 1) which explained 34.27 % of the total variance. It was found that only 36 items supported the factor pattern and were retained. The rest were excluded from the factor matrix. Content analysis of the items of four factors supported the proposed model of Luthans, Youssef-Morgan, and Avolio (2015).

Phase II: Establishment of Psychometric Properties of Personal Resource Inventory

Table 5
Inter-correlation of four subscale's scores of Personal Resource Inventory with the total score of Personal Resource Inventory (PRI) (N = 451)

Scale & Subscales	Optimism	Resilience	Hope	Self-efficacy	PRI
Optimism					.86**
Resilience	.51**	-			.79**
Hope	.58**	.47**	-		.77**
Self-efficacy	.58**	.49**	.46**	-	.76**

***p < .01*

Table 5 shows all the four factors to be integral dimension and significant contributors to the inventory.

Reliability Analysis of Personal Resource Inventory

Table 6
Internal Consistency, Test-Retest and Split Half Reliability of Personal Resource Inventory

Internal Consistency Personal Resource Inventory (N= 451)	*α*	.89*
Internal Consistency Optimism (N=451)	*α*	.77*
Internal Consistency Resilience (N=451)	*α*	.77*
Internal Consistency Hope (N=451)	*α*	.67*
Internal Consistency Self-Efficacy (N=451)	*α*	.67*
Test-Retest Reliability (N=80)	*r*	.80*
Guttman Split-Half Coefficient *(N= 451)*	*r*	.83*

*p <.05

Validity Analysis of Personal Resource Inventory

Table 7
Demographic Characteristics of the Participants (N=80)

Variables	**Category**	***f***	**%**
Gender	Male	43	54
	Female	37	46
		M	***SD***
Age		27.9	6.1

Table 8
Construct Validity (i.e., Convergent Validity) of Personal Resource Inventory

Variables	**WEMWBS**	**DASS**
Personal Resource Inventory	.57**	-.55**
Optimism	.40**	-.54**
Resilience	.66**	-.37**
Hope	.35**	-.40**
Self-Efficacy	.43**	-. 46**

** $p < .01$

DISCUSSION

The purpose of this present study was to develop, investigate the factor structure, and establish the psychometric properties of indigenous Personal Resource Inventory. A four factor model by Luthans, Avey, Avolio, Norman and

Combs (2006) and supported later by Luthans, Youssef-Morgan, and Avolio (2015) and Avey (2014) and whose historical roots are found in Park, Peterson and Seligman (2004) as well as Fredrickson (2011) work based the conceptual framework of this study. The 45 items were generated through empirical method and was subjected to item-total correlation and factor analysis in order to gauge the dimensionality of the items. It was found that 36 items supported the factor pattern and proposed a four dimension matrix structure (Table 3 & 4). Content analysis of the items revealed them to be thematically similar to the postulate of Luthans, Youssef-Morgan, and Avilio (2015) for optimism, resilience, hope and self-efficacy.

Further, regarding reliability analysis, the obtained Cronbach's Alpha reveals satisfactory internal consistency (Table 6). Thus items are consistent with one another and measure the same thing providing the evidence that Personal Resource Inventory is a reliable measure. The findings regarding test-retest reliability of .80 (Table 6) show significant correlation between the scores of two administrations, hence, demonstrate the stability of the scores overtime and provide considerable test-retest reliability of the Personal Resource Inventory. The Split-half reliability score (Table 6) obtained in the present study indicates the similarity of the Personal Resource Inventory with a given time period. Thus, all three type of reliability estimates demonstrate the evidence that Personal resource Inventory is a reliable measure.

Moreover, regarding validity analysis, a correlational analysis of PRI with Warwick Edinburgh Mental Wellbeing Scale (Waqas et al., 2015) shows a significant Positive correlations whereas with Depression Scale of Depression Anxiety Stress Scale (Aslam, 2007) a significant negative correlation coefficient. Hence, from the study results it can be concluded that Personal Resource Inventory has good construct (i.e. divergent) validity and it is evidence based scientific and developable concept in Pakistani culture as well. It is entirely based on personality dimensions and significantly relates to mental well-being and depression (Asghar & Riaz, 2017) as well as to workplace stress and counterproductive workplace behaviors (Abbas & Raja, 2011; Rauf & Farooq, 2014; Zubair & Kamal, 2017). This is in line with the study of Asian researchers, Aliyev and Karakus (2015) who documented that students with higher levels of personal resource were found to be more resilient, hopeful, optimistic and self-efficacious and less susceptible to negative feelings, anxiety and burnout therefore were found less stressed and depressed.

In conclusion, Personal Resource Inventory is a valid and reliable research questionnaire in Pakistani culture. Its' usefulness may be determined for intervention programs especially designed to enhance mental health and reduce depression / stress for the sake of performance for educational, professional and clinical settings. The one limitation of the study was that the scales were self-report measures and are subject to response bias; however, the range and distribution of scores support the assumption that students answered honestly. Results may be obtained from other sample groups for example, clinical population, children of younger age and uneducated population to establish construct specification for PRI.

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