

Adaptation of the Career Key into Urdu

Sadiq Hussain

Karakoram International University

Lawrence K. Jones

Oregon, USA

Nadya Fouad

University of Wisconsin

Imran M. Ismail

Ontario, Canada

Seema Munaf

University of Karachi

Muneeb A. Khan

Lahore University of Management Sciences

The present study was conducted to translate and adapt The Career Key (Jones, 2010) to have a culturally equivalent and linguistically accurate Urdu version (Career Key Urdu) for use in Pakistan. Both versions The Career Key (Original) and Career Key Urdu were administered to a sample of 179 students from various academic institutions. The possible practice effect was controlled by administering both versions with the gap of one week. The data were analyzed in three ways: First, internal consistency was calculated through Cronbach alpha coefficients for each scale by gender and education level. Second, similarities of both versions of the Scale were established by comparing their correlations. Finally, construct validity in Pakistani culture was established by using Hubert and Arabie's (1987) Test of Random Order. Results were indicative of sound psychometric properties for the Career Key Urdu version, but Holland's hexagonal interest structure did not fit expectations. The corresponding indices of randomized test of hypothesized order for both measures were low when compared with US sample. The findings are discussed in cultural context.

Keywords: Career Key, culturally equivalent, linguistically accurate

Sadiq Hussain, Department of Behavioral Sciences, Karakoram International University, Gilgit; Lawrence K. Jones, Hood River, Oregon, USA; Nadya Fouad, University of Wisconsin, USA; Imran M. Ismail, 454 Sienna Crescent, Kitchener, Ontario, N2R1T9-Canada; Seema Munaf, University of Karachi, Pakistan; and Muneeb A. Khan, Lahore University of Management Sciences, Pakistan.

Correspondence concerning this article should be addressed to Sadiq Hussain, Department of Behavioral Sciences, Karakoram International University, University Road, Gilgit-Baltistan, Gilgit-15100, Pakistan. Email: sadiq.hussain@kiu.edu.pk; sadiqhussin1983@yahoo.com

Providing career counseling services to students and adults are important for better academic functioning and professional success and satisfaction. High school students with comprehensive school counseling programs are more academically successful and better prepared for their future (Lapan, Gysbers, & Sun, 1997). Before providing such services, it is important to understand students' area of interest by using a reliable and valid measure. Professional school counselors develop, deliver, and evaluate a comprehensive counseling program that promotes students' achievement (American School Counselor Association [ASCA], 2005, 2009). The Career Key (CK) is a career, education, and guidance tool that helps youth and adults become more self-reliant and competent in the process of career exploration and decision making (Jones, 2010). The paper-pencil version, first published by Jones (1987), consists of three sections: An assessment of Holland's (1997) six personality types (Realistic, Investigative, Artistic, Social, Enterprising, and Conventional [RIASEC]); a list of about 350 occupations organized according to RIASEC type; and "work groups" (that enable users to identify occupations that match their assessment results) concluding with suggestions for "Further Career Exploration".

As per Holland's theory (1997) there are six personality types. *Realistic* type tends to prefer ordered and systematic manipulation of objects, tools, machines, and animals. *Investigative* type values science, usually interested in investigation of physical, biological, and cultural phenomena. *Artistic* type is interested in ambiguous, free, and nonsystematic activities. *Social* type likes to work with other people, take care of them, train and instruct them. *Enterprising* type tends to be self-confident, sociable, and try to manipulate others to reach organizational objectives. *Conventional* type perceives themselves as conforming and orderly; value business and economic achievement; and like activities of manipulation, organization, and maintenance of records, documents, and data (Vicente & Fernandez, 2003).

Holland's theory also describes six types of work environments using the same RIASEC names. According to the theory, people search for environments compatible with their personality type. For example, people with a dominant Investigative personality type search for investigative environments. The degree of match between individuals' personality and their environment is called "congruence", or "Person-Environment fit (P-E fit)". The more congruent the matches, according to the theory, the more likely individuals' are to be successful and satisfied.

Research studies support the CK as a reliable and valid measure of the RIASEC types, and as a helpful career guidance tool (Jones,

2010) that has led to its translation into several languages e.g., Chinese (Ting & Jones, 2005). Although, the official language of Pakistan is English, the majority of students are instructed in Urdu, particularly, in public-sector institutes; their use and understanding of English is limited. An Urdu version of the Self-Directed Search (SDSU) does exist (Naheed, 1988), but has only been investigated with a relatively small sample of high school students (55 boys and 59 girls). This research was unpublished; no other studies have been done; and there is no professional manual.

Through availability of Urdu version of CK with professional manual, Pakistani youth and adults can have high quality career guidance and counseling services from professionals based on their interest, aptitude, and personality. This will lead to higher career satisfaction, success, and increased productivity, as studies show a positive correlation between aptitude and work satisfaction and job performance (Schneider, Reichers, & Mitchell, 1982) and between interest and job satisfaction (Marguerite & Philip, 1952). Studies also show P-E fit or congruence between RIASEC personality and work environment affect job performance (Nye, Su, Rounds, & Drasgow, 2012) and college success (e.g., Tracey & Robbins, 2006). Translating, adapting, and validating CK into Urdu is beginning of a planned effort to stimulate the growth of career guidance and research in Pakistan.

Method

The present study was conducted in two phases.

Phase-I: Translation of the CK

The translation of the CK occupational titles and statements was done by four subject matter experts having good command over both languages i.e., English and Urdu. They were a career counselor, psychiatrist, and two clinical psychologists.

Independent subject matter experts who had not previously seen the CK back translated the initial Urdu translation into English. The experts included a counselor, a professor of psychology, and two clinical psychologists.

The back translated version was then compared with original CK by a senior clinical psychologist, who was guided by the question: How well does the translation match the original item?

The best items were then merged together to create the Career Key Urdu (CKU). These were the items that best represented in Urdu the idea and meaning of the original item. These judgments were made by a senior clinical psychologist who was subject matter expert, had good command over both languages, and had extensive experience in the field of translation of psychological measures and materials from English into Urdu. She was also working as a consultant clinical psychologist and research supervisor at post-graduate level (recognized by Higher Education Commission of Pakistan).

Phase-II: Validation Study

Participants. The target population was divided into three levels on the basis of Pakistani educational system including under-matric, intermediate, and university students that correspond to grade 9 and 10; 11 and 12; and first semester undergraduates, respectively, as per international standards. The students were enrolled in private (89 students) and public (90 students) schools, colleges, and universities from the cities of Karachi and Lahore, Pakistan. All educational institutes were conveniently selected, but equal for both private and public sectors. The strata were designed to be representative of the people with whom the CKU was most likely to be used i.e., male/female students age between 14 to 24 years. A sample of 179 students was randomly (every fifth student from each class) drawn from schools, colleges, and universities where instruction was both in English and Urdu; all were fluent in English and Urdu to participate in this study. The sample included 94 boys and 85 girls of mean age 17.42 years ($SD = 2.14$). Out of the total participants, 55 were from under-matric category including grade 9 (14 boys & 14 girls) and 10 (14 boys & 13 girls); 56 were from the intermediate category that is grade 11 (14 boys & 14 girls) and 12 (14 boys & 14 girls); and 68 (38 boys & 30 girls) were a cross-section of first semester university students from management sciences, like management, humanities, pharmacology, biology, and chemistry. The participants were classified according to their socioeconomic class (Household Income and Expenditure Survey, Government of Pakistan, 2001). Out of total sample, 95% belonged to the middle class, 3.7% to the upper, and 1.6% to the lower socioeconomic class, with urban and literate background.

Measures. The following measures were used for data collection:

The Career Key (CK). It consists of two parts including 42 occupational titles and 24 statements. According to the author (Jones, 2010), the occupations were selected to represent the six types namely Realistic, Investigative, Artistic, Social, Enterprising, and Conventional (RIASEC). Holland (1985a, 1997) used this approach exclusively in the original measure of the RIASEC types, the Vocational Preference Inventory (VPI). Each RIASEC type is represented by 7 occupational titles; scores may range from 0 to 14 for each type. Each RIASEC type is also represented by 4 statements; scores may range from 0 to 8 for each type. Scores from occupational titles and statements are summed to create a total score for each RIASEC type; scores may range from 0 to 22 for each type. The 24 statements were drawn from Holland's theory (1985b, 1997), where he describes each type according to four characteristics: Preferred activities, competencies, self-perceptions, and values. Users rate these statements as to "how much it describes you".

In the first section of the CK, participants rate the extent to which each of 24 statements describes them using a three-point scale on which 2 = *very true of you*; 1 = *mostly true of you*; and 0 = *does not describe you*. In the second section, 42 occupations are rated using a three-point scale: 2 = *definitely interest or attract you in some way*; 1 = *might interest you*; and 0 = *any that that you are undecided about that do not sound interesting, or that you would dislike*. Results for the two sections are summed for each of the six RIASEC personality types.

The internal consistency of all domains of CK ranged from .69 to .92 and test-retest reliabilities ranged from .74 to .88. CK also had a good level of construct and criterion-related validity (Jones, 2010). According to Jones, CK is used in different cultures to assess and assist career interest and exploration including Asian countries like China (see Ting & Jones, 2005).

Career Key Urdu (CKU). It is the Urdu translated version of the CK; details are same except version is in Urdu achieved after Phase I.

Procedure. The researchers approached schools, colleges, and universities and obtained their consent to conduct the research. With management's permission, students' registration lists were consulted for random sampling of students. The selected students were then approached for the study; all of them gave their consent to participate in the study. Personal information of consenting students was gathered and then the CK was administered to them in a classroom. One week later, they took the CKU (in order to minimize any possible practice

effects but the order of presentation was same and we didn't control the order effect). Participants reserved the right to withdraw from the study at any time during the administration of the CK and CKU. Out of total data collected, data of 11 participants were not included in the final sample because they were absent during the second administration.

Results

After the data collection, both versions of the CK were scored according to the standardized procedure as prescribed in the manual (Jones, 2010). Psychometric properties were analyzed in three ways; first, the internal consistency was determined using Cronbach's alpha for each scale by gender and educational level (shown in Table 1 & 2).

Table 1

Means, Standard Deviations, and Cronbach Alpha for CKU by Education Level

Scales	Overall		University		Intermediate		Under-Matric	
	<i>M(SD)</i>	α	<i>M(SD)</i>	α	<i>M(SD)</i>	α	<i>M(SD)</i>	α
R	8.46(4.18)	.73	8.22(3.90)	.73	9.52(4.38)	.73	7.63(4.16)	.76
I	11.73(4.62)	.74	11.60(5.12)	.80	13.05(4.09)	.71	10.56(4.18)	.69
A	9.88(5.62)	.76	11.05(5.43)	.83	9.49(5.79)	.86	8.81(5.65)	.86
S	12.00(3.95)	.73	11.78(4.06)	.77	13.69(3.66)	.70	10.56(3.50)	.67
E	10.13(4.39)	.73	10.49(3.91)	.69	11.05(4.75)	.78	8.76(4.32)	.76
C	8.50(4.40)	.74	7.68(4.08)	.76	9.50(4.94)	.82	8.54(4.07)	.73

Note. R = Realistic; I = Investigative; A = Artistic; S = Social; E = Enterprising; C = Conventional.

Internal consistencies of participants' responses for the RIASEC scales are in the acceptable range with respect to educational level. For overall sample, there is the highest level of Cronbach's alpha for Artistic subscale and the lowest for Realistic, Social, and Enterprising. The highest mean is in Social subscale and the highest standard deviation is of Artistic subscale. The lowest mean is in Conventional type and the lowest standard deviation in Realistic type (Table 1).

The internal consistencies (Table 2) of participants' responses for the RIASEC scales are in the acceptable range with respect to gender. For both men and women the highest Cronbach's alpha is in Artistic type. Men have the highest mean score in Social type, while women

have the highest score in Investigative type. Both men and women have the highest standard deviation in Artistic type.

Table 2

Means, Standard Deviations, and Cronbach Alpha for CKU by Gender

Scales	Men		Women	
	<i>M(SD)</i>	α	<i>M(SD)</i>	α
R	9.97(4.02)	.69	6.76(3.69)	.68
I	11.73(4.78)	.79	11.72(4.46)	.79
A	8.48(5.47)	.84	11.47(5.48)	.85
S	12.30(4.34)	.80	11.64(3.45)	.71
E	10.77(4.50)	.78	9.40(4.15)	.71
C	9.52(4.69)	.81	7.35(3.75)	.68

Note. R = Realistic; I = Investigative; A = Artistic; S = Social; E = Enterprising; C = Conventional.

Second, cross-language equivalence was analyzed by computing the correlations between CK and CKU as shown in Table 3. The respective scales for CK and CKU are significantly positively correlated with each other.

Table 3

Correlations between the RIASEC Scales for the CK and CKU for all Groups of Sample

Scales	General	University	Intermediate	Under- Matric	Men	Women
R	.86	.81	.84	.86	.82	.80
I	.89	.87	.82	.90	.84	.91
A	.89	.82	.90	.90	.84	.87
S	.85	.73	.87	.81	.81	.81
E	.89	.85	.89	.82	.88	.87
C	.90	.84	.88	.91	.87	.87

Note. R = Realistic; I = Investigative; A = Artistic; S = Social; E = Enterprising; C = Conventional.

All values are significant at $p < .01$.

Finally, we evaluated the extent to which the structural relations between the RIASEC types for the CKU matched those of the CK. According to Holland's theory, the RIASEC personality types are related to each other in a circular order of R-I-A-S-E-C (often called the hexagonal model), and types that are more proximal are more

similar than types that are more distant. The correlations between the CK and CKU scales are shown in Figure 1, along with those of a previous study of the CK using a U.S. sample (Jones, 1990).

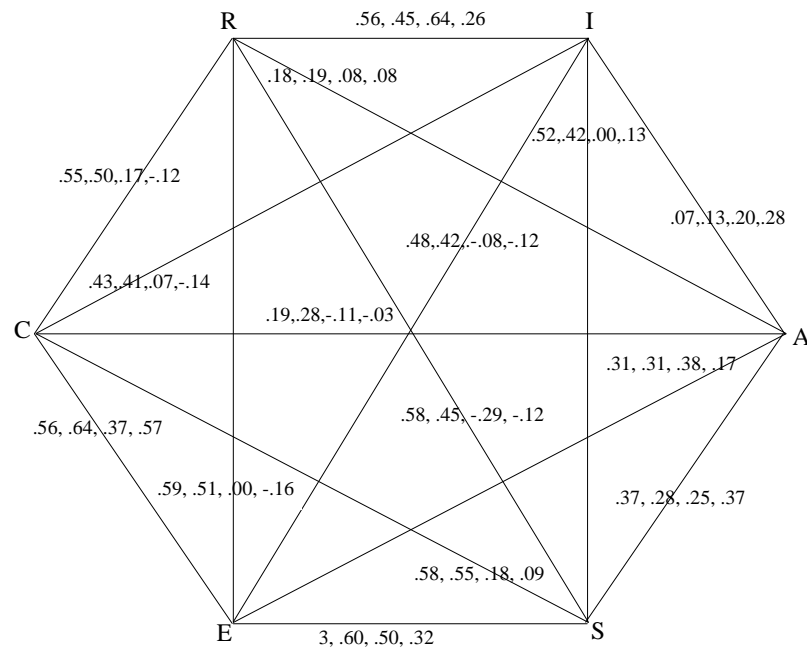


Figure 1. Correlations from left to right CKU, CK (for Pakistani sample), CK, & Vocational Preference Inventory (VPI) (for U.S. sample, Jones, 1990) for Holland's hexagonal model.

We first evaluated whether the pattern of correlations for the CK and CKU were significantly different from random by using Hubert and Arabie's (1987) Test of Random Order. This test evaluates whether the pattern of correlations conforms to the circular structure of relations among the types asserted by Holland's theory. For example, the correlations between Realistic and Investigative scales are expected to be higher than the correlation between Realistic and Artistic scales; similarly, the correlation between Realistic and Artistic types is expected to be higher than the correlation between Realistic and Social types. The Test of Random Order results in a Correspondence Index (CI). When the CI is low, the pattern of

correlations is random and no further structural analyses are to be conducted.

Table 4

Summary of the Randomization Test on the Circular Order Hypotheses on Each of the Groups of Samples for RIASEC of CKU and CK

Sample	n	Number of Predictions	CKU		CK	
			Met	CI	Met	CI
Overall	179	72	42	.16	41	.13
Men	94	72	45	.25	42	.16
Women	85	72	37	.02	39	.08
University	68	72	42	.16	44	.22
Intermediate	56	72	41	.13	37	.02
Under-Matric	55	72	42	.16	41	.13

As reported in Table 4, all of the correspondence indices for the CK and CKU are nonsignificant ($p > .05$) indicating a random ordering of correlations among the RIASEC types. The structure of interests for Pakistani students does not fit with Holland's theoretical expectation. Finally, we compared our results with Jones' (1990) findings for cross-cultural analysis in Table 5.

Table 5

Summary of the Randomization Test on the Circular Order Hypotheses on Pakistani and American Samples

Sample	Scale	Number of Predictions	Number of Predictions Met	CI
Pakistani	CKU	72	42	.16
Pakistani	CK	72	41	.13
U.S.A.	CK	72	66	.83
U.S.A.	VPI	72	58	.61

Note. The CK and VPI data for American sample is reproduced for comparison with CKU and CK data for Pakistani sample after permission from author (Jones, 1990).

CI of both CKU and CK for our Pakistani sample are very low as compared to the CK and VPI indices for American sample.

Additionally, as shown in Table 6, gender differences were also found for RIASEC scales of CKU.

Table 6

Gender Differences in Each Type of CKU for General Sample

Scales	Boys (<i>n</i> = 94)	Girls (<i>n</i> = 85)	<i>t</i> (177)	95% CI		Cohen's <i>d</i>
	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)		<i>LL</i>	<i>UL</i>	
Realistic	9.9(4.7)	6.7(3.7)	5.4**	2.1	4.3	.78
Investigative	11.7(4.7)	11.7(4.4)	.01	1.3	1.3	.00
Artistic	8.4(5.4)	11.4(5.4)	3.6**	4.6	1.4	.53
Social	12.3(4.3)	11.6(3.4)	1.1	0.5	1.8	.18
Enterprising	10.7(4.5)	9.4(3.4)	2.1**	.09	2.6	.30
Conventional	9.5(4.6)	7.3(3.7)	3.3**	.9	3.5	.50

Note. CI = Confidence Interval; LL = Lower Limit; UL = Upper Limit.

***p* < .01.

Table 6 shows gender differences in each types of CKU, a significant gender difference is found in Realistic, Artistic, Enterprising, and Conventional types. Male students have a significantly higher interest in Realistic, Enterprising, and Conventional types of CKU, while female students show higher level of interest than male students in the Artistic type.

Discussion

The primary goal of this study was to develop a valid and reliable equivalent of the CK in Urdu, and this was largely achieved. The CKU has a good level of reliability as indicated by its acceptable range of internal consistency estimates (alphas ranged from .73 - .76 for general representative sample) and the correlations between the RIASEC scales for English and Urdu versions of the CK are positive and strong, ranging from .85 to .90 for general representative sample. The CKU is a valid instrument in the sense that it measures what the CK measures among a Pakistani population.

These findings are consistent with other research conducted in different cultures, especially in Asian societies, where a valid measure of Holland's RIASEC, like the CK, in Hong Kong (Ting, 2007, 2009; Ting & Jones, 2005), India (Leong, Austin, Sekaran, & Komaraju, 1998), and Korea (Tak, 2004). These are positive findings as these instruments are being adapted and translated all over the world.

However, when we evaluated the extent to which the structural relations between the RIASEC types for the CKU matched Holland's (1997) theoretical expectations, for Pakistani sample, the correspondence indices of randomization test of hypothesized order for CKU and CK were very low when compared to U.S. samples for CK and VPI (Jones, 1990).

These results parallel those of Tracey, Watanabe, and Schneider (1997), who have raised questions about the cross-cultural structural equivalence of the RIASEC model. They reported .92 CI for a U.S. sample and a relatively lower CI for their Japanese sample (.69). Farh, Leong, and Law (1998) also reported low CI for Hong Kong sample (.61) as compared to U.S. sample. In Pakistan, Khan and Alvi (1990) and Kiani (2011) found that the structure of interest is not identical with US context. In South Africa, Toit and Bruin (2002) also found that Holland's circular order model may not be valid for black South African youths. In Hong Kong, according to Farh et al. (1998), the structure of interest data did not support Holland's circumplex model as well as circular order model: 57 of 72 predictions were consistent with the circular order model, but CI was much lower than US data.

Although, it is difficult to establish the possible reasons behind these findings in Pakistan where few studies have been done, the role of cultural differences needs to be seriously considered. According to Leong (1997), cultural context variables are very important in the study of cross-cultural career psychology. Cultural influence upon Holland's model reported by Farh et al. (1998), where data from the low traditionality group of participants who prefer modern values, fit Holland's circular order model better than the data from high traditionality participants who prefer traditional values.

In addition to possible cultural influence, several socioeconomic factors influence young generation's decision making regarding their career i.e., Pakistan is developing country with high level of unemployment, poverty, and inflation rates as written by Musheer (February 24, 2011); people are dissatisfied due to unemployment, poverty, inflation, and widespread corruption, where citizens located at the lower level of Maslow's hierarchy of needs (1943) with a strong materialistic value orientation. Therefore, their career choice may be more guided by the convenience and availability of the career opportunity rather than interest and aptitude.

Gender differences were found among the RIASEC scales of the CKU, where male students scored statistically higher in Realistic, Enterprising, and Conventional types of CKU, while, female students scored in Artistic type. The results found in our study correspond to

the findings of other studies that were conducted in the Pakistani society (Khan & Alvi, 1990; Kiani, 2011) as well as in other societies such as in Hong Kong (Ting, 2009) and Malaysia (AlMiskry, Bakar, & Mohamed, 2009). According to Tomlinson and Evans (1991), gender difference was also found in a Realistic theme of Strong Interest Inventory. Gender difference in artistic careers was noted by Sara (2010) to be a result of the tendency of women to be field dependent.

The gender differences in career interest may be a result of a multitude of factors, both internal and environmental. For instance, according to Betz (1994), occupational stereotype is one such factor that influences the career interest of genders; hence, men are the primary bread earners in Pakistani society, therefore, they select higher paying occupations in Realistic and Enterprising occupations as compared to Artistic careers which are relatively low paying occupations in Pakistan, as reported by Nasir (2005) gender has a role in the labor market and men sorted out in high paying-occupations. Additionally, some parts of Pakistani society seem to be less accepting of female participation in the work force. A limited number of women are present in different industries including agriculture as compared to men. A male-female earning gap is also seen which was much larger in rural areas, although, it had dropped from 63.27% in 1979 to 33.09% in 1985-86 (Ashraf & Ashraf, 1993).

In summary, facilitating students' understanding of their interests and personality is a basic step in career exploration. In this process, it is important that they have a valid and reliable instrument and one that is easily understood and administer. The CKU appears to meet these criteria well. Even so, further research work is recommended, especially, in understanding the structural relationship for the RIASEC types in Pakistan.

In addition to its importance for Pakistani culture, the present study also has some limitations that we would like to acknowledge here. The sample of the present study is relatively small and it's not representative of all four provinces of Pakistan and Gilgit-Baltistan because the study was conducted only in Karachi and Lahore cities of Pakistan. Furthermore, we did not document test-retest reliability, discriminant, and convergent validity. Therefore, it is recommended that a study should be conducted over a large number of samples from all four provinces of Pakistan including Gilgit-Baltistan in order to determine the CKU's test-retest reliability, convergent, and discriminant validities, so that its generalizability would be increased in the respective culture.

References

- AlMiskry, A. S., Bakar, A. R., & Mohamed, O. (2009). Gender difference and career interest among undergraduates: Implications for career choices. *European Journal of Scientific Research*, 26(3), 465-469.
- American School Counselor Association (2005). *The ASCA national modal: A framework for school counseling program* (2nd ed.). Alexandria, VA: Author
- American School Counselor Association (2009). *The role of the school professional counselor*. Retrieved from <http://www.schoolcounselor.org/content.asp?pl=325&sl=133&contentid=24>
- Ashraf, J., & Ashraf, B. (1993). An analysis of the male-female earning differential in Pakistan. *The Pakistan Development Review*, 32(4), 895-905.
- Betz, N. E. (1994). Self-concept theory in career development and counseling. *The Career Development Quarterly*, 43, 32-41.
- Farh, J. L., Leong, F. T. L., & Law, K. S. (1998). Cross-cultural validity of Holland's model in Hong Kong. *Journal of Vocational Behavior*, 52, 435-440.
- Holland, J. L. (1985a). *Vocational Preference Inventory (VPI) Manual*. Odessa, FL: Psychological Assessment Resources.
- Holland, J. L. (1985b). *Making vocational choices* (2nd ed.). Englewood Cliffs, NJ: Prentice-Hall.
- Holland, J. L. (1997). *Making vocational choices: A theory of vocational personalities and work environments* (3rd ed.). Odessa, FL: Psychological Assessment Resources.
- Hubert, L., & Arabie, P. (1987). Evaluating order hypotheses within proximity matrices. *Psychological Bulletin*, 102(1), 172-178.
- Jones, L. K. (1987). *The Career Key*. Chicago: J. G. Ferguson.
- Jones, L. K. (1990). The Career Key: An investigation of the reliability and validity of its scales and its helpfulness to college students. *Measurement and Evaluation in Counseling and Development*, 23(1), 67-76.
- Jones, L. K. (2010). *The Career Key Manual* (2nd ed.). Hood River, OR: Career Key.
- Khan, S. B., & Alvi, S. A. (1990). A study of the validity of Holland's theory in a non-western culture. *Journal of Vocational Behavior*, 36, 132-146.
- Kiani, S. (2011). Vocational aspirations of high-school students. *FWU Journal of Social Sciences*, 5(2), 14-23.
- Lapan, R. T., Gysbers, N. C., & Sun, Y. (1997). The impact of more fully implemented guidance program on the school experiences of high school

- students: A statewide evaluation study. *Journal of Counseling and Development*, 75(4), 292-302.
- Leong, F. T. L. (1997). Cross-cultural career psychology: Comment on Fouad, Harmon, and Borgen (1997) and Tracey, Watanabe, and Schneider. *Journal of Counseling Psychology*, 44, 4, 355-359.
- Leong, F. T. L., Austin, J. T., Sekaran, U., & Komarraju, M. (1998). An evaluation of the cross-cultural validity of Holland's theory: Career choices by workers in India. *Journal of Vocational Behavior*, 52, 441-455.
- Marguerite, S. G., & Philip, H. K. (1952). Relationships of aptitude, interest, performance, and job satisfaction of IBM operators. *Personnel Psychology*, 5(3), 207-212.
- Musheer, S. (February 24, 2011). Pakistan does not need a revolution. *The Express Tribune*. Retrieved from <http://blogs.tribune.com.pk/story/4550/pakistan-does-not-need-a-revolution/>
- Maslow, A. H. (1943). A theory of human motivation. *Psychology Review*, 50(4), 370-396.
- Naheed, M. (1988). *An Urdu translation and cultural adaptation of the Self-Directed Search in Pakistan* (Unpublished M.Phil dissertation). National Institute of Psychology, Quaid-i-Azam University, Islamabad, Pakistan.
- Nasir, A. M. (2005). An analysis of occupational choice in Pakistan: A multinational approach. *The Pakistan Development Review*, 44(1), 57-79.
- Nye, C. D., Su, R., Rounds, J., & Drasgow, F. (2012). Vocational interests and performance: A quantitative summary of over 60 years of research. *Perspectives on Psychological Science*, 7, 384-403.
- Sara, S. S. (2010). Effects of learning styles on career preferences of senior secondary school students in Jigawa State. *Edo Journal of Counseling*, 3(1), 132-143.
- Schneider, B., Reichers, A. E., & Mitchell, T. M. (1982). A note on some relationships between the aptitude requirements and reward attributes of tasks. *Academy of Management Journal*, 25(3), 567-574.
- Tak, J. (2004). Structure of vocational interests for Korean college students. *Journal of Career Assessment*, 12, 298-311.
- Ting, S. R. (2007). Comparing the Chinese Career Key and the self-directed search with high school girls in Hong Kong. *Journal of Career Development*, 34(2), 192-209.
- Ting, S. R. (2009). A preliminary study on the effectiveness of the Chinese Career Key Online. *The Career Development Quarterly*, 58, 77-81.
- Ting, S. R., & Jones, L. K. (2005). The development and field testing of the Chinese Career Key among high school and college students in Hong Kong. *International Journal for Educational and Vocational Guidance*, 5, 281-292.

- Toit, R., & Bruin, G. P. (2002). The structural validity of Holland's R-I-A-S-E-C model of vocational personality types for young black South African men and women. *Journal of Career Assessment, 10*(1), 62-77.
- Tomlinson, S. & Evans, H. (1991). Gender, ethnicity, and college students' responses to Strong-Campbell Interest Inventory. *Journal of Counseling and Development, 70*(1), 151-155.
- Tracey, T. J., & Robbins, S. B. (2006). The interest-major congruence and college success relation: A longitudinal study. *Journal of Vocational Behavior, 69*, 64-89.
- Tracey, T. J., Watanabe, N., & Schneider, P. L. (1997). Structural invariance of vocational interests across Japanese and American cultures. *Journal of Counseling Psychology, 44*, 346-354.
- Vicente, J. M. M., & Fernandez, F. V. (2003). Study and analysis of the Position Classification Inventory (PCI) by Gottfredson and Holland. *Electronic Journal of Research in Educational Psychology and Psychopedagogy, 1*(1), 121-136.

Received September 09, 2013

Revision received December 09, 2014