



# A Confirmatory Factor Analysis of the Career Locus of Control Scale with Secondary School Students in Kenya

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### ABSTRACT

This article presents the confirmatory factor analysis of the 20 item career locus of control scale with a sample of 370 secondary school students. The instrument consists of 4 subscales measuring Internality, Luck, Helplessness, and Powerful Others. The overall internal reliability of the locus of control scale was satisfactory. The current study tested six models and verified four of the six models. External locus of control scores correlated significantly with measures of career decision self-efficacy, career indecision and vocational identity. Internal locus of control scores correlated significantly with career decision making self efficacy. Significant gender differences were noted in most of the subscales of career locus of control with males scoring significantly higher on the subscales measuring externality and females scoring significantly higher on the subscales measuring internality. Age was not related to any of the sub scales. The current study provides the validity data for the career locus of control scale using a Kenyan sample. Based on the results, other researchers may use the instrument to measure the career locus of control of Africans.

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### Introduction

Psychological factors play an important role in shaping attitudes and behaviours of individuals. Among these psychological factors is locus of control. Locus of control (LoC) is one of the most widely studied attitudinal constructs. It was first conceptualised by Rotter (1954). He defined locus of control as a general expectancy regarding one's own behaviour, efforts or characteristics and reinforcement. According to Rotter (1966) locus of control guides people's motivation and behaviour in almost all situations. There are two types of locus of control: internal and external locus of control. Rotter (1975) proposed that individuals fall along a continuum ranging from internal to external locus of control. According to Miller and Shevlin (2007), internal locus of control can be defined as the expectancies held by adolescents related to how projected career outcomes are perceived to be within their personal control through behaviour and decision making whereas an external career locus of control refers to expectancies relating to how career related outcomes are contingent on factors outside of their personal sphere of behaviour such as luck, fate, chance and powerful others.

As a psychological variable, it has influenced the study of career decision making (Brown & Rector, 2008). According to Fournier and Jeanvie (1999), a large number of studies have associated one's locus of control with one's capacity to make career decisions. scholars in the field of career development have generally concluded that an internal locus of control or the belief that life rewards are the result of personal behaviour is linked with adaptive career outcomes while external locus of control or the belief that rewards are dependent upon forces outside of one's own efforts are linked with maladaptive career outcomes (Perry, Liu & Griffin,

2011). A number of studies have associated locus of control with the capacity to make career decisions. For example, Santos(2001) showed that the capacity to make career decisions is related to internal locus of control while career indecision is associated with external locus of control. Internal locus of control has been associated with greater initiative when looking for career information, less decision making difficulties and career adaptability (Lease 2004; Duffy 2010).

Gotfredson's (2002) theory of circumscription and compromise proposes that LoC may also vary as a function of developmental stage. He proposes that children in early teen years are mainly influenced by internal factors such as interests when making career decisions. They however become increasingly realistic about personal attributes, talents, interests as they enter adolescence and thus become less governed by occupational prestige. In a sample of 308 students attending an urban high school in the United States, Perry, Liu and Griffin (2011) found that External locus of control was negatively correlated to age there was however no significant relationship between internal locus of control and age.

Males have been found to experience higher levels of external locus of control when making career decisions compared to females. According to Perry & Vance (2010) Males tend to circumscribe their range of occupational choices. In a sample of college dental students in India, Acharya (2008) did not find any significant gender differences in internal locus of control there was however a significant gender difference for external locus of control with males scoring high on external locus of control than females. In yet a another sample of 433 African American and

white college students, Lease (2004) found significant gender differences in locus of control of students using Career Locus of Control Scale by Trice et al., 1989. Men scored significantly higher than their female counterparts implying that males possess more external locus of control than their female counterparts.

### The current study

Millar and Shevlin (2007) developed a career locus of control scale to measure the career attitudes of adolescents. They proposed and tested four models which included a one-factor model, two factor model, three-factor model and a four-factor model. Only three of these models revealed good fit indices. The purpose of the current study is to replicate their study by testing the five models which they identified using a sample of secondary school students from Kenya and to include other career related measures to test for convergent validity.

### Method

The study sample consisted of 370 students (162 male and 197 female) from both private and public secondary schools in Kisumu, Kenya. Eleven of the participants did not indicate their gender. Their ages ranged from 14 – 28. The mean age of the participants was 16.5. Twenty four point five percent of the participants were enrolled in year one, 24.3% were enrolled in year two, 31.9% were enrolled in year three and 17.0% were enrolled in year four.

### Instruments

*Career Locus of Control Scale:* The Career Locus of Control Scale (CLCS; Millar & Shevlin, 2007) was used to measure career locus of control of the respondents. The scale consists of 20 items measuring both internal and external locus of control. Santos and Ferreira (2012) reported an internal consistency coefficient of .69. The reliability coefficients for the current study were .77 for all the 20 items, .71 for internal locus of control and .84 for external locus of control, .71 for Luck, .71 for powerful others, .73 for helplessness and .83 for non-control.

*Career Decision:* The Career Decision Scale (CDS; Osipow et al, 1976) was used to measure career indecision of the students. The scale contains 19 items which consists of two subscales. 16 items form the indecision subscale while 2 items measure the degree of certainty felt in having made a career decision. Osipow et al (1996) reported a two week test retest reliability of .90 and .81. Wang et al (2006) reported a Cronbach's alpha of .91. Patton and Creed (2007) reported .89. The reliability coefficient for the current study was .74.

*Career Decision Making Self Efficacy:* The Career Decision Making Self Efficacy Scale (CDSSES-SF; Betz, Klein, & Taylor, 1996) was used to assess the career decision making self efficacy of students the study. This instrument measures an individual's degree of belief that he/she can successfully complete tasks necessary for career decisions. It consists of 25 items and has five subscales which measure self-appraisal, occupational information, goal selection, career planning and problem solving. Sample items include: 'How much confidence do you have that you could accurately assess your abilities' and 'How much confidence do you have that you could determine the steps you need to take to successfully complete your chosen career'. Nilsson, Schmidt, and Meek (2002) reported reliability coefficients of .83 and Koumoundourou reported Cronbach's alpha of .91. The reliability coefficient for the current study was .82.

*Vocational Identity:* Vocational identity of the students was measured using the Vocational Identity Scale (VIS;

Holland, Daiger & Power, 1980) which consists of 18 items. This scale measures the possession of clear and stable picture of one's goals and interest. Sample items include: 'I am uncertain about what occupations I would enjoy' and 'making up my mind about a career has been long and difficult'. Holland, Daiger & Power (1980) reported internal consistency reliability ranging from .86 to .89. Wang et al reported .85 and Koumoundourou reported Cronbach's alpha of .75. The reliability coefficient for the current study was .71.

### Results

A series of six confirmatory factor models were specified and estimated via maximum likelihood method, using Amos 20. Goodness of fit was assessed using the following indicators:- Goodness of Fit Index (GFI), Incremental Fit Index (IFI), the Comparative Fit Index (CFI) and the Root Mean Square Error of Approximation (RMSEA). For GFI, IFI and CFI the rule of thumb suggests that a value >.90 is good, and a value >.95 is very good. For RMSEA the rule of thumb suggests that a value <.01 is excellent, <.05 is good, <.08 is acceptable. For the model to qualify as having a good fit the chi square would be non-significant indicating no significant discrepancy between model and data. In most cases this does not happen. As a result, the chi square most of the time indicates a poor model especially when the sample size is large.

Millar and Shevlin (2007) conducted an exploratory and confirmatory factor analysis and came up with four alternative factor models of which three revealed an acceptable fit. Perry, Liu and Griffin (2011) on the other hand tested the four models with a sample on 301 American adolescents and only two revealed an acceptable explanation for the data. They proposed a fifth and sixth model which also revealed acceptable explanation for the data

Model 1 was based on a single factor (locus of control) which consisted of 20 items. Model 2 was based on a two factor model (Internal and externality), 5 of the items loaded on internal locus of control while 15 of the items loaded on external locus of control. Model 3 was based on a 3 factor model of internality, luck and powerful others with 5 items loading on each of the factors. Model four was based on a four factor model of internality, luck, helplessness and powerful others with 5 items loading on each of the factors. The fifth model was represented by a three factor model of internality, luck and non-control with 5 items loading on internality, 5 on luck and 10 on non-control. The last model was based on a three factor model on internality, luck, and helplessness with 5 items loading on each factor.

In the present study model 1 and model 2 showed poor fit however model 2 was a better fit than model 1 this was contrary to the findings by Millar and Shevlin (2007) which found model 2 as having an acceptable fit. The findings were however similar to those reported by Perry, Liu and Griffin (2011). Models 3, 4, 5 and 6 showed acceptable fit however model 6 was a better fitting model. The results are presented in Table 1.

Bivariate correlations between the factors for each model are presented in Table 2. There were weak negative correlations between variables in model 2 (internality and externality). For variables in model 3, there were moderate correlations between luck and powerful others and between internality and powerful others. There was however a non-significant relationship between internality and luck. For variables in model 4, there was a strong relationship between

helplessness and powerful others and moderate correlations among the other variables. For the variables in model five, there was a relatively strong correlation between luck and non-control and a moderate relationship between non-control and internality.

### Convergent Validity

Internality was moderately correlated to career decision making self efficacy but was not significantly correlated to vocational identity and career indecision. . Eternality was moderately negatively correlated to career decision making self efficacy and vocational identity and significantly negatively correlated to career indecision. Age was not significantly correlated to any of the variables. The results are presented in Table 3.

### Gender and career locus of control

There were significant gender differences in all the subscales of career locus of control with the exception of luck subscale. Males scored significantly higher than females in all measures of externality while females scored significantly higher than males on internality. The results are presented in Table 4.

### Discussion

Internal consistencies for all the subscales across all the models were acceptable. Model 6 emerged as the best fitting model however the present results are in agreement with Perry, Liu and Griffin (2011) that model 5 is the most suitable

since it contains all the 20 items hence it measures more variation. Significant gender differences were noted in all the subscales of career locus of control except for the subscale of Luck. As noted, males scored significantly higher on the subscales measuring externality while females scored significantly higher in the subscale of internality. According to Stocks, April and Lynton (2012), over the years, women have exhibited more external locus of control due to their historical gender roles however, the present results suggest otherwise. It is likely that females have been empowered and now believe that it is important to be well prepared for the job market.

It is worth noting that as previously reported by Perry, Liu and Griffin (2011) a two factor model measuring internality and externality may not be the most appropriate. Having an internal locus of control was positively linked to career decision making self efficacy implying that the belief that one's career outcome is a result of their own individual effort is positively associated with having greater confidence to make career related decisions. A greater external locus of control was however positively associated with greater inability to make career indecisions. Implying that those who believe that their career outcomes are dependent on external factors tend to experience more problems when it comes to making career decisions. they also tend to be less confident in making career decisions.

**Table 1: Fit Indices for Tested Models of Career Locus of Control**

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
$\chi^2$	838.06	493.18	155.07	261.43	270.08	139.06
df	170	169	88	164	168	87
Sig	.00	.00	.00	.00	.00	.00
GFI	.77	.86	.95	.93	.93	.95
IFI	.62	.87	.94	.95	.93	.96
CFI	.62	.81	.94	.94	.94	.96
RMSEA	.10	.07	.06	.04	.04	.04

**Key:** model 1 is a one-factor model (Locus of Control); Model 2 is a two factor model (Internality and Externality); Model 3 is a three-factor model (Internality, luck and powerful others); Model 4 is a four- factor model (Internality, luck, powerful others and helplessness); model 5 is a three factor model (Internality, luck and non-control); model 6 is a three factor model (Internality, luck and helplessness).

**Table 2: Bivariate Correlations among Measured Variables**

	1	2	3	4	5	6
Luck	1					
Helplessness	.35**	1				
Powerful Others	.37**	.64**	1			
Non-Control	.40**	.90**	.91**	1		
Internality	.09	-.29**	-.26**	-.30**	1	
Externality	.73**	.82**	.84**	.92**	-.19**	1

Key: \*<.05; \*\*<.01

**Table 3: Bivariate Correlations among Internality, Externality and Other Career Related Variables**

	1	2	3	4	5	6
1	Internality	1				
2	Externality	-.19**	1			
3	CDMSE	.18**	-.20**	1		
4	VI	.06	-.25**	.08	1	
5	CI	-.06	.32**	-.20**	-.42**	1
6	Age	.08	.07	.13	.02	.02

Key: \*<.05; \*\*<.01

**Table 4: Means, Standard Deviations and for the Career Locus of Control Subscales**

	Male			Female			Total			t
	N	M	SD	N	M	SD	N	M	SD	
Luck	162	14.57	4.52	197	13.96	4.58	359	14.26	4.57	1.26
Helplessness	162	11.66	4.40	197	10.02	4.14	359	10.75	4.33	3.61**
Powerful Others	162	11.67	4.24	197	10.32	4.42	359	10.92	4.38	2.95**
Non-Control	162	23.33	7.81	197	20.34	7.77	359			3.62**
Internal LoC	162	20.36	4.15	197	21.74	3.28	359	35.93	10.56	-3.52**
External LoC	162	37.90	10.53	197	34.30	10.36	359	21.13	3.75	3.25**

### Limitations of the study

The current study used a sample of high school students from a small part of Kenya and due to this, the results may not be generalized to all Kenyan secondary school students. The study also relied on self report which may not always be 100% accurate. The researcher recommends that other evidence of validity be analyzed using a larger sample of Africans which lacks in literature.

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