Feeling capable in an Ubuntu way:

Kenyan comprehensions of competence- and control beliefs

compared with the German perspective

Michaela Heinecke-Müller

Claudia Quaiser-Pohl

University of Koblenz-Landau, Koblenz

Priscilla W. Kariuki

University of Nairobi

Josephine N. Arasa

United States International University, Nairobi

Correspondence concerning this article should be addressed to Michaela Heinecke-Müller, Institute of Psychology, University of Koblenz-Landau, 56070 Koblenz, Germany.

E-mail: heinecke@uni-koblenz.de

Abstract

In Western personnel psychology, competence- and control beliefs (CCB) are of widespread use to predict typical work-related outcomes such as well-being, achievement motivation and job performance. The predictive value and comprehension of CCB in East Africa is examined, comparing a Kenyan target with a German source sample (N=143). Responses to personality tests included qualitative interviews on items capturing control orientations (self-concept of ability, internality, powerful others, and chance). Linear regression analyses, explorative factor analyses, and a procrustean target rotation showed comparable, but not fully congruent predictability for the connection of CCB with outcome variables. Factor structures of control responses did not resemble each other sufficiently. Content analyses including scale intercorrelations, quantitative and qualitative item information served for an explanation of this predictability gap, specifying differences between the German and Kenyan samples that are associated with the social-relational domain of personality. Results fit in the picture depicted by the African Ubuntu philosophy and the South African Personality Inventory project (SAPI), both emphasizing social-relational aspects. In particular, the powerful others control orientation diverges the most between the cultures. Being perceived as a negative and external factor in the German sample with its individualistic culture, powerful others is of mixed emotional quality and just as well internal, when asked for in the Kenyan sample with its Ubuntu-worldview. An uncritical transfer of CCB measures from one culture to another is assumed to be inappropriate. More emic-etic based research is demanded concerning intra- and intercultural variability of CCB to depict a transcultural applicable model.

Keywords: competence- and control beliefs, core self-evaluations, emic-etic, self-efficacy, Ubuntu, personality, transcultural, locus of control, personnel psychology

Competence- and control beliefs in transcultural human resources management

Competence- and Control Beliefs (CCB) are among the most widely used predictors in the German-speaking field of personnel psychology (Ng, Sorensen & Eby, 2006; Schuler, Höft & Hell, 2014). If not crucial, CCB are at least very important factors for any process of action, learning, development, adaptation, success, well-being and even health recovery (Skinner, 1996). This is why in personnel psychology control variables are common to amend multiple sorts of test batteries. As an experience or belief of capability, they take effect through every aspect of personality. However, CCB are still not adapted to the intercultural business context going beyond the "Western" part of the globalized world.

Kenya is an economic point of intersection with leading political power fanning-out over the regions of South-East and Central Africa. Its rapid cultural and economic development is mirrored in economic growth indexes: In 2018, Kenya`s GDP growth rate was about four times larger than Germany`s (The World Bank, 2018). Political, economic and cultural relations between the two nations trace back to the 1960s, increasing constantly (Federal Foreign Office Germany, 2019). This comes with an also increasing demand for psychological counseling in the field of personnel and personality psychology. Most available instruments, though, are referred to as being "W.E.I.R.D." (W.estern, E.ducated, I.ndustrial, R.ich, D.emocratic; Henrich, Heine & Norenzayan, 2010). They lack the combined emic-etic approach necessary for the transcultural perspective in human resources management (Cheung, van de Vijver & Leong, 2011).

As in the case of the Five Factor Model (FFM; Schmitt, Allik, McCrae & Benet-Martinez, 2007), the South African Personality Inventory project discovered several culture-specific aspects of personality in South Africa, that had not been covered yet by the Western *Big Five* (Fetvadjiev, Meiring, van de Vijver, Nel & Hill, 2015). Although a specific pan-African personality could not be discovered (Zecca et al., 2013), culture-specific personality

features belonging to the social-relational domain are approved, so far. They connect with the

African *Ubuntu* worldview: umuntu ngumunto ngabantu (Zulu-language for "A person is a

person through other persons"). This humanist philosophy, popularized by Nelson Mandela

and Desmond Tutu (amongst others), emphasizes responsibility and involvement of the

individual in the public spirit even up to the level of the surrounding universe (Swanson,

2012; Tutu, 1999, p. 35). By comparison, the W.E.I.R.D. and individualistic worldview rather

focuses on competition and self-reliance (see also Triandis, 2002). Although converging to a

globalized lifestyle in the metropolises all over the world, cultural differences shape the way

people perceive, think and act (Mwipikeni, 2018). These styles are of importance for goal

striving action such as required at work, because they influence expectancies and attributions

of control actions (Judge, Bono & Thoresen, 2003).

To date, there is still a lack of understanding for culture-specific processes forming

CCB. Although the advantages of CCB theory are widely recognized, this is still a nearly

unexplored field especially within the East-African region. The aim of the current research is

to gather first data on CCB and their functioning in Kenya compared with a German sample.

Following an emic-etic approach, this is facilitated by additional qualitative analyses on how

CCB are comprehended and then assemble in each culture.

Core self-evaluations of psychological control

As here the focus is on personality, the attention lies on more or less generalized

perceptions: Core self-evaluations (CSE; Judge, Bono & Thoresen, 2003). Two of the most

well-established concepts in this field are from Rotter (1966) and Bandura (1977). They have

been overworked several times, undergone fundamental conceptual refinements, and adapted

to diverse application fields. We are going to refer to competence- and control beliefs (CCB),

which are a part of CSE and include self-efficacy. CCB are the most up-to-date concepts in

quantifying control-related personality features and they are well-embedded into historical as well as current models (f.i. the action-theoretical partial model of personality by Krampen, 1988; Schwarzer & Jerusalem, 1995).

To sum up only a few of the supporting characteristics of CCB here, the sense of control over one's life and experiencing self-efficacy is closely related to well-being and optimism in stress appraisal over the whole life span (Brandtstädter & Renner, 1990; Luszczynska, Gutiérrez-Dona & Schwarzer, 2005). One feels comfortable and thinks positive about life (Brandtstädter, Krampen & Greve, 1987). Sensing control protects from illness and promotes recovery (Harrow, Hansford & Astrachan-Fletcher, 2009). In the working environment, we can state a gain in performance up to 28% due to an area-specific competence belief (Stajkovic & Luthans, 1998), accompanied by positive task and social experiences as well as increased job motivation (Ng, Sorensen & Eby, 2006). Crises in work life can be handled more flexible and therefore result in an improved job situation (Heinecke, 2013). CCB are responsible for goal-striving action and have wide influence on the motivation to learn and act effectively (Bandura & Locke, 2003). As traits, they are only of a medium degree of abstraction, so their predictive validity is comparatively high: Applied in the field of personnel selection and training, CCB tend to outperform "bigger" constructs such as the Big Five (Ng, Sorensen & Eby, 2006, p. 1074). Their correlations with well-being, persistence, motivation, coping, personal adjustment, achievement, and success (amongst other positive outcomes) have proven to be substantial and stable (Skinner, 1996).

Culture-specific comprehensions of control in Germany and Kenya

Competence- and control beliefs (CCB) already have shown some generality in functioning between cultures (Luszczynska, Scholz & Schwarzer, 2005; Scholz, Gutiérrez Dona, Sud & Schwarzer, 2002), but there seems to be wide variety in priority and meaning of

certain control strategies while coping with demands (Flammer et al., 1995; Luszczynska & Schwarzer, 2005; Jonas et al., 2009). As given in some Asian societies, in African populations as well there may be an emphasis on so-called collective efficacy beliefs (Maimon, Browning & Brooks-Gunn, 2010; O'Neill, McLarnon & Law, 2016). Another possibility is that there are control styles at work, that are strange to the Western mind or which recompose differently according to a culture-specific worldview (f.i. Ubuntu, see above). Such could be fatalistic or indirect forms of control carried out as religiosity or experiencing control with a socially extended self (Okeke, Draguns & Sheku, 1999). Beyond the surface of predictive validity, there is a lack of information about how a person from East Africa might comprehend certain verbalizations of control measures usually applied as questionnaires (Arasa et al., 2016). CCB theories of German origin are therefore doubted to be uncritically transferable to other cultures such as the African.

Currently, there are two psychological tests most widely used in the German language area (amongst others), both with a slightly different focus. The General Self-Efficacy Scale (GSES; Schwarzer & Jerusalem, 1995) is a ten-item unidimensional scale aiming at the belief in one's own ability to cope with somewhat unfamiliar or difficult situations as well as to overcome occuring obstacles. Although established internationally and due to its unidimensional design, this measure was deleted from the study reported below. In pretests not reported here, it has proven not to be suitable for the purpose of exploring a culture-specific comprehension with an unknown core structure and content. At the price of a three times longer item list, the Competence- and Control beliefs questionnaire (German: FKK, Krampen, 1991; English: I-SEE[1]) provides a hierarchical structure of intercorrelating, but

---

[1] From "Self-efficacy and externality in adolescence: Theoretical conceptions and measurement in New Zealand and German secondary school students", by W. Greve, A. Anderson & G. Krampen, 2001, *Identity: An International Journal of Theory and*

nonetheless distinctive scales: Self-concept of ability, internal control orientation, chance control orientation, and powerful others control orientation. But what proves to be a reliable personality profile in Germany does not necessarily work the same way in Kenya. If there are intercultural differences detectable between the two cultures, they would most likely reveal when all facets of CCB are included and analyzed separately.

For the construct of CCB applied in the region of East Afrika, this is a first attempt to compare its functioning and comprehension in two cultures, concurrently. If CCB are transferred to East Africa, are they able to predict responses to well-being, achievement motivation, and job performance marker items as they are expected to do in Germany? What culture-specific meaning is detectable behind these relationships, when applied in Kenya? Figure 1 depicts this research question. From 2017 to 2018, N=143 questionnaires and interviews were conducted around the environment of German and Kenyan universities to gather information on culture-specific personality features as following:

Hypothesis I: CCB work as a predictor for outcomes such as occupational achievement motivation, job performance and well-being. This holds true for both cultures in a comparable, but not completely congruent way.

Hypothesis II: Differences in the predictive value of CCB trace back to culture-specific item comprehension. Quantitative and qualitative item information, as well as correlational patterns obtained in Germany and Kenya altogether mirror a culture-specific perception of CCB. That is, tracing back to social-relational aspects, the conceptual organization of CCB in Germany and Kenya shows significant intercultural differences.

There is ample research indicating CCB being a universal psychological construct, undergoing subtle shifts in shaping while meeting culture-specific comprehensions (Flammer et al., 1995; Liu & Wilson, 2011). For the case of Kenya, this is a first attempt to gather information on specific CCB forms and to compare them with the German perspective. It is expected that the Ubuntu-worldview differs from the Western European in a way, that mixes up forms of CCB initially thought to be separate or opposite from each other: Social-relational aspects relocate external control items to the internal control balance. As a result, existing approaches to define and measure CCB will have to be refitted for transcultural application, providing for a content valid, reliable and fair assessment of vocational personality features in the target culture(s). This can only be achieved with an emic-etic concept, considering all levels and categories that would impact measurement equivalence (Cheung, van de Vijver & Leong, 2011).

Method

Samples

The total sample of $N=143$ consisted of a German ($n_G =52$) and a Kenyan ($n_K=91$) convenience sample, each recruited in the university environment of large cities. As a compensation for participation, German students were offered credit points for mandatory participation in university research. Kenyan subjects received 10 EU each. All subjects were informed adequately and took part voluntarily. Of the Kenyan sample, 57% agreed to do a longer test version including an additional qualitative interview on test items. In Germany, 27% of the subjects agreed to do the long version.

Procedure and measures

A questionnaire survey was conducted between 2017 and 2018 in Germany and Kenya, concurrently. On a voluntary basis, participants could take part in complementary

interviews on the applied CCB test items. In these cases, the duration of about 30 minutes was roughly doubled. The questionnaire was presented in German or English (for the Kenyan sample). In Kenya, there are about 70 regional languages spoken, with English and Kiswahili being official languages. While a Kenyan person is quite commonly fluent in three languages, the English language seemed to provide the highest comparability in consideration of the applied tests.

The entire questionnaire consisted of four sections, namely demographic questions, Competence- and Control Beliefs (CCB) scales, culture-related constructs such as the Social Axioms Scale (Leung et al., 2012) and the Social Skills Inventory (Riggio, 1986), and items to measure outcomes that are typically connected with CCB. The culture related constructs were of explorative interest and are not reported here. Demographic items aimed at gender, age, (sub-)culture, education and additional training as well as current occupation. For the reason of CCB being modifiable by actual individual experience, another item was added, asking for perceived global job controllability in the person's current occupation.

On each CCB test item (FKK, Krampen, 1991; I-SEE, Greve, Anderson & Krampen, 2001) additional three questions could be answered in an interview on item comprehension and emotional quality:

1. "Please give some spontaneous comment! What comes to your mind when you look at this question?" (explorative question, not reported here).

2. "Please explain, how you understand this question! What does it mean in your words?".

3. "Please judge this question regarding to how you feel with it! Is it of rather good or bad emotional quality – or both?".

These questions were developed a priori in a bilateral workshop of German/Kenyan experts. The original 32-item measure consists of four primary scales, each aiming at a different aspect or locus of control. As shown in figure 2, they add to higher level constructs such as internal or external control orientation.

Although intercorrelated, the control orientations on the primary level (bottom line) are conceptually independent from each other. There are aspects, which feed an internal control belief (f.i. one's own competence to act effectively even when meeting with obstacles) and there are other aspects, which feed an external control belief (f.i. effects induced by chance or powerful others). On the global level, external control is subtracted from internal (*SIPC*, as abbreviated). This common core idea of most CCB measures is in question here. The above-mentioned bilateral experts' discussions indicate, that this mirrors a typical W.E.I.R.D. worldview that is not necessarily shared by Kenyans. For example, the allocation of *powerful others* to the external side of the balance, and thus reducing the global control score, conflicts with the social-relational accent of Ubuntu-culture. The same holds true for *chance*, since in East Africa, religiosity is perceived as one major resource for coping (P. W. Kariuki in: Arasa et al., 2016, pp. 5-8) and could as well feed the internal side of the balance. Nonetheless, internal CCB are acknowledged to be of high value in both cultures, and thus expected to correspond with variables such as well-being, action and learning motivation, and performance just as they do in W.E.I.R.D. labeled cultures.

Outcomes typically connected with CCB were mostly measured using marker items from personality tests used in personnel psychology. Single items were selected by highest correlations with external criteria such as job performance and success as reported in the test manuals. Well-being was assessed by application of the entire WHO screening questionnaire (see table 1). Item scores of the LMI were added together to build an index of occupational achievement motivation. According to the BIP scales' conceptual independency of each

other, item responses were analyzed separately. For improved understanding, double

negatives were avoided in each scale applied in English.

Analyses

To test the predictability of typical outcomes on the basis of CCB (Hypothesis I),

stepwise multiple linear regression analyses were conducted, taking account of belonging to

the German/Kenyan sample by computing a parallel shift. Where appropriate, separate

analyses were conducted for the German and the Kenyan sample, respectively. Information

on item comprehension (Hypothesis II) was gathered via descriptive and inferential statistics,

qualitative data on CCB items, and explorative factor analyses (incl. Procrustean Factor

Rotation). For all procedures, compliance with the specific requirements was checked. If any

method did not meet requirements, this is reported.

Results

Sample features

Age, education and SIPC are known to be intercorrelated (Krampen, 1991). SIPC

tends to grow over the life span first, then it decreases again from the mid adulthood on

(Krampen, 1991). For better comparability of the samples and facilitating linear regression

modeling, all individuals older than 40 years were excluded from further analyses (14 from

Kenya with $M = 51$ and 5 from Germany with $M = 47$ years, resulting in the sample structure

shown in table 2).

Linear Regression Analyses

CCB and confounding variables.

A stepwise multiple linear regression was computed to predict SIPC on the basis of all

demographical variables and job controllability. In the mixed binational sample, job

controllability and belonging to Germany or Kenya were able to statistically significant predict the SIPC score ($F(2, 114) = 4870.73$, p < .001). The R^2 for the overall model was .15 (adjusted $R^2 = .13$), indicative for a moderate goodness-of-fit according to Cohen (1988). Participants' predicted SI-PC is equal to 24.96 + 16.01 * (Germany/Kenya) – 13.23 (job control), both coded dichotomously. Germans scored 16.01 points higher in SIPC than Kenyans did, and those subjects, who did not perceive their job as controllable scored 13.23 points lower than those, who did. The difference between the countries, together with the fact that residuals did not meet the requirement of being distributed normally, required separate regression analyses for both samples. In Germany, only job controllability was able to statistically significant predict SIPC ($F(1, 44) = 5.30$, $p = .026$). The R^2 for the model was .11 (adjusted $R^2 = .09$), indicating a low goodness-of-fit. The predicted SIPC raw score is equal to 74.69 – 21.55 * (job control). Germans who declined to perceive their job as controllable scored 21.55 lower in SIPC than the other group. For Kenya, only age was able to statistically significant predict the SIPC score ($F(1, 69) = 5.87$, $p = .018$) with an R^2 equal to .08 (adjusted $R^2 = .07$), indicating a low goodness-of-fit. Kenyans scored 1.12 SIPC-points higher for each year of age.

To sum up, each subsample from Kenya and Germany contributes its own confounding factors to the SIPC score observed. The German sample comes with job controllability as a predictor for CCB, whereas the Kenyan sample's CCB measure varies with age, rather.

Occupational achievement motivation.

A stepwise multiple linear regression was computed to predict the occupational achievement motivation index with SIPC, including demographical variables and job controllability. In the binational sample, no significant shift was detected between the two

cultures. SIPC was able to statistically significant predict the achievement motivation index

score ($F(2, 114) = 26.94$, $p < 0.001$). The R^2 for the overall model was .32 (adjusted $R^2 = .31$),

indicative for a high goodness-of-fit according to Cohen (1988). Participants' predicted

achievement motivation score is equal to 2.82 + 0.02 * (SI-PC) + .36 (Gender). Women

scored .36 points higher in achievement motivation than men did. Comparing the

standardized coefficients, SIPC (.57) had a more than three times higher beta weight than

gender (.17). All requirements for regression analysis were fulfilled well; only for

homoscedasticity of residuals, the scatterplot showed a slight funnel shape.

Business-focused personality features: Job performance.

For personality features indicating job performance and success, each marker item

from the BIP (Hossiep & Paschen, 1998; Paschen & Rust, 2008) was regarded separately in a

stepwise multiple linear regression analysis with SIPC, demographics and job controllability.

To predict *assertiveness* with SIPC, demographics and job controllability again were

included in a stepwise multiple linear regression analysis. Binationally, SIPC turned out to be

the only significant predictor ($F(1, 115) = 25.75$, $p < 0.001$). R^2 equals to .18 (adjusted $R^2 =$

.18) indicating a moderate goodness-of-fit. Participants' predicted assertiveness is equal to

2.84 + .023 * (SIPC). It is noteworthy to mention that residuals deviated significantly from

normal distribution. The dot plot showed non-perfect homoscedasticity.

Predicting *emotional stability* based on SIPC in a stepwise multiple linear regression

analysis in both cultures simultaneously, again SIPC exposed to be the only statistically

significant predictor ($F(1, 115) = 16.72$, $p < 0.001$). R^2 is equal to .13 (adjusted $R^2 = .12$)

indicating a low goodness-of-fit. Subjects' predicted emotional stability was equal to 2.74 +

0.02 * (SIPC).

For *leadership motivation*, SIPC is the only statistically significant predictor in the total sample. Allowed for residuals deviating from the normal distribution and the dot plot showing a rhombic shape, R^2 equals to .23 (adjusted R^2 = .23), indicating a moderate goodness-of-fit ($F(1, 115) = 34.73$, $p < 0.001$). Participants' predicted leadership motivation was equal to 2.48 + 0.03 * (SIPC).

In the case of *power motivation*, SIPC was the only significant predictor when using the total binational sample ($F(1, 115) = 8.61$, $p = 0.004$). R^2 equals to .07 (adjusted R^2 = .06) indicating a low goodness-of-fit. Participants' power motivation equals to 2.64 + .01 * (SIPC).

Predicting *action orientation* in the total sample, SIPC again is the only significant predictor ($F(1, 115) = 18.30$, $p < 0.001$) with R^2 equal to .14 (adjusted R^2 = .13) indicating a moderate goodness-of-fit. Participants' predicted action orientation equals 3.01 + 0.02 * (SIPC). Residuals deviated from normal distribution, though.

For the case of *working under pressure*, no linear relationship between the variables could be detected in the binational sample, as well as in the Kenyan sample. In contrast, within the German sample SIPC was the only variable able to statistically significant predict working under pressure ($F(1, 44) = 13.65$, $p = 0.001$), with R^2 equal to .24 (adjusted R^2 = .22) indicating a moderate goodness-of-fit. Participants' predicted score with working under pressure is equal to 4.84 - .044 * (SIPC).

For *Flexibility*, no linear relationship could be revealed using the binational sample at once or the German sample alone. In Kenya, SIPC worked as a statistically significant predictor ($F(1, 69) = 4,51$, $p = .037$). R^2 is equal to .06 (adjusted R^2 = .05) indicating a low goodness-of-fit. It is noteworthy to mention, that prerequisites for the analysis were not

perfectly fulfilled. Residuals deviated from the normal distribution and the boxplot adumbrated funnel shape.

Predicting *Self-Confidence* on the basis of SIPC, the stepwise multiple linear regression was statistically significant for the binational sample ($F(2, 114) = 19.93$, $p = 0.000$), showing a parallel shift for belonging to one or the other culture. R^2 was equal to .26 (adjusted $R^2 = .25$), indicating a moderate goodness-of-fit. Subjects' predicted self-confidence was equal to 2.85 + 0.02 * (SIPC) + 0.45 * (Germany/Kenia). Kenyans scored 0.45 points lower in self-confidence than Germans did. SIPC showed about two times the weight of belonging to Germany ($b^* = .42$) or Kenya ($b^* = .18$). Residuals deviated from the normal distribution in this analysis. The homoscedasticity dot plot revealed a funnel shaped form. In the separate analysis for Germany as well, SIPC was the only predictor for self-confidence ($F(1, 44) = 18.10$, $p < 0.001$), with R^2 equal to .29 (adjusted $R^2 = .28$) indicating a high goodness-of-fit). The predicted self-confidence score for Germans equals to 2.60 + .027 * (SIPC), while residuals still seem to show some heteroscedasticity (rhombic dot plot). Using the Kenyan sample, SIPC was still the only significant predictor for self-confidence ($F(1, 69) = 9.18$, $p = 0.003$), but the goodness-of-fit remains at a low level ($R^2 = .18$ (adjusted $R^2 = .11$). Kenyans predicted self-confidence equals to 3.53 + 0.02 * (SIPC). As in the total sample, residuals deviated from the normal distribution and the dot plot shows a rhombic shape.

For *achievement motivation*, no linear relationship between the variables could be detected in the total sample, neither in the German or Kenyan sample alone.

Well-Being.

To predict overall well-being with SIPC, a stepwise multiple linear regression was computed including demographics and job controllability. In the binational sample, only

SIPC was a statistically significant predictor for the WHO-5 score ($F(1, 115) = 17.59$, $p <$ 0.001). The R^2 for the overall model was .13 (adjusted $R^2 = .13$), indicative for a moderate goodness R^2-of-fit according to Cohen (1988). Subjects' predicted well-being was equal to 43.89 + .29 (SIPC).

Factor analyses

Explorative factor analysis of the CCB measure.

The FKK/I-SEE test is not designed on the basis of factor analytical methods. Nonetheless, the author provides data on an explorative factor analysis for item loadings on the four primary scales (S, I, P, and C, see figure 2; Krampen, 1991). The German norm sample of the test manual provides an interesting standard of comparison for the actual samples of two cultures. As it is the case in the norm sample, a principal component analysis with varimax rotation, using the Kaiser criterion and four fixed factors, clearly showed four distinct factors. While intercorrelations tended to be at least moderate, the positive or negative directions conformed to expectations. The actual German sample follows suit, providing four distinct factors well above the Eigenvalue of 2 and with a similar, meaningful charge pattern (see Table 3).

In the Kenyan sample, only two of the four factors were representing content conform to the theoretical basis. As shown in table 4, one factor could be interpreted as mixed 'internality / self-concept of ability'. The second factor most likely represented an external control orientation, composed of 'powerful others' and 'chance'. Factors 3 and 4 seemed to correspond to some sort of externality, but did not show a distinct pattern according to theory. In the binational sample, the first two mixed factors reappear, as given in the Kenyan sample. Factors 3 and 4, on the other hand, did not resemble any of the other patterns for they seem to depict internality.

Altogether, the factorial structure of the German norm sample could only be replicated with the actual German sample. As soon as the other culture (here: Kenyan sample) is involved, new factorial compositions occurred.

Procrustean factor rotation.

A procrustean factor rotation was executed to carry out a target rotation (Syntax according to van de Vijver & Leung, 1997). The purpose is to compare a source- (Germany) and a target- (Kenya) factor loading structure regarding their similarity. Factor loadings from the explorative factor analysis of FKK/I-SEE scores (see above) were inserted to compare the similarities between the factor structures in the samples at hand. High similarity is indicated, when low square roots of the mean squared difference meet the other coefficients very well above .85. As presented in table 5, neither the intracultural German comparison, nor the intercultural German-Kenyan comparisons revealed a good match of factor structures. The German actual and German norm samples resembled each other the most, followed by the comparison of the Kenyan and the German norm sample. Similarities between the Kenyan and the actual German sample were the least.

Content analyses

To figure out the basic cause of detected differences between the German and the Kenyan samples' FKK/I-SEE data, three more sources of information were examined. First, item and scale characteristics were considered, second, the comprehension of single items' content was analyzed, and third, the perceived emotional quality of items was recorded. From the German sample, $n=14$ persons agreed to do this long test version. From the Kenyan responses, a random sample of $n=9$ was drawn.

Scale intercorrelations of the CCB measure.

Persuant to the German FKK/I-SEE manual, all scales were intercorrelated with each other. Correlational coefficients were then compared between the samples, using Fisher's z transformation and z-Test (Eid, Gollwitzer & Schmitt, 2017, p. 577). Tables 6 and 7 show results with significant differences between correlation coefficients marked. To start with, the actual German sample differed from the German norm sample in four coefficients. There was a slight disparity in the amount of correlations, which were always of the same direction (positive or negative) and mostly fell into the same category of strength (Cohen, 1988). Comparing the Kenyan with the German norm sample, nine differences were detected. Again, most of them differed only in amount and not in direction of the correlation. In three cases, there is no meaningful correlation detected, although there should be one according to the norm sample. All these cases apply to the powerful others scale (P). Contrary to expectations of the instrument's manual, in Kenya, P does not seem to be negatively connected with the internality scale (I). The same pattern holds true for the comparison with the actual German sample. Again, three of ten deviations follow from the P-scale not being clearly connected to the I-scale in the Kenyan sample.

Item comprehension.

While responding to each of the I-SEE/FKK items, participants were asked for their individual comprehension of the statement presented, providing item explanations in their own words. After a first inspection of the collected information, the following categories were labeled, checked and counted by instructed research assistants: 'conform' or 'nonconform' answer (according to FKK/I-SEE scale meaning), and interpretation as Internality (I including S), social externality (P), or fateful externality (C).

In the German sample (n=13 per item), 93% of the explanations were rated as being conform and thus reflected the respective scale. Two items were misunderstood frequently.

Item 17 belongs to P, but was often interpreted as asking for internality (I). Item 21, representing C, was understood as internality and social externality. In the Kenyan sample, 76% conform explanations were provided with twelve items showing a blurred comprehensibility. Items belonging to the scale self-concept of ability (S) showed mixed to unspecific interpretations that do not fit the intended meaning. Originally internal items were reflected with social and, sometimes emotional content, as well. Items coming from the P scale were often interpreted as internal, and C-items shifted to the internal. The overall picture is, that internal and external comprehensions rather mixed up in the Kenyan sample, doing so by adding social-relational aspects to originally pure internal content (f.i. "Sometimes one needs the help of others to deal with certain situations" rendered as paraphrase for an item initially speaking of being able to protect one's own interests).

The perceived emotional quality of items ('good', 'bad', 'both', 'neutral') was rated equivalent in both samples for 11 of all 32 items, by the majority belonging to a scale from the internal end of the continuum (n_G=13, n_K=52 per item). German and Kenyan participants perceived these items in a comparable way. Items of two scales differed particularly frequent among the samples: Most items capturing externality - 'Powerful Others' - were perceived as essentially negative by Germans. In the Kenyan sample, there was a major tendency to perceive these items as of positive quality, too. The perception of items belonging to 'Chance' turned out similarly for the most part, in both countries. A large overlap between the samples' ratings was amended by mixed or ambivalent responses from the Kenyan sample. Sorted by scale meaning, Internality came with the highest concordance and Externality with the lowest. The Kenyan data here provided a wider range of emotional qualities, rating external items as ambivalent or mixed rather than sticking to good or bad emotional quality, only.

Discussion

Hypothesis I expected competence- and control beliefs (CCB) to work as a predictor for typical outcomes such as well-being, occupational achievement motivation and job performance in Germany and Kenya. Multiple regression analyses and explorative factor analyses of the CCB measure including a procrustean target rotation altogether corroborate hypothesis I. The relationship between CCB and typical outcomes could be documented for several occupational personality variables, indicating a comparable predictability for the German and Kenyan subsample. The relationship between the variables is obviously not fully congruent, though. For achievement motivation, assertiveness, emotional stability, leadership motivation, power motivation, action orientation, and well-being the computed prediction models show mostly moderate fit indices. Predicting these variables on the basis of CCB, no remarkable difference could be detected between the German and the Kenyan sample. Differences arising from belongingness to one of the cultures were found for working under pressure, flexibility, and self-confidence. Only one marker item failed to be predicted in both countries.

An explorative factor analysis pursuant to the source CCB measure's manual reveals further differences. Whereas the actual German sample quite well reproduces the expected four-factor structure ('self-concept of ability', 'internality', 'powerful others', 'chance'), the Kenyan sample rather features a two-factor structure. This is supported by the fit indices generated with procrustean target rotation, indicating some similarity in CCB between the two cultures, but being far from what is expected when two samples are considered as being matchable. Thus, results of hypothesis I suggest to look behind the scenes of sole predictive value. CCB do correlate with outcomes such as well-being, achievement motivation and job performance. They mostly do so in Kenya as they do in Germany, even if measured with a W.E.I.R.D. instrument such as the FKK/I-SEE (Krampen, 1991; Greve, Anderson &

Krampen, 2001). But the mechanism of competence- and control beliefs seems to compose differently, depending on belonging to one culture or the other.

Hypothesis II expected a remarkable difference in culture-specific item comprehension, associated with the social-relational domain of personality. Results on quantitative and qualitative item information, as well as correlational patterns of CCB scores, altogether support this assumption. The CCB measure applied originally consists of four primary scales which are supposed to quantify control aspects independently of each other. Summated to higher-level scales, they converge to interdependent measures of the internal-external control construct as it is designed by the W.E.I.R.D. perspective. The analysis of scale intercorrelations reveals an intercultural difference in the linkage of those primary scales. As opposed to Germany, the Kenyan sample does not provide a distinct negative correlation between the two aspects or loci of control. Whereas a German would perceive a powerful fellow human being as standing in his or her way rather, the Kenyan would not bother, according to data. Thus, reducing the internality score by recorded externality distorts the CCB test results for the Kenyan participants. This applies in particular to 'powerful others'. Being only one of two factors forming externality, this is somewhat corrected by the 'chance' factor. Predicting criteria such as occupational personality features thus can pass in the overall picture, but has to come with a blur as it was detected within hypothesis I.

Qualitative interviews on CCB item comprehension and perceived emotional quality point in the same direction: When German and Kenyan persons had to evaluate the emotional quality of all CCB items, only one-third of them were perceived in a comparable way by both samples. Again, powerful others is the scale that diverges the most between samples. While Germans rate those items mostly as being of negative quality, Kenyans amend a reasonable portion of good, mixed or neutral perceptions. Only internality shows reasonable accordance in emotional perception between the two cultures. Analyses of item comprehension reveal,

that nearly one fourth of the Kenyan responses are non-conform to expectancies. Contrary to the German sample, a third of all items come with responses not hitting the mark of scale intentions. In sum, there is a tendency to mix up internality with social and emotional aspects in Kenya, which is not intended by the original CCB measure.

Competence- and control beliefs basically are of predictive value in Kenya as they are in Germany. Even when measured with instruments that are transferred from a European to an African culture, the connection with typical outcomes such as well-being, achievement motivation and job performance is given in both cultures. This connection is not completely congruent, though. A few of the target variables do not follow this hypothesized pattern, but they differ between the two cultures involved. In the overall picture, goodness-of-fit-indices are observed to be higher in the German than in the Kenyan sample. One reason for this intercultural difference in predictability is detected in the factor structure of the applied CCB measure. From the four distinct CCB factors provided, apparently only two of them could be recognized in the Kenyan sample. The factor structures observed in both countries did not resemble each other sufficiently, according to procrustean target rotation. To conclude with simply stating a different CCB factor structure for the Region of Kenya would be insufficient. First, there is reasonable doubt about measurement invariance given (Byrne et al., 2009). Furthermore, the collected information on item comprehension clearly shows that CCB items are perceived and understood in a different way when applied in Germany or Kenya. Replicating results from factor analyses with regard to content, in Kenya there is a clear tendency to mix internal and external aspects of control. This finding matches descriptions of the African Ubuntu-worldview, where a person is deeply interconnected with his or her social, natural and cultural environment. The Kenyan comprehension does not confine internal control orientation to the individual alone. This view rather intertwines the self with others' capabilities, thereby considering others' characteristics and needs. The social-

relational domain again is found to be of higher importance in that culture (Fetvadjiev, Meiring, van de Vijver, Nel & Hill, 2015).

We made a first attempt to gather information on culture-specific functioning of competence- and control beliefs in the Region of East Africa. The comprehensive and detailed results come with certain limitations, though. A lack of comparable and complementary research impedes to estimate the significance of gathered results. Like a magnifying glass, only a very small scope of the field was depicted in detail, while other parts of the larger picture lost attention. The convenience samples collected were situated around only one university city per country. Whereas it may be acceptable to stay constrained to large cities (f.i. to avoid for cultural transition side effects), subpopulations without contact to the academic world should definitely be included in future research. Further effort should be put in population-representative sampling, carefully considering demographic differences. The pursued emic-etic approach showed to be profitable, as hypotheses were shaped and culture-specific item information could be collected. But also, first hints were given on why an uncritical transfer of established CCB measures to East Africa is precarious (see also Cheung, van de Vijver & Leong, 2011). Further research is to do on the composition of CCB in Kenya as well as in Germany, carefully considering possible culture-specific aspects of control beliefs in a globalizing world. What could be a model of CCB for the region of East Africa, if the Western comprehension does not fit the context? Is the Western European worldview still the same as it was when respective measures were developed in the 1990's? And what variance is given within and between different cultural regions all over the world? First approaches come with astounding results, when geographical neighbors are compared (Miczka, 2019). Then, how are CCB connected to external criteria and other psychological variables when the Western context is left? The predictive value of CCB has to be rated by using objective or behavioral criteria such as occupational performance, success or real effort

in working and learning activities. Then there are interconnections with other psychological variables getting into focus, that have not received much attention until now and that are not reported here (f.i. concepts such as values, social skills or social axioms). The embedment of competence- and control beliefs in cultural contexts, as well as their relationship with other personality variables still is a challenging research field, when carried to the transcultural world.

      To date, first evidence is collected that competence- and control beliefs can be of predictive value for the transcultural context of German-Kenyan personnel psychology. Just as much evidence is discovered, showing culture-specific comprehensions and compositions of CCB aspects. An uncritical transfer of CCB concepts and measures from one culture to another is therefor inappropriate. More emic-etic based research is needed to estimate the amount of inter- and intracultural variance within the concept, carefully considering culture-specific and transcultural functioning of competence- and control beliefs.

References

Arasa JN, Echterhoff W, Heinecke-Müller M, Kariuki PW, Mwiti GK and Quaiser-Pohl C
(eds) (2016) *Revisiting the Big Five personality factors: Adaptation for the Use in
European-African Human Resources Management – Proceedings of the bilateral
workshop 22nd-29th February 2016, Nairobi*. Koblenz: University of Koblenz-Landau.
urn: nbn:de:kola-13709.

Bandura A (1977) Self-efficacy: Toward a unifying theory of behavioral change.
Psychological Review 84: 191-215.

Brandtstädter J, Krampen G and Greve W (1987) Personal control over development: Effects
on the perception and emotional evaluation of personal development in adulthood.
International Journal of Behavioral Development 10(1): 99-120. DOI:
10.1177/016502548701000107.

Brandtstädter J and Renner G (1990) Tenacious goal pursuit and flexible goal adjustment:
Explication and age-related analysis of assimilative and accommodative strategies of
coping. *Psychology and Aging* 5: 58-67. DOI: 10.1037/0882-7974.5.1.58.

Byrne BM, Oakland T, Leong FTL, van de Vijver FJR, Hambleton RK, Cheung FM and
Bartram D (2009) A critical analysis of cross-cultural research and testing practices:
Implications for improved education and training in Psychology. *Training and
Education in Professional Psychology* 3(2): 94-105. DOI: 10.1037/a0014516.

Cheung FM, van de Vijver FJR and Leong, FTL (2011) Toward a new approach to the study
of personality in culture. *American Psychologist* 66(7): 593-603.

Cohen J (1988) *Statistical power analysis for the behavioral sciences*. Hillsdale, NJ:
Lawrence Erlbaum.

Eid M, Gollwitzer M and Schmitt M (2017) *Statistik und Forschungsmethoden* [Statistics and Research Methods] (5th ed). Weinheim, Germany: Beltz.

Heinecke M (2013) Schlüsselkompetenz personale Kontrolle: Berufliche Bildung erfolgreich gestalten. In: Steins G (ed) *Psychologie in Bildung und Erziehung: Vom Wissen zum Handeln*. Wiesbaden, Germany: Springer. DOI: 10.1007/978-3-658-02622-6.

Henrich J, Heine S and Norenzayan A (2010) The weirdest people in the world? *Behavioral and Brain Sciences* 33(2-3): 61-83. DOI: 10.1017/S0140525X0999152X.

Federal Foreign Office Germany (2019) Kenya [Web log post]. Available at: www.auswaertiges-amt.de/en/aussenpolitik/kenya/228906 (accessed 5 February 2020).

Flammer A, Ito T, Lüthi R, Plaschy N, Reber R, Zurbriggen L and Sugimine H (1995) Coping with control-failure in Japanese and Swiss adolescents. *Swiss Journal of Psychology* 54(4): 277-288.

Greve W, Anderson A and Krampen G (2001) Self-efficacy and externality in adolescence: Theoretical conceptions and measurement in New Zealand and German secondary school students. *Identity: An International Journal of Theory and Research* 1(4): 321-344.

Harrow M, Hansford BG and Astrachan-Fletcher EB (2009) Locus of control: Relation to schizophrenia, to recovery, and to depression and psychosis — A 15-year longitudinal study. *Psychiatry Research* 168(3): 186-192. DOI: 10.1016/j.psychres.2008.06.002.

Henrich J, Heine SJ and Norenzayan A (2010) The weirdest people in the world? *Behavioral and Brain Sciences 33*: 61-135. DOI: 10.1017/S0140525X0999152X.

Hossiep R and Paschen M (1998) *BIP Bochumer Inventar zur berufsbezogenen Persönlichkeitsbeschreibung*. Göttingen: Hogrefe.

Jonas E, Graupmann V, Kayser, DN, Zanna M, Traut-Mattausch E and Frey D (2009) Culture, self and the emergence of reactance: Is there a universal freedom? *Journal of Experimental Social Psychology* 45(5): 1068-1080. DOI: 10.1016/j.jesp.2009.06.005.

Judge TA, Bono JE and Thoresen CJ (2003) The Core Self-Evaluations Scale: Development of a measure. *Personnel Psychology* 56*:* 303-331.

Fetvadjiev VH Meiring D, van de Vijver FJR, Nel JA and Hill C (2015) The South African Personality Inventory (SAPI): A culture-informed instrument for the country's main ethnocultural groups. *Psychological Assessment* 27(3): 827-837.

Krampen G (1988) Toward an action-theoretical model of personality. *European Journal of Personality* 2: 39-55. DOI: 10.1002/per.2410020104.

Krampen G (1991) Fragebogen zu Kompetenz- und Kontrollüberzeugungen (FKK). Göttingen: Hogrefe.

Leung K, Lam BCP, Bond MH, Conway LG III, Gornick LJ, Amponsah B, …Zhou F (2012) Developing and evaluating the social axioms survey in eleven countries: Its relationships with the five-factor model of personality. *Journal of Cross-Cultural Psychology* 43(5): 833-857. DOI: 10.1177/0022022111416361.

Liu M and Wilson SR (2011) The effects of interaction goals on negotiation tactics and outcomes: A dyad-level analysis across two cultures. *Communication Research* 38(2): 248-277. DOI: 10.1177/0093650210362680.

Luszczynska A, Gutiérrez-Dona B and Schwarzer R (2005) General self-efficacy in various domains of human functioning: Evidence from five countries. *International Journal of Psychology* 40(2): 80-89. DOI: 10.1080/00207590444000041.

Luszczynska A, Scholz U and Schwarzer R (2005) The General Self-Efficacy Scale: Multicultural validation studies. *The Journal of Psychology* 139(5): 439-457. DOI: 10.3200/JRLP.139.5.439-457.

Luszczynska A and Schwarzer R (2005) Multidimensional health locus of control: Comments on the construct and its measurement. *Journal of Health Psychology* 10(5): 633-642. DOI: 10.1177/1359105305055307.

Maimon D, Browning CR and Brooks-Gunn J (2010) Collective efficacy, family attachment, and urban adolescent suicide attempts. *Journal of Health and Social Behavior* 51(3): 307-324. DOI: 10.1177/0022146510377878.

Miczka J (in press). Übersetzung und Adaption der deutschen Fassung des Fragebogens zur Kompetenz- und Kontrollüberzeugungen in eine polnische Version.

Mwipikeni P (2018) Ubuntu and the modern society. *South African Journal of Philosophy* 37(3): 322-334. DOI: 10.1080/02580136.2018.1514242.

Ng TWH, Sorensen KL and Eby LT (2006) Locus of control at work: A meta-analysis. *Journal of Organizational Behavior* 27: 1057-1087. DOI: 10.1002/job.416.

Okeke BI, Draguns JG and Sheku B (1999) Culture, self, and personality in Africa. In: Lee Y-T, McCauley CR and Draguns JG (eds) *Personality and person perception across cultures*. Mahwah, NJ: Lawrence Erlbaum, pp.139-162.

O'Neill TA, McLarnon MJW and Law SJ (2016) Core self-evaluations, perceptions of group potency, and job performance: The moderating role of individualism and collectivism cultural profiles. *Journal of Occupational and Organizational Psychology* 89(3): 447-473. DOI: 10.1111/joop.12135.

Paschen M and Rust J (2008) *BIP Business-focused Inventory of Personality: UK Edition*. Oxford: Hogrefe.

Psychiatric Research Unit WHO Collaborating Centre in Mental Health (1998) *WHO (Five) Well-Being Index*. Available at: www.psykiatri-regionh.dk/who-5/Documents/WHO5_English.pdf (accessed 5 February 2020).

Psychiatric Research Unit WHO Collaborating Centre in Mental Health (1998). *WHO (Fünf)*

   - Fragebogen zum Wohlbefinden. Available at: www.psykiatri-regionh.dk/who-

   5/Documents/WHO5_German.pdf (accessed 5 February 2020).

Riggio RE (1986) Assessment of basic social skills. *Journal of Personality and Social*

   Psychology 51(3): 649-660. DOI: 10.1037/0022-3514.51.3.649.

Rotter JB (1966) Generalized expectancies for internal versus external control of

   reinforcement. *Psychological Monographs* 80.

Schmitt DP, Allik J, McCrae RR and Benet-Martinez V (2007) The geographic distribution

   of Big Five personality traits: Patterns and profiles of human self-description across

   56 nations. *Journal of Cross-Cultural Psychology* 38(2): 173-212.

Scholz U, Gutiérrez Dona B, Sud S. and Schwarzer R (2002) Is general self-efficacy a

   universal construct? Psychometric findings from 25 countries. *European Journal of*

   Psychological Assessment 18(3): 242-251. DOI: 10.1027//1015-5759.18.3.242.

Schuler H, Höft S and Hell B (2014) Eigenschaftsorientierte Verfahren der Personalauswahl.

   In: Schuler H and Kanning UP (eds) *Lehrbuch der Personalpsychologie* (3rd ed).

   Göttingen: Hogrefe, pp.149-214.

Schuler H, Thornton GC III, Frintrup A and Mueller-Hanson R (2004) *Achievement*

   Motivation Inventory AMI. Oxford: Hogrefe Ltd.

Schuler H and Prochaska M (2001) *LMI Leistungsmotivationsinventar*. Göttingen: Hogrefe.

Schwarzer R and Jerusalem M (1995) Generalized Self-Efficacy scale. In: Weinmann J,

   Wright S and Johnston M (eds) *Measures in health psychology: A user's portfolio.*

   Causal and control beliefs. Windsor: NferNelson, pp.35-37.

Skinner EA (1996) A guide to constructs of control. *Journal of Personality and Social*

   Psychology 71(3): 549-570. DOI: 10.1037/0022-3514.71.3.549.

Stajkovic AD and Luthans F (1998) Self-efficacy and work-related performance: A meta-

analysis. *Psychological Bulletin* 124(2): 240-261. DOI: 10.1037/0033-

2909.124.2.240.

Swanson DM (2012) Ubuntu, African epistemology and development: contributions,

contradictions, tensions, and possibilities. In Wright H and Abdi A (eds) *The*

dialectics of African education and Western discourses: counter-hegemonic

perspectives. New York: Peter Lang, pp.27-52.

The World Bank (2019) GDP growth (annual %): All countries and economies [Open Data].

Available at: data.worldbank.org/indicator/NY.GDP.MKTP.KD.ZG (accessed 5

February 2020).

Triandis HC (2002) Individualism-collectivism and personality. *Journal of Personality* 69(6):

907-924. DOI: 10.1111/1467-6494.696169.

Tutu DM (1999) *No future without forgiveness*. London: Rider.

Van de Vijver FJR and Leung K (1997) *Methods and data analysis for cross-cultural*

research. Thousand Oaks, CA: Sage.

Zecca G, Verardi S, Antonietti J-P, Dahourou D, Adjahouisso M, Ah-Kion J,…Rossier J

(2013) African cultures and the Five-Factor Model of personality: Evidence for a

specific pan-African structure and profile? *Journal of Cross-Cultural Psychology*

44(5): 684-700.

Tables

Table 1
Applied Measures for Outcomes of Competence- and Control Beliefs (CCB)

Variables	Measure(s)		Parts included
	German	English	
Occupational achievement motivation	LMI Leistungsmotivations- inventar (Schuler & Prochaska, 2001)	AMI Achievement Motivation Inventory (Schuler, Thornton, Frintrup & Mueller- Hanson, 2004)	Persistence* Dominance* Engagement* Confidence in success* Flexibility* Eagerness to learn* Preference for difficult tasks* Goal setting*
Business- focused personality features	BIP Bochumer Inventar zur berufsbezogenen Persönlichkeits- beschreibung (Hossiep & Paschen, 1998)	BIP Business-focused Inventory of Personality (UK Edition; Paschen & Rust, 2008)	Achievement motivation* Power motivation* Leadership motivation* Flexibility* Action orientation* Assertiveness* Emotional stability* Working under pressure* Self-confidence*
Well-Being	WHO (Five) Well-Being Index (Psychiatric Research Unit, 1998)	WHO (Fünf) – Fragebogen zum Wohlbefinden (Psychiatric Research Unit, 1998)	—

*For each part one marker item was selected

Table 2
Sample Structure

	Germany ($n_G = 52$)			Kenya ($n_K = 91$)		
Age[a]	$M = 27$ $SD = 8$			$M = 31$ $SD = 10$		
Gender %	Male 35		Female 65	Male 40		Female 60
Composition %	Students	Academic Staff	MME[b]	Students	Academic Staff	MME[b]
	75	22	4	25	11	65
Education[c] %	University Entrance: Bachelor: Master: PhD: Other:		60 8 23 4 < 2	University Entrance: Bachelor: Master: PhD: Other:		11 69 14 3 < 2
Internality[d]	$M = 51$ $SD = 23$			$M = 67$ $SD = 22$		
Job Control[e] %	84			86		

[a]$t(139) = -2.63$, p = .007.
[b]Middle management employee.
[c]$\chi^2 (5, N = 141) = 60.40, p < .001$.
[d]Raw score obtained from SIPC (Krampen, 1995; Greve, Anderson & Krampen, 2001), $t(138) = -3.92$, p < .001.
[e] "Do you feel your job description is clearly defined and realistic?*".*

Table 3
Rotated Factor Matrix FKK (German Sample)

	Factor			
	1	2	3	4
Item No. (Scale*)	"Chance"	"Self-Concept…"	"Internality"	"Powerful Others"
13 (C)	.80	-.23	—	.11
7 (C)	.73	-.18	—	.28
9 (C)	.70	-.28	.13	-.12
24 (S)	-.66	.48	—	—
18 (C)	.66	—	-.18	-.14
15 (C)	.64	-.11	—	—
23 (I)	-.63	.10	.56	—
22 (P)	.62	—	.15	.12
31 (C)	.58	.15	-.18	.20
16 (S)	-.49	—	.39	—
2 (C)	.47	.13	—	.29
10 (P)	.47	-.24	.20	.20
5 (I)	-.33	-.20	—	-.29
29 (P)	.33	—	-.17	.14
32 (S)	—	.81	—	—
28 (S)	—	.80	—	.17
4 (S)	.19	.69	—	-.34
21 (C)	.26	-.65	-.11	.13
17 (P)	.15	-.63	-.29	.33
12 (S)	-.11	.55	—	-.54
20 (S)	-.41	.50	.40	.27
8 (S)	-.30	.40	-.18	-.18
1 (I)	—	—	.70	.17
25 (I)	-.17	.29	.66	-.19
19 (P)	.28	—	.58	—
27 (I)	-.40	—	.48	.27
30 (I)	-.19	.22	.47	-.41
11 (I)	—	-.30	.44	-.36
14 (P)	.24	-.19	—	.76

3 (P)	.42	-.33	—	.54
26 (P)	—	—	.15	.44
6 (I)	-.31	.17	.33	-.46

Note. Correlations below .01 are not reported.
* S = self-concept of ability
I = internal control orientation
P = powerful others control orientation
C = chance control orientation (Krampen, 1991).

Table 4
Rotated Factor Matrix I-SEE (Kenyan Sample)

Item No. (Scale)	1 "Internality"	2 "Externality"	3	4
28 (S)	.76	—	—	-.11
32 (S)	.75	.12	—	-.23
27 (I)	.72	—	—	.17
30 (I)	.68	—	—	—
16 (S)	.66	-.34	.16	.18
25 (I)	.60	—	-.26	—
11 (I)	.54	-.43	.12	—
6 (I)	.43	—	-.20	-.14
23 (I)	.36	-.13	-.21	.15
8 (S)	-.23	-.22	—	-.15
3 (P)	-.16	.65	—	—
14 (P)	-.24	.65	—	.39
22 (P)	—	.58	—	.13
13 (C)	-.17	.57	.25	.34
21 (C)	—	.54	.34	—
10 (P)	.13	.52	.50	—
5 (I)	.23	.44	-.23	—
2 (C)	-.27	.38	.16	.26
24 (S)	—	.16	-.70	—
4 (S)	.22	-.12	-.65	—
7 (C)	—	.15	.61	—
20 (S)	.43	—	-.56	—
12 (S)	.20	-.14	-.55	—
17 (P)	.15	—	.41	.16
26 (P)	—	.15	—	.62
15 (C)	—	—	.19	.60
19 (P)	-.17	.15	—	.60
29 (P)	.19	.16	.15	.60
9 (C)	-.14	.41	—	.47
1 (I)	.29	.31	—	-.46

31 (C)	.11	—	.34	.39
18 (C)	—	.31	.31	.33

Note. Correlations lower than .01 are not reported.

* S = self-concept of ability

I = internal control orientation

P = powerful others control orientation

C = chance control orientation (Greve, Anderson & Krampen, 2001).

Table 5

Procrustean Target Rotation Comparing Factor Structures of I-SEE responses

	Factor			
	1	2	3	4
German Actual Sample - German Norm Sample				
Square Root of the Mean Squared Difference	.26	.20	.21	.23
Identity Coefficient	.79	.83	.77	.67
Additivity Coefficient	.78	.82	.67	.66
Proportionality Coefficient	.81	.83	.77	.67
Correlation Coefficient	.79	.83	.70	.66
German Norm Sample - Kenyan Sample				
Square Root of the Mean Squared Difference	.20	.22	.24	.25
Identity Coefficient	.83	.74	.73	.65
Additivity Coefficient	.80	.69	.67	.54
Proportionality Coefficient	.83	.75	.73	.66
Correlation Coefficient	.81	.69	.67	.55
German Actual Sample - Kenyan Sample				
Square Root of the Mean Squared Difference	.31	.31	.30	.32
Identity Coefficient	.71	.57	.58	.39
Additivity Coefficient	.68	.56	.42	.36
Proportionality Coefficient	.72	.59	.58	.40
Correlation Coefficient	.70	.57	.42	.36

Table 6

Comparison of FKK/I-SEE Scale Intercorrelations
(German Norm Sample - German Actual Sample)

Scale		I	P	C	SI	PC	SIPC
S	Correlation (Pearson)	.38	-.46	-.54	.84*	-.57	.80
	Fisher's z	-1.64	0.05	-0.25	-1.83	-0.16	-0.64
	p	.051	.479	.402	.034	.436	.262
I	Correlation (Pearson)		-.33	-.51*	.82	-.48	.75
	Fisher's z	—	-0.19	-2.05	-1.22	-1.33	1.00
	p		.424	.020	.111	.091	.160
P	Correlation (Pearson)			.59	-.48	.86	-.70
	Fisher's z		—	0.18	-0.24	0.62	1.09
	p			.430	.406	.267	.139
C	Correlation (Pearson)				-.64*	.92	-.83
	Fisher's z			—	-1.98	1.11	-1.01
	p				.024	.133	.156
SI	Correlation (Pearson)					-.64	.94*
	Fisher's z				—	-1.41	2.63
	p					.079	.004
PC	Correlation (Pearson)						-.87
	Fisher's z					—	0.11
	p						.455

*p < .05, indicating a significant difference between observed intercorrelations in two samples.

Table 7
Comparison of FKK/I-SEE Scale Intercorrelations
(Kenyan Sample – German Norm Sample Above Diagonal)
(Kenyan Sample – German Actual Sample Below Diagonal)

	S	I	P	C	SI	PC	SIPC
Self-concept of ability (S)	—						
Correlation (Pearson)		.61	-.37	-.44	.74*	-.44	.79
Fisher's z		0.73	1.44	0.79	-4.63	1.32	-1.17
p		0.234	.075	.215	.000	.093	.122
Internal control orientation (I)		—					
Correlation (Pearson)	.61*		-.08*	-.20	.90	-.15	.77*
Fisher's z	-1.76		2.10	0.55	1.30	1.58	1.74
p	.039		.018	.291	.097	.057	.041
Powerful others control orientation (P)			—				
Correlation (Pearson)	-.34	-.08		.61	-.08*	.89	-.53*
Fisher's z	-0.85	-1.45		0.55	3.64	0.59	3.93
p	.198	.073		.291	.000	.277	.000
Chance control orientation (C)				—			
Correlation (Pearson)	-.44	-.20*	.61		-.24*	.90	-.66*
Fisher's z	-.69	-1.99	-0.20		2.02	0.45	2.35
p	.245	.023	.421		.022	.326	.009
SI					—		
Correlation (Pearson)	.74	.90*	-.08*	-.24*		-.18*	.86
Fisher's z	1.39	-1.78	-2.45	-2.84		3.28	0.00
p	.082	.037	.007	.002		.001	.500
PC						—	
Correlation (Pearson)	-.44	-.15*	.89	.90	-.18*		-.66*
Fisher's z	-0.95	-2.05	-0.87	0.61	-3.17		4.87
p	.171	.020	.193	.270	.001		.000
SIPC							—
Correlation (Pearson)	.79	.77	-.53	-.66*	.86*	-.66*	
Fisher's z	0.15	-0.28	-1.56	2.27	2.33	-2.93	

		.441	.391	.060	.012	.010	.002
p		.441	.391	.060	.012	.010	.002

*p < .05, indicating a significant difference between observed intercorrelations in two samples.
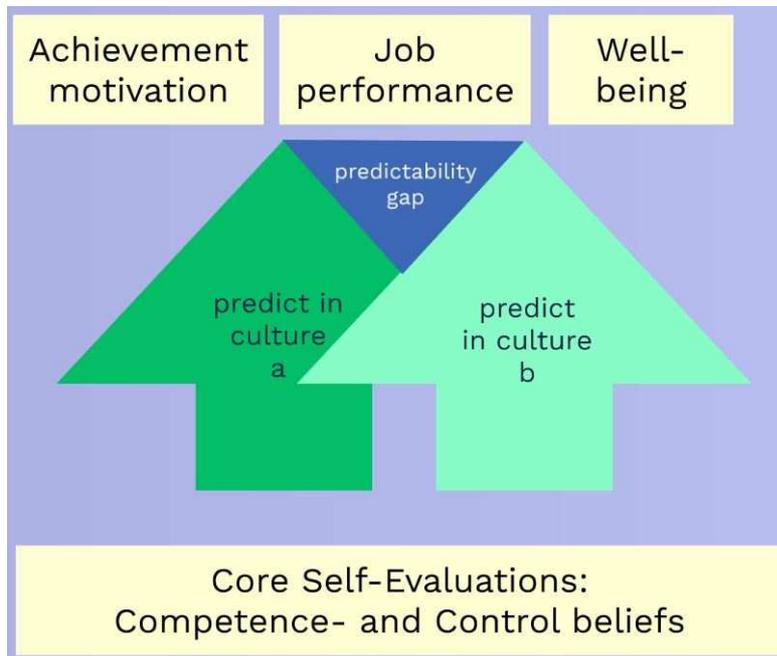
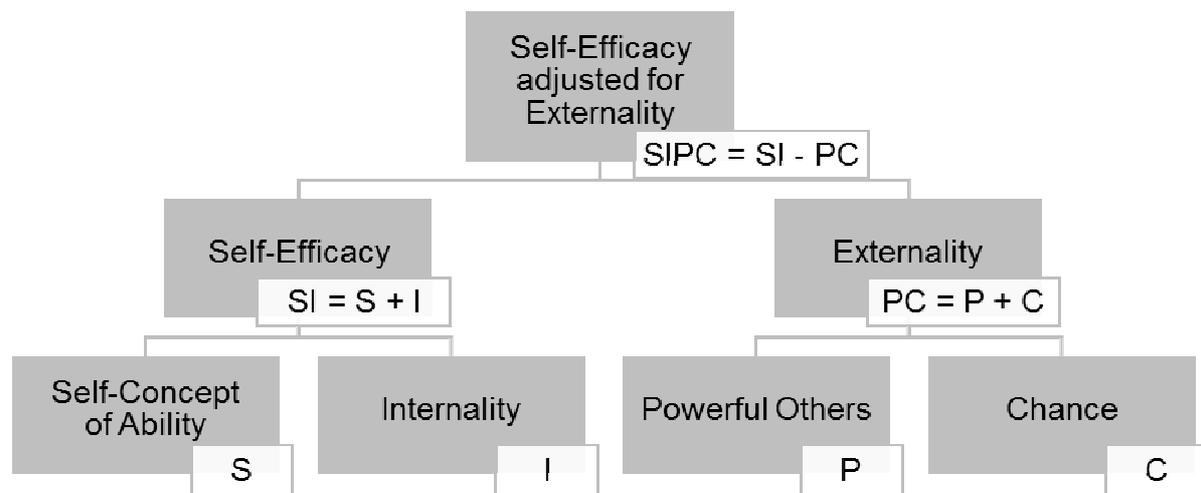**Figures**

Figure 1. *Research question.*

Figure 2. Conceptual structure of the FKK-/I-SEE-measure according to Krampen

(1991).