Nikolina KENIG

PSYCHOMETRIC PROPERTIES OF THE SHORT VERSION OF GENERIC CONSPIRACIST BELIEFS SCALE (GCB-15) TRANSLATED IN MACEDONIAN LANGUAGE

Abstract:

This research evaluates the psychometric characteristics of the short version of Generic Conspiracist Beliefs scale (GCB-15) translated in Macedonian language. A convenient online sample of 615 ethnic Macedonians (53.2% women, average age M=30.6; SD=20.4) from 18 cities participated voluntarily in the data gathering process. The translation process involved two independent interpretations, a back-translation, and consensus discussions.

The mean scores for GCB-15 subscales were higher compared to other studies, possibly indicating elevated conspiracist beliefs in this population. The results from the exploratory factor analysis suggested a two-factor structure, distinguishing general conspiracist ideation and extraterrestrial beliefs. The confirmatory factor analysis supported this model over one- or five-factor structures. The Cronbach Alpha indices indicated acceptable internal consistency of all subscales (from α=.61 to α=.80) and very high one for the overall scale (α=.91). Convergent validity was confirmed by examining correlations with conspiracist mentality and populist attitudes, while discriminant validity was demonstrated by non-association with emotional intelligence. Criterion-based validity was confirmed by predicting belief in COVID-19 conspiracy theory, whereas known groups' validity showed differences in GCB based on education, economic status, and life satisfaction, however, the hypotheses were supported only partially. In conclusion, the GCB-15 translated in Macedonian proves to be a valuable instrument for studying conspiracist beliefs in this cultural context, offering additional support for its effectiveness across various cultures.

Keywords: *generic conspiracist beliefs, psychometric characteristics.*

Introduction

Conspiracy beliefs generally refer to the acceptance or endorsement of explanations that attribute events to secret, often sinister, and usually illegal plots by powerful groups. These explanations, labeled as *conspiracy theories*, regularly involve suspicions of hidden actions, manipulations, or cover-ups by individuals or organizations. Conspiracist beliefs were defined by Aaronovitch (2009, p. 5) as "*unnecessary assumption of conspiracy when other explanations are more probable*", or as "*attempts to explain the ultimate causes of significant social and political events and circumstances with claims of secret plots by two or more powerful actors*" by Douglas et al. (2017, p.4).

These beliefs relate to various societal domains, including politics, science or health. It has been well documented that they could be detrimental for public and personal health, education and democracy and security. Conspiracy theories for instance, might seriously compromise the climate-change related efforts (Lewandowsky et al., 2013, Tam & Chan, 2023). They had a central role in impeding infection-prevention behaviors during COVID-19 pandemic (Bierwiaczonek, 2022), significantly contributed in reduction of willingness to vaccinate children (Jolley & Douglas, 2017) and play significant role in reducing trust in health authorities. Generalized conspiratorial thinking is linked with wider rejection of scientific evidence and the value of science (Douglas et al., 2017; Rutjens & Većkalov, 2022). Conspiracist beliefs have implications on social cohesion and security. There are studies that show how conspiracy beliefs might contribute in decreasing normative civic actions (Ardèvol-Abreu 2020; Imhoff et al., 2021). They support populist movements and politics (Rechica et al, 2022; Van Prooijen et al., 2022), and stimulate negative attitudes towards outgroups by increasing prejudices towards different target groups (Jolley et al., 2020; Sapountzis & Condor, 2013) and by justifying violence and radical extremism (Douglas et al., 2019; Stremisko et al., 2020; Rottweiler, & Gill, 2022).

The requirement for deeper understanding of this phenomenon is linked with a need for tools for its assessment. The necessity to create a valid and psychometrically sound measure of conspiracist beliefs which can be used across a variety of empirical contexts was addressed by Brotherton et al. (2013). They are proposing an approach which differed from the one that has previously been prevailing and relied on self-reported assessment of belief in some of the existing conspiracy theories. It is quite clear that one of the problems with this strategy in measuring conspiracy beliefs was that differences in wording of different theories lead to biases and that items from different scales referring to the same conspiracy theories could not be directly comparable. Further, such instruments were practically useless for cross-cultural comparisons as responses rely heavily on cultural familiarity and relevance of the selected theories conspiracy theories. Moreover, certain theories are becoming less significant or known over time and they are replaced by more popular in response to the new developments. Thus, Brotherton et al (2013) propose another approach in

measuring endorsement of conspiracisy theories which evaluates the generic conspiracist ideation. This generic measure is considered to be representative of the numerous specific conspiracy theories, whichever they are in the current time or cultural context. Thus, while other instruments which are linked to several conspiracy theories would need adjustments as trends in popular conspiracy theorizing evolve, their generic measure remains a suitable tool for assessing conspiracist ideation consistently over time. Moreover, by detaching conspiracist beliefs from specific contexts, a generic measure can serve as an appropriate assessment tool for diverse sample populations. The instrument that they have proposed is known as the Generic Conspiracist Beliefs scale, abbreviated as GCB.

The aim of this research is to translate the shorter version of Generic Conspiracist Beliefs scale (GCB) in Macedonian language and evaluate the psychometric characteristics of this translated version. The author considers that this instrument will be of use for further research in the country where conspiracist beliefs are rising rapidly and serve as a supporting system of the expanding acceptance of populist political attitudes (Kenig & Spasovski, 2023; Rechica et al., 2022).

The non-event-specific, generic approach in measuring conspiracist thinking has the potential to address the previously discussed theoretical and practical challenges associated with measures that focus on particular widely known conspiracy theories. Unlike constructing a measure tied to specific real-world conspiracy theories, which involves arbitrarily selecting a limited subset and thereby compromising the content's validity, a generic measure can rather economically encompass the entire range of conspiracist ideation or conspiracy theories. The authors have achieved this by identifying and reflecting fundamental generic beliefs that underlie beliefs in various specific conspiracy theories.

They started by factor analyzing 75 items based on different conspiracist beliefs, such as that the government carries out assassinations, that scientists intentionally manipulate their findings to adopt them to the existing governmental policies, or that findings about aliens are kept secret. In doing so, the authors used descriptors like "certain groups", "significant events" and so on without specific references on entities or events.

The analysis of this long form of the instrument resulted in generating 5 different factors. The factors were labeled as: *1. government malfeasance (e.g. "The government permits or perpetrates acts of terrorism on its own soil, disguising its involvement"), 2. malevolent global conspiracies (e.g. "A small, secret group of people is responsible for making all major world decisions, such as going to war"), 3. extraterrestrial cover-up (e.g. "Evidence of alien contact is being concealed from the public"), 4. personal well-being (e.g. "Technology with mind-control capacities is used on people without their knowledge"), and 5. control of information (e.g. "Groups of scientists manipulate, fabricate, or suppress evidence in order to deceive the public"). The authors intended to use these five factors as a framework for constructing the measure,*

thereby ensuring content validity. Using these five "themes" as a basis, Brotherton and colleagues developed a 15-items, three for each of the factors and developed the Generic Conspiracist Beliefs Scale GCB – 15 scale. All of the items are self-responded on a Lickert scale from 1=*definitely not true to 5=definitely true). Although it was based on a 5-factor model, due to the observed interconnections between factors and the common merging of themes seen in real-world conspiracy theories, in practical applications, the ultimate GCB-15 scale is primarily designed to evaluate conspiracist ideation as a unified and singular construct.*

In the validation study, Brotherton et al. (2013) reported exceptionally high overall internal reliability of the GCB scale (α = .93) and a very good short term test-retest reliability (*r = .89, p < .001), indicating* solid stability of the measurement over time. By using CFA, they concluded that the five-factor model was a better fit for the data than a unidimensional model. The same study confirmed excellent convergent and discriminant validity and satisfactory criterion-related validity of the GCB for predicting endorsement of several popular conspiracy theories like the 9/11.

Several subsequent studies strengthened the evidence of its convergent validity and showed that GCB is associated with several other previously validated measures of conspiracist ideation (Atari et al., 2019; Kay, 2021; Lantian et al., 2016; Swami et al., 2017), including the COVID-19 Conspiracist Ideation Scale (Kay, 2020). The evidence on its criterion validity was further supported in several studies showing that GCB has been able to predict the tendency to believe in a wide spectrum of specific conspiracy theories (Dieguez et al., 2015; Green & Douglas, 2018), including those about historical and political events like the JFK assassination (Dagnall et al, 2015) and the outbreak of COVID-19 (Alper al., 2021; Juanchich et al., 2021).

Facilitating the cross-cultural comparisons, which has been one of its key objectives, appears to have been effectively realized through the use of GCB-15. Up to this point, the tool has proven effective in evaluating conspiratorial thinking, not just within the United Kingdom, USA, but also in France (Lantian et al., 2016), Poland (Siwiak et al., 2019), and Japan (Majima & Nakamura, 2020). It is considered as the most commonly used scale for assessing this construct (Gories & Voracek, 2019) and, together with the Conspiracy Opinion Scale, has been recommended as a verified and stable instrument (Swami et al., 2017).

Method

Participants

The convenient sample consisted of 615 ethnic Macedonians (53.2% women) who live in 18 different cities in the country (49% in the capital of Skopje). Their average age was M=30.6; SD= 20.4 years. According to the answers, the largest proportion (47.1%) reported having completed secondary school, 42.3% were with higher education whereas 10.5% hold graduate or doctoral degree.

The participation was voluntary, anonymous and with no compensation provided.

Procedure of translating and administering the instrument

Two researchers independently translated the scale from English to Macedonian language. The slight differences that appeared in the two translations were resolved through discussing the better version. Subsequently, a bilingual interpreter back-translated this version into English. The author scrutinized the equivalence between the latest back-translated version and the original. The minor discrepancies that were identified in the final step, were resolved by reaching consensus among all subjects involved in this process.

The data collection process was taking place in December 2023. Students from the Faculty of Philosophy at the Institute of Psychology helped with the recruitment of participants. The potential participants identified by them were asked to respond the online questionnaire which was sent on their private e-mail addresses by the recruiters. A message was sent alongside with the questionnaire, outlining the research's objectives, assuring anonymity and confidentiality, and emphasizing the right to withdraw from the study without facing anticipated adverse effects. Due to the lack of control of the conditions in which the participants respond the instruments, one attention check item was added to help detecting non-diligent participants who were excluded from the data file.

Proposed analyses

The analysis of the collected data will begin by presenting the means for the items included in the GCB scale. To assess the discriminability of the items in the GCB-15 scale, an internal criterion (correlations with the subscale scores) will be employed. The reliability of the scale will be determined by calculating Cronbach's alpha coefficients. Confirmatory factor analysis will be used to compare the internal structure of the GCB scale on data gathered within this research with the model proposed by the authors of the instrument (construct validity). Consistent with prior research (Brotherton et al., 2013; Bruder et al, 2013; Majima & nakamura, 2019), several hypotheses aimed to support the validation process of the GCB will be tested. *Hypothesis 1*: Generic concpiracist beliefs correlate with conspiracist mentality and populist attitudes (convergent validity); *Hypothesis 2*: Generic concpiracist beliefs do not correlate with emotional intelligence (discriminant validity); *Hypothesis 3*: Generic concpiracist beliefs successfully predict acceptance of COVID-19 conspiracy theory (criterion-based validity);

Body of empirical evidence suggests various relations of conspiracist beliefs with a whole spectrum of different variables (Gligoric et al., 2017; Pilch

et al., 2023). For instance, higher levels of education are associated with lower susceptibility to conspiracist thinking. Individuals with higher educational attainment may have critical thinking skills, access to diverse information sources, and a greater ability to evaluate evidence, which could contribute to a more skeptical approach to conspiracy theories (Douglas et al., 2016; Douglas et al., 2017). Lower economic status is usually associated with feeling of insecurity which generates higher endorsement of conspiracist ideation (Imhof, 2015; Uscinski, 2014). Some studies suggest that a higher endorsement of conspiracist beliefs may be associated with lower levels of life satisfaction which could be explained by the fact that individuals who harbor conspiracist beliefs may perceive the world as threatening or manipulated, leading to feelings of decreased well-being (Spasovski & Kenig, 2020). Thus, *Hypothesis 4* states that: Generic concpiracist beliefs are higher in individuals who are less educated, less satisfied with life and with lower economic status in comparison with more educated, more satisfied and better off individuals (known-groups validity).

Statistical analysis

Apart from the exploratory and confirmatory factor analysis which were conducted using JASP 16, all statistical tests were carried out utilizing the SPSS-26 statistical package. Factor loadings for exploratory analysis were interpreted using Tabachnick and Fidell's (2007) recommendations (> .71 = excellent, > .63 = very good, > .55 = good, > .45 = fair, and > .32 = poor).The evaluation of model fit adhered to standard criteria: RMSEA values of .01, .05, and .08 denoted excellent, good, and mediocre fit, respectively. Additionally, CFI/GFI values exceeding .90 were considered to indicate excellent fit, while values ranging from .80 to .90 were treated as marginal fit.

The hypothesis in support of the instrument's criterion validity was tested by using linear multiple regression, whereas the differences proposed by the known-groups hypotheses were tested with one-way ANOVA and Bonferroni post-hoc tests. For all of the performed ANOVA analyses, η^2 values were calculated with the following meanings: η^2 = .01 to .05 indicates a small effect, $\eta2 \geq .06$ is for a medium effect, whereas $\eta^2 \geq .14$ indicates a large effect.

Measures used to test the validity of the scale

The convergent validity of the GCB-15 scale was tested by using ***Conspiracy Mentality Questionnaire*** (CMQ; Bruder et al., 2013), is an assessment tool designed to measure an individual's propensity towards adopting conspiratorial beliefs. Respondents are asked to express their agreement or disagreement with five statements on a ten-point scale ranging from 0%= *certainly not to* 100% = *certainly*. Its internal consistency for this sample was excellent (α=.85). The items do not refer to specific conspiracy theories but to general inclination

towards conspiracist thinking, covering a spectrum of aspects, from suspicion towards official explanations to thoughts of hidden motives behind events.

The Emotional intelligence scale (BEIS-10) was included in this study as an assessment instrument for the construct which was expected not to be correlated with conspiracist thinking. The BEIS-10 is a shortened self-report measure of emotional intelligence based on Salovey and Mayer's conceptualization of the construct. All items are responded on a five-scale from 1 (*strongly agree*) to 5 (*strongly disagree*). Similarly to other studies (eg. Balakrishnan, & Saklofske, 2015), the Cronbach Alpha reliability for this scale was acceptable (α =.75).

The *Three-dimensional populist attitude scale* is a self-reported instrument which was developed by Schulz et al. (2018) identifies the degree of endorsement of populist views. It consists of 12 items, grouped in three dimensions: 1. Anti-elitist attitudes, 2. Demand for popular sovereignty and 3. Belief in homogeneity of people. It's translation in Macedonian has shown satisfying psychometric characteristics (Kenig, 2023). The overall internal consistency of the scale for this sample was Chronbah alpha =.73. Higher scores indicate higher acceptance of populist attitudes.

Four *additional questions* was asked aiming to provide categorization of groups in three respective categories according to the economic status (low, middle and high), education (secondary, high and master or doctoral degree) and satisfaction with life (low, average, high). Finally, participants were asked to assess their endorsement of COVID-19 conspiracy theory (Alper et al., 2021) about the virus being a bioweapon, the by assessing degree (from 1=*completely disagree* to 5=*completely agree*) in which they believed that "Coronavirus was developed and spread around the world by certain people for their own purposes".

Results

The descriptive statistics (averages, standard deviations and Cronbach Alpha coefficients) of each of the initially proposed five dimensions of GCB-15 scale and its total score are shown in Table 1. Overall GCB-15 mean scores showed slight negative skew (-.32) and kurtosis (-.34).

Table 1: Descriptive data and reliability of the GCB-15 scale

Generic Conspiracist Beliefs subscales	n	Min.	Max	M*	SD	Kurt**	Skw***	α
Government malfeasance (GM)	3	1.0	5.0	3.55	.99	-.40	-.42	.76
Malevolent global conspiracies (MC)	3	1.0	5.0	3.73	.98	-.60	-.16	.80
Extraterrestrial cover-up (EC)	3	1.0	5.0	2.30	1.10	.46	-.78	.80

Personal well-being (PW)	3	1.0	5.0	3.28	1.06	-.32	-.66	.74
Control of information (CI)	3	1.0	5.0	3.63	.85	-.56	-.08	.61
TOTAL GCB-15	15	1.13	5.0	3.30	.80	-.34	-.32	.91

*M was computed by adding the scores of the items of each subscale and then by dividing the total with the number of items

SE = .1;*SE = .2

Compared to the averages of general population from other available studies these ones are somewhat higher. The study on validation of a French GCB-15 scale (Lantian et al., 2016) does not provide the overall mean, however, all subscales have lower means than those obtained on the population in North Macedonia. Siwiak et al. (2019) report M = 2.72; (SD = .87) as a grand mean for Polish population. Similarly, all other dimensions (subscales) in their study have shown lower averages. The overall mean of Macedonian population is also higher than the one reported in the Japanese study (Majima & Nakamura, 2020), which was M= 2.86; (SD = .72).

The other studies that provide cross-cultural data on GCB-15 report Cronbach Alpha coefficients of the sub-scales within the range of .54 to .93. Alike in the French and Polish version, the translation in Macedonian language resulted in the CI subscale having the lowest, yet acceptable internal consistency. The internal consistency of α=.91 is the same as the one reported in the Polish validation study as well as in an earlier research where the scale was used on online sample from the Republic of North Macedonia (Stojanov, 2015).

Table 2 shows that all item-to-scale correlations were statistically significant (p<.01), ranging between .513 and .772. This table also shows that there are no items which would improve the value of Cronbach's alpha if deleted. Means for the majority of items reflected a general trend of approaching the mid-point of the range of possible values (3.00), except for two items which have considerably higher averages ("*A lot of important information is deliberately concealed the public out of self-interest*" and "*The government uses people as patsies to hide its involvement in criminal activity*") and all of the items from the ET dimension whose means are below the mid-point scale.

Table 2: Descriptives and discriminability of GCB-15 items

GCB-15 items	r	α if item deleted	M	SD
Government malfeasance (GM)				
The government is involved in the murder of innocent citizens…	.700**	.898	3.27	1.23
The government permits or perpetrates acts of terrorism …	.705**	.898	3.36	1.30

The government uses people as patsies to hide its …	.639**	.900	4.03	1.09
Malevolent global conspiracies (MC)				
The power held by heads of state is second to that of small…	513**	.905	3.96	1.22
A small, secret group of people is responsible for making all…	.754**	.896	3.63	1.22
Certain significant events have been the result of the activity …	772**	.895	3.59	1.17
Extraterrestrial cover-up (ET)				
Secret organizations communicate with extraterrestrials, but …	.602**	.902	2.14	1.29
Evidence of alien contact is being concealed from the …	.598**	.903	2.55	1.39
Some UFO sightings and rumours are planned or staged in …	.612**	.902	2.22	1.23
Personal wellbeing (PW)				
The spread of certain viruses and/or diseases is the result of …	.736**	.896	3.39	1.27
Technology with mind-control capacities is used on people…	.664**	.900	3.16	1.40
Experiments involving new drugs or technologies are …	.692**	.898	3.30	1.27
Control of information (CI)				
Groups of scientists manipulate, fabricate, or suppress …	.734**	.896	3.49	1.24
New and advanced technology which would harm current …	.541**	.904	3.09	1.15
A lot of important information is deliberately concealed from…	.599**	.902	4.30	0.98

Internal structure of GCB-15

Having in mind that previous research indicated different factorial models as adequate, it was considered that performing exploratory factor analysis prior to confirmatory should be the first step towards identifying the most adequate model. A two-step procedure to examine the factor structures of the scale has been employed. First, data from approximately 65% of the sample (N = 359) was randomly selected by using the computer-generated random selection. The method of extraction that was used was Principal axes, whereas the

rotation method was Varimax (it was expected that the model is inter-correlated and multidimensional). The number of factors to be extracted was determined by factor eigenvalues above 1.0, combined with examination of the scree-plot. Bartlett'stest of sphericity, $\chi^2(105) = 2452.376$, $p< .001$, and the size of the Kaiser–Meyer–Olkin measure of sampling adequacy (KMO =.91) indicated that the matrix was factorable. Both proposed criteria for retaining factors suggested a two-factor solution (Table 3.) The two factors explained 47.7% of the variance. As the matrix of factor shows, 12 items loaded to the first factor with loadings greater than .40 and three items loaded to the second factor, with loadings greater than .50. Cronbach's α for the first and the second factor were .90 and .81, respectively. All the three items loaded on the second factor could be distinguished from the rest by their relatedness to extraterrestrial beliefs; whereas the other 12 items that loaded on the first factor consisted of a more heterogeneous range of beliefs.

Table 3: Rotated factor loadings for the GCB-15 extracted from exploratory factor analyses

GCB-15 items	F1	F2
The government is involved in the murder of innocent …	.656	
The government permits or perpetrates acts of …	.641	
The government uses people as patsies to hide its …	.677	
The power held by heads of state is second to that of …	.776	
A small, secret group of people is responsible for …	.724	
Certain significant events have been the result of the …	.768	
Secret organizations communicate with extraterrestrials …		.817
Evidence of alien contact is being concealed from the …		.830
Some UFO sightings and rumours are planned or staged …		.567
The spread of certain viruses and/or diseases is the t…	.618	
Technology with mind-control capacities is used on …	.491	
Experiments involving new drugs or technologies are …	.586	
Groups of scientists manipulate, fabricate, or suppress …	.639	
New and advanced technology which would harm …	.403	
A lot of important information is deliberately concealed…	.634	

After obtaining the initial solution for the internal structure, the following confirmatory factor analyses were performed: (1) a model assuming one general factor; (2) a five-factor model; (3) a two-factor model on the basis of the previously implemented exploratory factor analysis. CFA was run with an assumption that the factors are correlated.

The one-factor model that included all items of the scale, showed poor fit: $\chi^2(90) = 876.14$, CFI = .813, RMSEA = .118 with 90% CI [.111, .126], SRMR =

.073, whereas the five factor model, which has been proposed by the authors of the instrument, did not fit: $\chi^2(90)$ = 1901.12, CFI = .564, RMSEA = .181 with 90% CI [.174, .188], SRMR = .336. Based on these results, it was inferred that there is no empirical evidence for a one-dimensional or five-dimensional structure of the GBC-15 translated in Macedonian. Following the initial EFA results, the third model tested with CFA was conducted to determine the fit of a two-factor model. This model, showed mediocre, yet acceptable fit indices:$\chi^2(53)$ = 312.5, p<.001; CFI = .925, RMSEA = .08 with 90% CI [.077, .096], SRMR = .057.

Convergent and discriminant validity

In accordance with expectations stated in *Hypothesis 1 and 2*, conspiracist beliefs were positively related to both conspiracist mentality and populist attitudes and not related to emotional intelligence. This applies to both overall GCB-15 score and its subscales. In sum, correlational analyses showed in Table 4., provided considerably strong support for these two aspects of validity of GCB-15.

Table 4: Correlations between the GCB-15 subscales and the total score with conspiracy, mentality populist attitudes and emotional intelligence (N=615)

	GCB-15	GM	MC	ET	PW	CI
Conspiracy mentality	.713**	.646**	.618**	.407**	.606**	.624**
Populist attitudes	.336**	.299**	.329**	.160**	.296**	.283**
Emotional intelligence	.057	.022	.035	.030	.075	.071

**p* < .01

Criterion-based validity

To examine the criterion-related validity of the five GCB-15 dimensions proposed by its authors, a multiple regression analysis was performed with belief in COVID-19 conspiracy theory as the criterion variable and the scores on the five GCB-15 subscales as predictors. The regression model was significant; *F* = 110.4, p < .0001. The model explained 47.5% of variance, with strongest predictor being the belief that governments act to harm their own citizens (GM), followed by beliefs of malevolence of certain powerful groups (MC). As in the study by Brotherton et al. (2013), ET subscale was not a significant predictor of this particular conspiracy theory. Nevertheless, these findings (Table 5) indicate that the GCB-15 has suitable criterion-related validity.

Table 5: Multiple regression analysis with GCB-15 factors scores predicting Covid-19 conspiracy

GCB-15 subscales	Stand. Beta	St. error	t	Sig.
(Constant)	1.306		10.24	.000
GM	.249	.27	6.094	.000
MC	.197	.21	4.90	.000
ET	.018	.02	.60	.549
PW	.102	.12	2.54	.011
CI	.217	.19	4.34	.000

Known groups' validity

Hypothesis 4, stating that: *generic concpiracist beliefs are higher in individuals who are less educated, less satisfied with life and with lower economic status in comparison with more educated, more satisfied and individuals who are better off* was only partially supported by the findings. The ANOVA test results (Table 6) confirm most of the assumed differences. There were significant differences in conspiracist ideation among individuals with different levels of education (F (2.604) = 3.21, $p<.05$). Subsequent post-hoc analyses showed that significant differences exist only between the averages of individuals who completed master or doctoral studies and the other two categories ($p<.05$), but not between those with secondary and high education. The differences in regards to the self-reported economic status are significant ($F(2.605) = 8.125$, $p<.01$), but also not across all three groups. Post-hoc analysis suggest that those from the group with high economic status accept conspiracist beliefs less than those from the "low" and the "average" groups ($p<.05$). The differences between the latter are not statistically significant. The overall life satisfaction is also related to conspiracist beliefs ($F(2.612) = 3.897$, $p<.05$) which are significantly lower ($p<.05$) in the group that reported high satisfaction in comparison with the other two groups. For all of the performed ANOVA analyses, η2 values were in the range between .01 and .06, thus indicating small effect size.

Table 6: Differences in conspiracist beliefs according to level of education, economic status and life satisfaction

		M	SD		Sum of Squares	df	Mean Square	F	Sig.
Level of education	Secondary	3.34	.81	Btw Gr	4.10	2	2.05	3.210	0.041
	High	3.29	.75	Wth Gr	385.48	604	0.63		
	Master or dr	3.06	.87	Total	389.58	606			

Eco-nomic status	Low	3.44	.84	Btw Gr	10.293	2	5.14	8.125	0.000
	Middle	3.46	.78	Wth Gr	363.062	605	0.63		
	High	3.18	.79	Total	373.355	607			
Life sat-isfaction	Low	3.36	.91	Btw Gr	4.990	2	2.495	3.897	0.021
	Average	3.36	.74	Wth Gr	391.835	612	0.640		
	High	3.17	.82	Total	396.825	614			

Discussion

The results of EFA and CFA suggested that GCB-15 the translated in Macedonian has a two-factor structure: the first refer to general and the second express extraterrestrial conspiracist ideations. The two-factor structure was found to be the most acceptable solution in terms of fit by Swami et al. (2017). Similarly, Majima and Nakamura (2019) proposed a two-factor solution, although their adopted version had 13, not 15 items. The single and five-factor structures were not confirmed. One explanation might be that the belief in extraterrestrial conspiracies is somewhat different from belief in other conspiracy domains, especially because this issue does not seem to be very popular in cultures different from western ones. Other than this, on the whole, the results pertaining to convergent and discriminant validity, means and reliabilities were comparable to those concerning the original version of the scale and the other translated versions. The mean results, which are somewhat higher than the other that are reported, additionally confirm the assumption that conspiracy beliefs are higher in collectivistic cultures (Van Prooijen, 2021). Turning to the criterion validity, all subscales belonging to the first factor can successfully predict the acceptance of the COVID-19 conspiracy theory, unlike the second. This further suggests that belief in extraterrestrial conspiracy theories emerge as a different source of variance. Strong positive correlations were found between GCB-15 and inclination to populist attitudes as well as between GCB-15 and CMS. Taken together, these results confirmed that the Macedonian translation of GCB-15 has adequate psychometric properties.

In conclusion, this research sought to validate the Generic Conspiracist Beliefs Scale (GCB-15) translated in Macedonian language. The study confirmed a two-factor structure, distinguishing between general conspiracist ideation and beliefs related to extraterrestrial conspiracies. The psychometric evaluation indicated strong reliability and acceptable validity of the Macedonian translation of GCB-15.

In addition, this study expands our understanding of conspiracist beliefs, emphasizing the importance of considering cultural nuances when evaluating such constructs. Despite the identified differences in the internal structure of the instrument compared to the original one, further evidence is provided for its applicability in different cultural contexts. Although some findings raise concerns about this measure from the perspective of its dimensionality, the Mac-

edonian language version of the GCB-15 can be considered as a useful tool for researchers investigating conspiracy ideas.

Limitations

The internal structure of the translated GCB-15 remains still to be tested on more representative samples so that the findings can be generalized more safely. Preferably, the administration should be organized in conditions which are better controlled than online responding. Its validity could be demonstrated more convincingly, as some of the findings in this research were not strong enough and more importantly the number of included variables that are well-known to be related to the concept was very restricted. This study also misses to assess the test-retest reliability of the instrument, which remains a future task.

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