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Data Descriptor

Data from Zimbabwean College Students on the Measurement Invariance of the Entrepreneurship Goal and Implementation Intentions Scales

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Abstract: This article analyses primary data on the entrepreneurship intentions of selected Zimbabwean college students. The goal of this study was to examine the measurement invariance of the entrepreneurship goal and implementation intention scales across gender groups in a higher education setting. Entrepreneurship goal intentions (EGI) and entrepreneurship implementation intentions (EII) are examined as separate but related constructs. To address the research goal, a positivist philosophy and quantitative research approach were used. A cross-sectional survey was used to collect data from a convenient sample of 262 college students in Zimbabwe. A researcher-administered questionnaire, written in English, was distributed to the respondents and collected after completion. Multi-group confirmatory analysis was performed on the dataset using JASP computer software. The results obtained confirmed all four levels of measurement invariance, namely configural, metric, scalar, and strict invariance. The pattern of the results validates the consistency of the measurement properties of the entrepreneurial intention instruments designed in developed countries across different contexts of use. Researchers, entrepreneurship educators, and policymakers in Zimbabwe can use the results of this analysis to quantify potential entrepreneurs among young adults and to come up with intervention measures to support future entrepreneurship.

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Keywords: entrepreneurial intentions; measurement invariance; multigroup analysis; gender; Zimbabwe

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1. Summary

The entrepreneurship intention construct is an important component in understanding the entrepreneurial mindset. From a cognitive perspective, the concept of entrepreneurial intentions sheds some light on why some people seek out opportunities to set up and manage business ventures, while others do not [1]. According to [2], entrepreneurial intent is "a self-acknowledged conviction by a person that they intend to establish a new business venture and consciously plan to do so at some point in the future" (p. 676). The origins of the entrepreneurship intentions notion lie in the seminal cognitive psychology intentions models, specifically Ajzen and Fishbein's theory of reasoned action and Ajzen's theory of planned behaviour [3–5]. As the body of research on the concept grew over time, so did the number of variants of the entrepreneurship intention construct, as well as the cognate theories [6]. Entrepreneurial intentions are widely regarded as a reliable predictor of future entrepreneurial activity and have been widely used by various stakeholders around the world to forecast entrepreneurship propensity among young people [4].

Diverse entrepreneurship intention measurement instruments developed by scholars in universities and research institutes in developed countries are widely used by entrepreneurship scholars worldwide [2]. However, little attention has been paid to the consistency of these instruments' measurement properties across different contexts of use.

Thus, African entrepreneurship research, like any other field of primary research that uses psychological constructs, relies on measurement instruments developed in Western, educated, industrialised, rich, and democratic (WEIRD) societies to measure entrepreneurship intentions. This is done without regard for contextual differences or the possibility that the instrument's measurement properties will differ across cultural or demographic groups. The possible outcome is measurement inconsistency, which makes it challenging to compare, authenticate, synthesise, or add to earlier research outcomes [2]. Measurement errors can occur when measuring entrepreneurial intentions across contextual settings because of scalar non-equivalence. Scalar non-equivalence happens when scale scores vary across nations and the variation can be attributed to cultural or national differences [7]. When researchers use scales in surveys, they make the supposition that participants from various nations who have similar values for a specific variable would provide similar ratings on a scale [8]. Varying levels of knowledge of scaling styles, however, may lead to discrepancies.

Against this background, the purpose of this study was to evaluate the measurement invariance of the entrepreneurship goal intentions (EGI) and entrepreneurship implementation intentions (EII) scales (sub-dimensions of entrepreneurship intentions) when administered to male and female college students in Zimbabwe, an African country. The outcomes of the tests would either support or call into question the indiscriminate usage of such tools.

2. Materials and Methods

To accomplish the research goal, a positivist philosophy and quantitative research approach were used. In July 2019, data was collected from college students in Zimbabwe's Midlands province via a cross-sectional survey. A self-completion questionnaire, written in the English language, was used for the purpose. The mall-intercept approach was used to distribute the questionnaire to the respondents identified with the help of three trained research assistants. The respondents filled out the questionnaires and handed them back to the research assistant after completion. The respondents were chosen because they were college students and willing to engage in the study. Thus, participation in the study was entirely voluntary, and participants were assured of their right to confidentiality and privacy. The study aimed for a minimum of 200 participants, following Kline's sample size requirements for structural equation modelling [9]. To meet this expectation, 350 questionnaires were printed and distributed. Of those completed and returned to the researcher, only 262 had minimal cases of incomplete information and were therefore usable.

A six-item entrepreneurship goal intention scale was adapted from Liñán and Chen [10]. The respondents needed to indicate their level of agreement with each of the following items, which were based on a five-point Likert scale: "It is very likely that I will start a venture one day", "I am willing to make every effort to become an entrepreneur", "I have serious doubts whether I will ever start a venture", " I am determined to start a venture in the future", and "My professional objective is to be an entrepreneur". All scale points were labelled 1 (strongly disagree) to 5 (strongly agree).

The entrepreneurship implementation intention measure was adapted from [11] and used a three-item and five-point Likert scale with response categories ranging from 1 (Nothing at all) to 5 (I have it totally planned). The respondents needed to indicate how much they had thought about the following aspects in the creation of their business venture: "What specific steps I have to take to create my company", "When I will take each of the steps to create my company", and "Where I will carry out each of the steps to create my company".

The measurement invariance of the scales was ascertained using multi-group confirmatory factor analysis. Four levels of measurement invariance, namely configural, metric, scalar, and strict invariance were tested. Firstly, the configural invariance test was designed to ascertain whether the latent variables had the same pattern of free and fixed loadings. Secondly, metric invariance sought to test the equivalence of the item loadings on the latent variables, and the procedure entailed running a confirmatory factor analysis

test with the item loadings on the two constructs constrained to be equivalent in males and females. Thirdly, scalar invariance, which implies that mean differences in the latent variables reflect all mean differences in the shared variance of the measuring items, was tested by restricting the item intercepts to be equal in the male and female groups and then running a confirmatory factor analysis of the model. Lastly, strict invariance which reflects the equivalence of item residuals of metric and scalar invariant items across the gender groups was evaluated by running a confirmatory factor analysis with the item residuals constrained to be equivalent in both males and females. Measurement invariance was supported if the overall model fitness was not significantly worse off at each stage of the test. The model-fit indices used in this study include the comparative fit index (CFI), goodness-of-fit index (GFI), and standardized root mean square residual (SRMR). CFI and GFI values greater than 0.90 imply that the model fitness is acceptable, while for SRMR, values less than 0.08 suggest an adequate model fit [12].

3. Results

Firstly, Figure 1 depicts the conceptual model tested, which comprised entrepreneurship goal intentions and entrepreneurship implementation intentions and their indicators. Secondly, Table 1 shows the demographic profile of the respondents, including their gender, age, marital status, field of study, highest qualification attained, and three life experience categories. Most of the respondents were males (52.29%, n = 137), aged between 21 and 30 years (71.76%, n = 188), were single (82.44%, n = 216), and had high school education as their highest qualification (79.39%, n = 208).

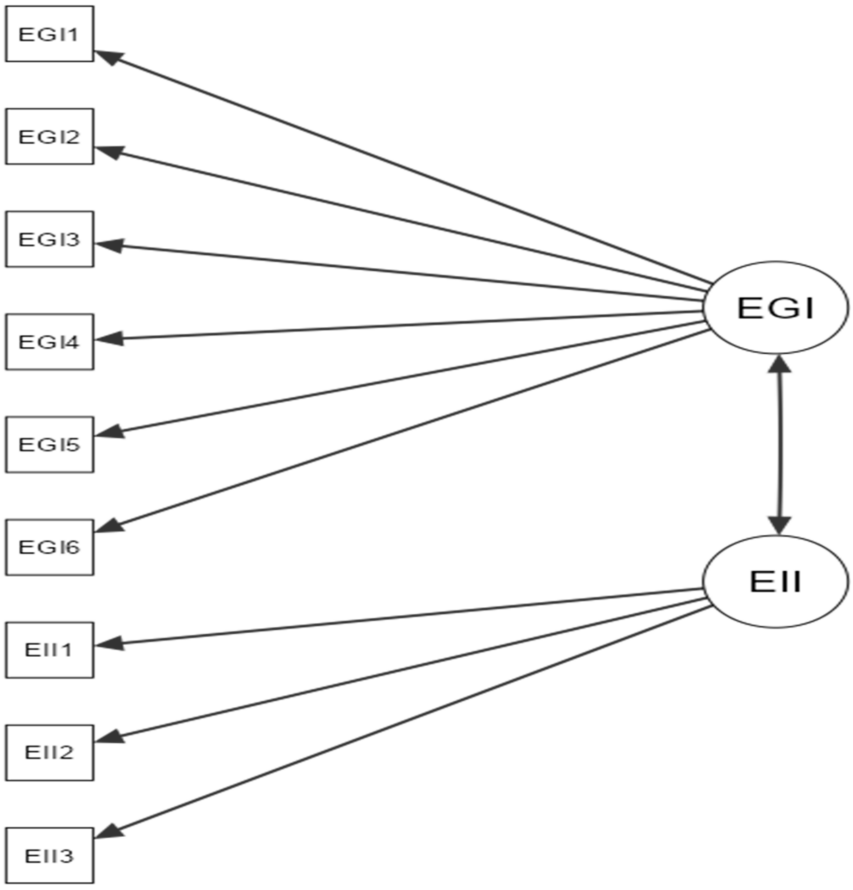

Figure 1. Conceptual model.

Table 1. Demographic profile of respondents.

Variable		Frequency	Percent
Gender	Male	125	47.710
	Female	137	52.290
		262	100
Age in years	Below 21	57	21.756
	21 to 30	188	71.756
	31 to 40	13	4.962
	41 to 50	1	0.382
	Missing values	3	1.145
		262	100
Marital status	Not married	216	82.443
	Married	46	17.557
		262	100
Qualification	High school	208	79.389
	Tertiary certificate	43	16.412
	Diploma/Degree	11	4.198
		262	100
Field of study	Applied Sciences	92	35.115
	Business/Commerce	44	16.794
	Engineering	126	48.092
		262	100

Note that EGI means entrepreneurship goal intentions and EII stands for entrepreneurship implementation intentions.

Thirdly, Table 2 summarises the results relating to the robustness of the measurement models, revealing the reliability and construct validity of the two scales across the different gender groups. For both latent variables, the findings suggest satisfactory levels of reliability and construct validity, as shown by the Cronbach alpha values of greater than 0.8 and the average variances extracted that were greater than 0.5 for males and females.

Table 2. Reliability and convergent validity indices.

Group	Variable	Number of Items	Cronbach Alpha (α)	Average Variance Extracted
Male	EGI	3	0.889	0.693
Male	EII	6	0.873	0.773
Female	EGI	3	0.840	0.592
Female	EII	6	0.844	0.711

Note that EGI means entrepreneurship goal intentions and EII stands for entrepreneurship implementation intentions.

Next, Table 3 shows whether the measurement properties of the scales differed between male and female respondents. The consistency of each measure was tested at four levels: configural, metric, scalar, and metric invariance. Finally, the results in Table 3 suggest that the conditions for the four levels of measurement invariance were satisfied given that most of the model-fit indices satisfied the minimum acceptable conditions expected.

Table 3. Measurement invariance results of the entrepreneurship goal and implementation intentions scale.

	χ^2	df	GFI	SRMR	CFI	Change in CFI
Configural	50.621	52	0.995	0.057	1	-
Metric	67.818	59	0.993	0.067	0.999	0.006
Scalar	79.380	84	0.992	0.061	1	0.007
Strict	79.380	84	0.992	0.061	1	0.007

(CFI: Comparative fit index, GFI: Goodness-of-fit index, SRMR: standardized root mean square residual, df: degrees of freedom).

4. Conclusions

The study's goal was to establish the measurement invariance of the entrepreneurship goal intentions (EGI) and entrepreneurship implementation intentions (EII) scales when administered to male and female Zimbabwean college students. A multigroup confirmatory factor analysis test demonstrated that the scales of entrepreneurship goal intentions and entrepreneurship implementation intentions were invariant among the gender groups sampled. As a result, even though the two measurements were designed and verified in a developed-world setting, their measuring properties remained constant in a distinct cultural milieu. This discovery lends credence to the use of scales in various world areas. The results corroborate those of a study conducted in Greece by [13], which discovered that although there were variations in the country's levels of entrepreneurial intentions between men and women, these variations were not due to the scales' measurement characteristics. However, other studies conducted outside the context of Western culture [14,15] only succeeded in demonstrating the partial measurement invariance of entrepreneurial intentions measures.

The data is relevant to a wide range of players in Zimbabwe's economy. First, the data will be beneficial to entrepreneurship scholars since it gives information on the consistency of the psychometric features of an entrepreneurship intention testing instrument across different gender groups. Researchers interested in the study's topic can use the data in future replication studies. Second, the dataset will be beneficial to researchers, educators, business development assistance organisations, and policymakers who are looking for reliable tools to evaluate the level of entrepreneurial propensity among students to quantify the pool of future entrepreneurs. Third, authorities might utilise the data to create policies to enhance the interest of young people in entrepreneurship. Finally, causal links that can be used to generate entrepreneurship policy-related inferences can be tested by incorporating a new dataset on other variables that can either be antecedents or outcomes of entrepreneurial intent.

However, the generalizability of the study findings is limited due to the use of a convenient sample of respondents, as well as the small sample size, which may not accurately reflect all the qualities of the target population. Future research on the same topic should aim to use more representative samples.

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Informed Consent Statement: All respondents gave verbal informed consent and participated voluntarily. The author confirms that the research was carried out ethically. No ethical permission was sought.

Data Availability Statement: Underlying data: Mendeley Data: Measurement invariance of entrepreneurship intentions scales. https://doi.org/10.17632/74nhxtmrzx.1, accessed on 5 October 2022. This project contains the following underlying data: File 2.xlsx (data file). Extended data: File 1.doc (blank questionnaire file).

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Conflicts of Interest: The author declares that he has no known competing financial interests or personal relationships that could appear to influence the work reported in this paper.

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