

Analysis of The Aiken Index to Measure The Content Validity of The Wolio Language and Culture Preservation Model Instrument

Firman Alamsyah Mansur¹, Arsyad¹, Abdul Manaf¹

¹ Universitas Muhammadiyah Buton, Indonesia

*Correspondence: fir.buton@gmail.com

ABSTRACT

This research aims to determine the content validity of the Wolio language and culture preservation model measurement instrument. This type of research is development research, using quantitative descriptive methods. The research subjects consisted of 9 experts, namely lecturers and teachers who understand the Wolio language and culture preservation model. Experts assess each item of the instrument statement. The instrument uses an ordinal rating scale and consists of 3 indicators. The collected data was analyzed using the Aiken's V formula. As a result, of the 15 instrument statement items, the content validity coefficient was greater than 0.74, indicating that all items were valid. There are 13 items in the very good category and 2 items in the good category. So this instrument is very suitable for use in measuring or assessing models of sociolinguistic preservation of language and culture

ARTICLE HISTORY

Published September 20th 2023



KEYWORDS

Aiken Index; Content Validity; Instrument

ARTICLE LICENCE

© 2023 Universitas Hasanuddin
Under the license CC BY-SA
4.0



1. Introduction

The Wolio language is a symbol of ethnic identity for the Wolio people, and a means of developing culture (Kamaluddin & Munafi, 2020; Mansyur, 2018; Mansyur et al., 2022). Arts, literature, and cultural attractions are very important for supporting the proposal of the Wolio fort area as a world cultural heritage, and for the development of tourism in Baubau City. Various studies on the preservation of the Wolio language have been carried out but have not produced a comprehensive language and culture preservation model (Mansyur, 2016; Mansyur, 2017; Mansyur & Suherman, 2020; Mansyur & Said 2020; Rahman & Weda, 2019). To support model creation and development, quality instruments are needed to measure the model.

Psychometric experts state that an instrument as a good quality measuring tool must meet the criteria of validity and reliability. Gronlund, et al., (2009) stated that apart from being valid and reliable, it also has a level of usefulness. Regarding the concept of validity, Azwar (2011) states that validity comes from the word validity which means the extent to which a measuring instrument is accurate and precise in carrying out its measuring function. This statement is in line with the opinion of Allen & Yen (1979) that the validity of a test instrument can be interpreted as the ability of a test to measure what it is supposed to measure.

Further to the concept of validity, it is known that there are three types of validity, namely content validity, construct validity and criterion validity (Allen & Yen, 1979). Content validity means the extent to which a test instrument reflects the overall ability to be measured (Azwar, 2011). Content validity shows the content of the attributes studied (DeVon et al., 2007). Thus, content validity is a stage that must be implemented in instrument development.

There are five conditions that must be met in content validity, namely: 1) the indicator must comply with the conceptual definition of the construct, 2) the construct is clearly defined, 3) the content of the construct must be relevant to the measurement objective, 4) there is consensus from qualified experts that the items in the measuring instrument already represent the construct to be measured; and 5) the contents of the expert's responses must be properly observed and assessed (Guion, 1977). Content validity was obtained based on expert judgment. The expert assesses qualitatively and quantitatively based on the validation sheet. So we need the Aiken Index as a formula to determine which items meet valid or invalid criteria.

Based on the description above, this research aims to develop an instrument for measuring the preservation of Wolio language and culture. The resulting instrument is of good quality and meets the elements of content validity. This model validity instrument can contribute to field research in sociolinguistics studies or anthropological linguistics.

2. Methodology

This type of research is research and development of measurement instruments for the preservation of Wolio language and culture. This study uses a quantitative descriptive method based on the results of content validity calculations using the Aiken formula.

Content validation data was obtained from the results of expert assessments of the 15 instrument items developed. There were 9 experts involved in this research. The selection of experts is based on consideration of expertise in the fields of Wolio language and culture. Seven regional language and culture teachers who had been teaching for more than 10 years were selected. Apart from that, you have a bachelor's and master's degree in education. Two language and culture lecturers who had been teaching for more than 10 years were selected. This lecturer has a doctoral education qualification. Experts use validation sheets to assess each statement item in the instrument (Table 1). The assessment criteria used are as follows;

Score 5: Very Appropriate/Very Understandable

Score 4: Decent/Understanding

Score 3: Quite Decent/Fairly Understandable

Score 2: Inadequate/Less Understandable

Score 1: Not Appropriate/Ununderstandable

Table 1. The statement items for the measurement model for the preservation of the Wolio language and culture

No	Item Statements
1.	I can speak Wolio
2.	My parents and I communicate using Wolio language at home
3.	My friends and I communicate using Wolio language in everyday society
4.	I want to learn Wolio language
5.	I am proud to use Wolio with family or friends
6.	The school supports me in learning the Wolio language
7.	I know and know Wolio literature, art or culture
8.	I have watched Wolio literature, arts and culture activities/performances in the last 2 years
9.	I have been involved in Wolio's literary, artistic and cultural activities at school in the last 2 years
10.	I have been involved in Wolio's literary, artistic and cultural activities in the community for the last 2 years
11.	I am interested in studying literature, dance, vocal arts, or other performing arts and Wolio culture
12.	I learned Wolio culture through the environment where I live
13.	I realize that language is a culture that must continue to be preserved
14.	I realize that literature, dance or Wolio vocal art is a culture that must continue to be preserved
15.	I like and love the preservation of Wolio culture

Quantitative data obtained from expert assessments is used to prove content validity. The Aiken formula is the formula used in proof (Azwar, 2012).

$$V = \frac{\sum s}{[n(c-1)]}$$

Information:

s = r - lo

lo = the lowest validity rating number

c = the highest validity rating score

r = the number given by the rating

n = many repeaters/experts

The Aiken index obtained from each item based on the calculation results was consulted with the Aiken table (Azwar, 2012).

No. of Items (m) or Raters (n)	Number of Rating Categories (c)											
	2		3		4		5		6		7	
	V	p	V	p	V	p	V	p	V	p	V	p
2							1.00	.040	1.00	.028	1.00	.020
3							1.00	.008	1.00	.005	1.00	.003
3			1.00	.037	1.00	.016	.92	.032	.87	.046	.89	.029
4					1.00	.004	.94	.008	.95	.004	.92	.006
4			1.00	.012	.92	.020	.88	.024	.85	.027	.83	.029
5			1.00	.004	.93	.006	.90	.007	.88	.007	.87	.007
5	1.00	.031	.90	.025	.87	.021	.80	.040	.80	.032	.77	.047
6			.92	.010	.89	.007	.88	.005	.83	.010	.83	.008
6	1.00	.016	.83	.038	.78	.050	.79	.029	.77	.036	.75	.041
7			.93	.004	.86	.007	.82	.010	.83	.006	.81	.008
7	1.00	.008	.86	.016	.76	.045	.75	.041	.74	.038	.74	.036
8	1.00	.004	.88	.007	.83	.007	.81	.008	.80	.007	.79	.007
8	.88	.035	.81	.024	.75	.040	.75	.030	.72	.039	.71	.047
9	1.00	.002	.89	.002	.81	.007	.81	.006	.78	.009	.78	.007
9	.89	.020	.78	.032	.74	.036	.72	.038	.71	.039	.70	.040
10	1.00	.001	.85	.005	.80	.007	.78	.008	.76	.009	.75	.010
10	.90	.001	.75	.040	.73	.032	.70	.047	.70	.039	.68	.048
11	.91	.006	.82	.007	.79	.007	.77	.006	.75	.010	.74	.009
11	.82	.033	.73	.048	.73	.029	.70	.035	.69	.038	.68	.041
12	.92	.003	.79	.010	.78	.006	.75	.009	.73	.010	.74	.008
12	.83	.019	.75	.025	.69	.046	.69	.041	.68	.038	.67	.049
13	.92	.002	.81	.005	.77	.006	.75	.006	.74	.007	.72	.010
13	.77	.046	.73	.030	.69	.041	.67	.048	.68	.037	.67	.041
14	.86	.006	.79	.006	.76	.005	.73	.008	.73	.007	.71	.009
14	.79	.029	.71	.035	.69	.036	.68	.036	.66	.050	.66	.047
15	.87	.004	.77	.008	.73	.010	.73	.006	.72	.007	.71	.008
15	.80	.018	.70	.040	.69	.032	.67	.041	.65	.048	.66	.041
16	.88	.002	.75	.010	.73	.009	.72	.008	.71	.007	.70	.010
16	.75	.038	.69	.046	.67	.047	.66	.046	.65	.046	.65	.046
17	.82	.006	.76	.005	.73	.008	.71	.010	.71	.007	.70	.009
17	.76	.025	.71	.026	.67	.041	.66	.036	.65	.044	.65	.039
18	.83	.004	.75	.006	.72	.007	.71	.007	.70	.007	.69	.010
18	.72	.048	.69	.030	.67	.036	.65	.040	.64	.042	.64	.044
19	.79	.010	.74	.008	.72	.006	.70	.009	.70	.007	.68	.009
19	.74	.032	.68	.033	.65	.050	.64	.044	.64	.040	.63	.048
20	.80	.006	.72	.009	.70	.010	.69	.010	.68	.010	.68	.008
20	.75	.021	.68	.037	.65	.044	.64	.048	.64	.038	.63	.041
21	.81	.004	.74	.005	.70	.010	.69	.008	.68	.010	.68	.009
21	.71	.039	.67	.041	.65	.039	.64	.038	.63	.048	.63	.045
22	.77	.008	.73	.006	.70	.008	.68	.009	.67	.010	.67	.008
22	.73	.026	.66	.044	.65	.035	.64	.041	.63	.046	.62	.049
23	.78	.005	.72	.007	.70	.007	.68	.007	.67	.010	.67	.009
23	.70	.047	.65	.048	.64	.046	.63	.045	.63	.044	.62	.043
24	.79	.003	.71	.008	.69	.006	.68	.008	.67	.010	.66	.010
24	.71	.032	.67	.030	.64	.041	.64	.035	.62	.041	.62	.046
25	.76	.007	.70	.009	.68	.010	.67	.009	.66	.009	.66	.009
25	.72	.022	.66	.033	.64	.037	.63	.038	.62	.039	.61	.049

Figure 1. Aiken Index (V)

Based on many experts (9 experts) who assessed the instrument and assessment scale categories (5 categories), the statement item on the instrument measuring the language and culture preservation model is said to be valid if the V value obtained must be the same as 0.72 or more. Next, the V values obtained are categorized based on the score range (Azwar, 2012).

Table 2. Criteria for assessing validation analysis results using Aiken V

Score Range	Category
$0.76 < V \leq 1.00$	Very good
$0.59 < V \leq 0,76$	Good
$0,41 < V \leq 0,59$	Pretty good
$0.24 < V \leq 0,41$	Not good
$V \leq 0,24$	Very Not Good

3. Result and Discussion

The content validity of the Wolio language and culture preservation model measurement instrument in this study was determined based on expert assessment. There were 9 experts who assessed qualitatively and quantitatively. Based on the results of quantitative data analysis using the Aiken formula, the Aiken index (V) for each item is obtained which is presented in Table 3.

Table 3. Results of the Aiken index analysis of the wolio language and culture preservation model measurement instrument

State ment	R 1	R 2	R 3	R 4	R 5	R 6	R 7	R 8	R 9	S 1	S 2	S 3	S 4	S 5	S 6	S 7	S 8	S 9	Sig. S	V	infor matio n
Item 1	5	4	5	5	5	3	5	5	4	4	3	4	4	4	2	4	4	3	32	0,8 89	Valid
Item 2	5	4	5	5	5	2	5	5	4	4	3	4	4	4	1	4	4	3	31	0,8 61	Valid
Item 3	5	4	4	5	4	3	4	5	3	4	3	3	4	3	2	3	4	2	28	0,7 78	Valid
Item 4	5	4	4	5	4	4	5	5	4	4	3	3	4	3	3	4	4	3	31	0,8 61	Valid
Item 5	5	4	5	5	5	3	5	5	4	4	3	4	4	4	2	4	4	3	32	0,8 89	Valid
Item 6	5	4	5	4	5	4	5	5	4	4	3	4	3	4	3	4	4	3	32	0,8 89	Valid
Item 7	5	4	4	5	3	2	5	5	3	4	3	3	4	2	1	4	4	2	27	0,7 50	Valid
Item 8	5	4	4	5	5	3	5	5	3	4	3	3	4	4	2	4	4	2	30	0,8 33	Valid
Item 9	5	4	3	5	3	2	5	5	4	4	3	2	4	2	1	4	4	3	27	0,7 50	Valid
Item 10	5	4	3	5	5	4	5	5	3	4	3	2	4	4	3	4	4	2	30	0,8 33	Valid
Item 11	5	4	4	4	4	3	5	5	3	4	3	3	3	3	2	4	4	2	28	0,7 78	Valid
Item 12	5	5	4	5	5	4	5	5	4	4	4	3	4	4	3	4	4	3	33	0,9 17	Valid
Item 13	5	5	5	5	5	5	5	5	4	4	4	4	4	4	4	4	4	3	35	0,9 72	Valid

Item																			0,9		
14	5	5	5	5	5	4	5	5	4	4	4	4	4	4	3	4	4	3	34	44	Valid
Item																			0,8		
15	5	5	4	5	5	4	5	5	3	4	4	3	4	4	3	4	4	2	32	89	Valid

All statement items meet valid criteria or can be said to have an Aiken index value above 0.72. Valid items indicate the same agreement from experts (Pandawa et al., 2021). For example, in item 15, 8 experts gave a score of 5 or very feasible/very understandable and 1 expert gave a score of 4 or feasible/understandable. On item 9, each expert gave a varying assessment. Some gave a score of 5, a score of 4, a score of 3, and a score of 2. The variation in assessment scores on item 9 shows differences in the understanding of experts. There is (R6) who gives a score of 2 which means that item 9 "I have been involved in Wolio's literary, artistic and cultural activities at school in the last 2 years" is considered inadequate/not understandable from the language session, indicators and constructs. This finding is in line with Retnawati (2016) opinion regarding the suitability of items and indicators. Therefore, the items of the Wolio language and culture preservation model measurement instrument have different Aiken indices. Below is a picture of the variation in the distribution of the Aiken index for 15 items.

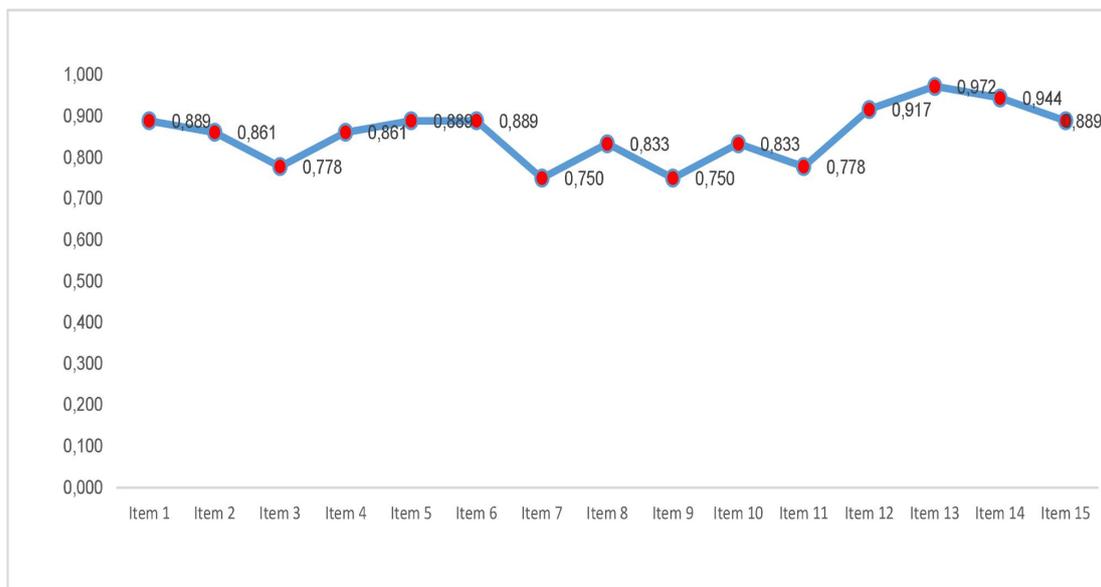


Figure 2. Distribution of instrument item Aiken index coefficients

In the image above, it displays the distribution level of items based on the Aiken index. Item 14 "I realize that Wolio's literature, dance, or vocal art is a culture that must be preserved" has an aiken index value of 0.944 (the highest). Item 7 "I know and know Wolio's literature, art or culture" has an aiken index score of 0.750 (the lowest) and Item 9 "I have been involved in Wolio's literary, artistic and cultural activities at school in the last 2 years" has an aiken index score of 0.750 (the lowest). There are 4 items with an aiken index value around 0.72, namely B3, B7, B9 and B11. There are 7 items with an aiken index around 0.80, namely B1, B2, B4, B5, B6, B8, B10, and B15. There are 3 items with an aiken index around 0.90, namely B12, B13, and B14. The distribution of the Aiken index values for 15 items is more detailed and can be trusted as an appropriate measurement tool. This finding is in line with the opinion of Murphy & Davidshofer (1991). Instrument items developed can reduce the variation of instrument measurement errors and reflect the ability of respondents. As stated by Azwar (2011) that an instrument (test) reflects the ability to be measured. Therefore, this instrument can already predict the ability of the respondent or individual to be measured.

The measurement instrument for the preservation of Wolio's language and culture was constructed from three indicators, namely: 1) knowledge and ability to speak Wolio/cultured, 2) support from the family, school and community environment, and 3) language and cultural attitudes. Based on the results of content validation, none of the items were invalid, meaning that all items measured the indicators correctly. Indicator 1 contains items B1 and B7. Indicator 2 contains items B2, B3, B6, B8, B10, and B12. Indicator 3 contains B4, B5, B11, B13, B14, and B15.

In Figure 3, it reflects the item categories, namely there are 2 items in the good category, namely B7 and B9. There are 13 items in the very good category, namely B1, B2, B3, B4, B5, B6, B8, 10, B11, B12, B13, B14, and B15. Items in the good category are in the range of scores $0.59 < V \leq 0.76$. Items in the very good category are in the range $0.76 < V \leq 1.00$. Good and very good quality instrument items can be used in individual assessments (Manaf et al., 2023).



Figure 3. Aiken index coefficient categories of instrument items

The Wolio language and culture preservation model measurement instrument based on content validity with the Aiken index approach gave very good results. All instrument items developed are valid based on expert judgment quantitatively. Therefore, this instrument can be used at the measurement and assessment stage.

4. Conclusion

Based on the research that has been conducted, it can be concluded that the instruments developed in the measurement model for preserving the Wolio language and culture have valid items. Furthermore, the instrument items fall within the good and very good categories. The instruments, which have undergone content validation stages, can already be utilized in the measurement and assessment of individuals. This demonstrates that efforts to preserve the Wolio language and culture have gone through a robust instrument development process that can be relied upon to measure and evaluate the outcomes of preservation endeavors. Therefore, these steps represent a positive initiative in safeguarding the richness of Wolio culture and language to ensure their continued vitality and growth.

References

- Allen, M.j., & Yen, W.M. (1979). *Introduction to measurement theory*. Monterey, Mexico: Brooks/Cole Publishing Company.
- Aiken, Lewis R. (1985). Three coefficients for analyzing the reliability and validity of ratings. *Educational and psychological measurement* 45(1), 131-142.
- Azwar, S. (2012). *Penyusunan skala psikologi*. Yogyakarta: Pustaka pelajar.
- Azwar, S. (2011). *Reliabilitas dan validitas*. Yogyakarta: Pustaka Belajar
- DeVon, H. A., Block, M. E., Moyle-Wright, P., Ernst, D. M., Hayden, S. J., Lazzara, D. J., ... & Kostas-Polston, E. (2007). A psychometric toolbox for testing validity and reliability. *Journal of Nursing scholarship*, 39(2), 155-164.
- Gronlund, N.E., Linn, R.L., & Miller, M.D. (2009). *Measurement & evaluation in teaching*. Tenth edition. New York: Macmillan Publishing Co., Inc.
- Guion, R. M. (1977). Content validity: the source of my discontent. *Applied Psychological Measurement*, 1(1), 1 – 10.

- Kamaluddin, LD & LD. Munafi. (2020). *Penyusunan naskah akademik rancangan perda pelestarian bahasa, aksara dan sastra wolio. Baubau*; (Belum dipublikasikan)
- Manaf, A., Adri, D., Aminu, N., Nur Arini, W. O., & Abdullah, N. (2023). Pelatihan analisis karakteristik item soal tes dengan menggunakan program iteman pada guru sekolah dasar negeri 2 wameo. *Jurnal Pelatihan Pendidikan*, 1(2), 70-81.
- Mansyur, F. A. (2016). Onina Manga Mancuana Mangenge: Kognisi Religi Orang Wolio (Linguistik Antropologis). *Journal Prassasti Conference Series*, 326-333. <https://jurnal.uns.ac.id/prosidingprasasti/article/view/1526>
- Mansyur, F.A. (2017). *Onina Manga Mancuana Mangenge: Kognisi Religi Orang Wolio (Linguistik Antropologis). The 8th International Seminar on Diaspora of Austronesian and Non Austronesian Languages and Literature in Indonesia, 199-208*. Denpasar, Bali: Faculty of Arts, Universitas Udayana.
- Mansyur, F.A. (2018). *Onina manga mancuana mangenge: traditional wolio* (Doctoral dissertation), from <http://digilib.fib.ugm.ac.id/digital/filter/960>.
- Mansyur, F.A., R. Said. (2020). A cognitive semantics Analysis of Wolio proverbs related to the human body. *1st Borobudur International Symposium on Humanities, Economics and Social Sciences (BIS-HESS 2019)*, 259-262. <https://www.atlantis-press.com/proceedings/bis-hess-19/125939499>.
- Mansyur, F. A., & Suherman, L. A. (2020). The Function of Proverbs as Educational Media: Anthropological Linguistics on Wolio Proverbs. *ELS Journal on Interdisciplinary Studies in Humanities*, 3(2), 271-286. <https://doi.org/10.34050/els-jish.v3i2.10505>
- Mansyur, F. A., Arsad, Nazar, A. ., Hikmah, I. ., & Zilani. (2022). A Model of Wolio Language Maintenance Strategies in Society 5.0. *ELS Journal on Interdisciplinary Studies in Humanities*, 5(2), 284-292. <https://doi.org/10.34050/elsjish.v5i2.21510>
- Murphy, K. R., & Davidshofer, C. O. (1991). *Psychological Testing: principles and applications*. New Jersey: Prentice Hall.
- Pandawa, R. M., Ridwan, A., & Mahdiyah. (2021). Analysis of the instrument content validity using the aiken index on disaster nursing competency assessment. *Degres*, 20(1), 298–308. <https://www.degres.pw>
- Rahman, F., & Weda, S. (2019). Linguistic deviation and the rhetoric figures in Shakespeare's selected plays. *XLinguage" European Scientific Language Journal"*, 12(1), 37-52.
- Retnawati, H. (2016). Proving content validity of self-regulated learning scale (The comparison of Aiken index and expanded Gregory index). *Research and Evaluation in Education*, 2(2), 155-164. doi:<http://dx.doi.org/10.21831/reid.v2i2.11029>