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## The development and validation of the Self-Confidence Scale (SCS): classical test theory analysis

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### ABSTRACT

The cultural context of Lombok, Indonesia, presents a unique backdrop for understanding and assessing self-confidence among students. Against this backdrop, the study aims to develop a self-confidence scale specifically tailored to the cultural nuances and characteristics of the region. The research sample, comprising 244 students selected through incidental sampling techniques, reflects the diverse socio-cultural landscape of Lombok. To ensure the validity and reliability of the developed scale, the study employs rigorous validation and reliability testing methods, including the Pearson Product Moment technique for validity testing and the Alpha Chronbach technique for reliability testing. The research results show that the Self-Confidence Scale (SCS) measures student self-confidence in Lombok accurately and reliably. With correlation values from 0.313 to 0.636, all SCS questions are legitimate. Cronbach's alpha of 0.842 indicates the SCS's high dependability. Thus, research into culturally appropriate self-confidence scales will ensure fairness and sustainability in Lombok student self-confidence initiatives.



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## Introduction

Lombok, an island paradise in Indonesia, boasts a rich cultural tapestry intertwined with breathtaking natural landscapes (Murdiasih, 2019). Within this vibrant setting, the concept of self-confidence holds significant relevance, intricately woven into the fabric of daily life and societal norms. Furthermore, Lombok's diverse cultural traditions, such as Sasak ethnic rituals and Islamic practices, contribute to shaping individuals' perceptions of self-worth and confidence (Murdiasih, 2019). Amidst the island's serene beaches and lush greenery, the spirit of self-confidence thrives, empowering Lombok's residents to pursue their aspirations with determination and conviction (Murdiasih, 2019). Thus, exploring the intersection of Lombok's cultural dynamics with the concept of self-confidence offers valuable insights into the holistic well-being and resilience of its people.

Confidence and self-confidence might be regarded synonymous. This concept has been commonly employed in the field of psychology since the latter part of the 20th century. Bandura (1978) initially introduced the notion of self-efficacy. Bandura defines self-efficacy as the conviction, assurance, competence, authority, and resolve that an individual possesses to accomplish a specific task successfully (Bandura, 1978). Self-confidence is a component of one's character that involves having faith in one's own abilities, remaining unaffected by external influences, and being able to behave according to one's own desires. It is characterized by feelings of happiness,

optimism, tolerance, and responsibility (Cook et al., 2015; Gürlü, 2015). Self-confidence is the belief that one possesses the ability to act in a manner that will yield desired outcomes. It entails a lack of anxiety, freedom to act according to one's desires and responsibilities, politeness in interpersonal interactions, a motivation for achievement, and an awareness of one's own strengths and weaknesses (Federičová et al., 2018; Oney & Oksuzoglu-Guven, 2015; Pettersson, 2018). The development of a self-assured mindset involves acquiring the skills to effectively react to different external stimuli by engaging with one's surroundings (Lawal et al., 2017). Self-confidence is not an innate trait but is acquired through life experiences and can be taught and cultivated through education. Efforts can be made to build and enhance self-confidence, as supported by research (Schneider et al., 2018). Therefore, self-confidence is formed and developed through the learning process and interactions with the environment. One of the traits of a someone who lacks self-assurance is their reliance on the evaluations made by others. The attributes of a confident individual include independence, selflessness, tolerance, ambition, optimism, assertiveness in expressing their own thoughts, and moderation (Unver et al., 2017). Lack of confidence in individuals often stems from a lack of self-education and a passive attitude towards others taking action on their behalf. Confidence is highly advantageous in all circumstances, and self-confidence indicates an individual's accountability for their tasks (Nadiah, 2019). As individuals lose confidence in themselves, others will become more developed. Humans, in this scenario, utilize their inherent capacities as social beings, relying on the assistance of others and employing problem-solving techniques to navigate the challenges they encounter (Harding, 2017).

In addition, the concept of self-confidence has been categorized by certain scholars into two components: self-efficacy and perceived efficacy (Bandura, 1978). Regardless of one's perspective, self-esteem encompasses numerous facets. These can be categorized as self-satisfaction and self-esteem, or alternatively referred to as "Start," "Don't Give Up," and "Persistence" (YILDIRIM & İlhan, 2010). His past experiences can be classified into four categories: witnessed experiences of others, persuasion, and affective experiences (Cassidy & Eachus, 2002). Regarding this matter, employees categorize their self-assurance into two aspects: internal and outward. Self-confidence refers to the condition of being content and satisfied with oneself. It can also involve having trust in both external and internal factors, such as trusting others and trusting one's own abilities (Özbeý, 2004).

Multiple research have demonstrated that teenage self-confidence is evident in their attitude of self-acceptance (Fitri et al., 2018; Hariko & Ildil, 2017). Self-acceptance is a mindset that demonstrates satisfaction with one's own circumstances. This attitude reflects contentment with the caliber of one's actual capabilities. Adolescents who experience contentment with their quality of life are more likely to feel secure, avoid disillusionment, possess self-awareness, and consequently, exhibit independence by making objective decisions without relying on others. Adolescents who possess self-assurance also have a favorable perception of themselves and a positive self-concept (Macher et al., 2013). Some individuals experience a decline in their self-assurance throughout several aspects of their lives, potentially due to personal turmoil, sadness, a sense of powerlessness, and an inability to see a positive future (Campos et al., 2015). There are also individuals that possess self-assurance in their abilities or actions. Some individuals may have reduced self-assurance in specific settings or conditions (Liu et al., 2019; Vanaja & Geetha, 2017). The aforementioned situations are commonplace in the human experience, as they have been universally encountered by all individuals. Multiple scales exist for assessing students' self-confidence levels, including those proposed by (Garant et al., 1995; Stankov et al., 2015). Currently, Indonesian academics have discovered just a limited number of scales that exclusively target self-confidence. In this instance, the researcher utilizes the confidence indicator to construct a self-confidence measurement scale, which is subsequently refined and adapted to suit the specific measurement requirements (Garant et al., 1995).

The use of a self-confidence test cannot directly measure students' self-confidence as it remains too general. Due to its widespread applicability and the fact that people reside in different countries, the concept of self-confidence is both universal and broad. Furthermore, the scale needs to be validated for use in Indonesia and adapted to suit the needs of classroom life in terms of social learning and student development, particularly within the cultural context of Lombok. This situation presents a research gap, indicating a lack of self-confidence tests tailored to Lombok's culture. How to do quantitative weighting of hidden qualitative events is the main problem with measurement in the social sciences and psychology (Andrich & Pedler, 2019). These things include character, personality, views, and the ability to keep going in school. 95% of psychological tests are still being made using the Classical Test Theory (CTT) method (Rachman & Napitupulu, 2017), mainly when it comes to ICT (Information and Communication Technology). There is an idea behind the CTT that the score that can be seen (X) is equal to the sum of the scores for pure (T) and error (E). This mistake refers to a number of things that can't be controlled, like being tired, the surroundings, etc. (Rachman & Napitupulu, 2017), especially when it comes to ICT (Information and Communication Technology). It will be checked to see if the new self-confidence tools are true (Taherdoost, 2018). Validity in a study instrument means that the tool is able to measure what it is supposed to measure (Borsboom et al., 2004). In this study, two types of validity were used:

logical validity and sampling validity. Logical validity checks how well a test sample can represent the whole research, while sampling validity checks how well a test sample can represent the construct or content validity. In addition, considering the many self-confidence scales that have been developed, it is important to investigate and develop one that is appropriate to the cultural context specifically in the Lombok area. This situation presents a research gap, indicating a lack of self-confidence tests adapted to Lombok culture. The aim of this research is to develop a valid and reliable Self-Confidence Scale (SCS) for students adapted to the Lombok area.

## Method

To conduct the questionnaire test, this study adopts a quantitative research method. Its design is cross-sectional, where data is gathered at a single point in time to analyze the relationships between variables in the studied population. This quantitative approach allows researchers to collect large amounts of data and apply careful statistical analysis to gain deeper insights into the phenomenon under study (Creswell, 2012, 2014). By employing a cross-sectional design, this research can provide a representative overview of the relationships between variables at the time of data collection.

### Participants

The study necessitates the inclusion of 244 students enrolled at MA Muallimat NW Pancor, situated in Pahlawan Pancor, Lombok East, NTB, as the sample size. Sampling is executed utilizing the incidental sampling technique, wherein participants are selected based on their incidental presence and accessibility during the data collection period within the specified educational institution and geographic location.

### Data collection technique

Data is collected by making a list of questions that will be used to test the questionnaire. The list of questions or questionnaire was created by the researcher himself based on existing theories. The questionnaire that has been made consists of an agreement sheet or what is usually called informed consent which is on the main sheet as proof that someone is willing to become a respondent. The instrument used self-confidence scale developed by Suhartiwi (2020), integrating a load of values (ta'lim muta'allim). Consequently, there were 13 indicators internalized on the self-confidence scale, including (1) belief and independence in seeking science, (2) intent to seek science, (3) how to select science, teachers, friends, and earnestness, (4) consciousness always respecting teachers, (5) responsibility, earnestness, and noble aspirations, (6) patience in demanding science, (7) effectiveness, optimism, and discretion, (8) commitment in determining the time of study, (9) honesty and care, (10) seeking additional knowledge, (11) being realistic and careful in demands of science, (12) logic thinking in learning, as well as (13) thinking rationally and honestly.

### Data Analysis Techniques

To achieve the research objectives, several things will be analyzed, including: 1) validity test of the Self-Confidence Scale (SCS); and 2) reliability test of the Self-Confidence Scale (SCS).

### Validity test

The validity of a research instrument can be ensured when each question in the questionnaire is able to fully reflect the concept that the questionnaire itself wants to measure (Ifdil et al., 2018; Syahputra et al., 2019). The validity indicator in the questionnaire is proven when the correlation coefficient ( $r$ ) of the test results exceeds the value determined as the critical value ( $r$  table). More specifically, if the correlation value for each answer in the list of questions exceeds the threshold of 0.3, then the question is considered to have adequate validity (Sugiyono, 2013). This research uses Pearson Product Moment analysis to test the validity of the instrument, illustrating a thorough and reliable approach in ensuring the validity and quality of the instruments used in collecting research data.

### Reliability Test

Reliability testing on research instruments is an evaluation process to determine whether the questionnaire used in data collection has achieved an adequate level of reliability (Erwinda, 2018; Rangka et al., 2018). In the context of this research, reliability testing was carried out using Cronbach's Alpha analysis (Sugiyono, 2013). The results of this test provide an idea of how consistent or reliable the questionnaire is in measuring the phenomenon under study. As a guide, if the Cronbach's Alpha value of a variable exceeds 0.60, it can be concluded that the variable can be considered reliable or consistent in measurement (Wadkar et al., 2016). This approach helps ensure that the data obtained from the questionnaire has a sufficient level of reliability to be used in statistical analysis and drawing accurate conclusions in research.

## Results and Discussions

This research applies two stages of careful analysis, namely: first, testing the validity of the Self-Confidence Scale (SCS) to ensure that the instrument accurately measures the construct of self-confidence in question; and second, the SCS reliability test to assess the level of consistency and reliability of the instrument in producing consistent results over time. These two stages of analysis ensure that the SCS is not only reliable as a tool for measuring self-confidence, but also reliable in providing valid and consistent data to support research findings.

### Validity Test

Construct validity measures the extent to which a measurement conforms to the expected theory (Sumintono, B., & Widhiarso, 2015). Research validity analysis was carried out using SPSS version 20 software, by comparing the value of each question item with the total value of all question items. If the correlation of one of the questions on the questionnaire is less than 0.300, then the question is considered invalid; whereas if the correlation is greater than 0.300, the question is considered valid (Irianto, 2015). The Product Moment technique was used to test the validity of this research. The results of validity testing using SPSS 20 show that the questions meet the requirements to continue in the analysis. Table 1 contains the results of validity tests carried out with the help of SPSS 20 software (IBM Corporation, 2011).

**Table 1.** Validity Test of the Self-Confidence Scale (SCS) Instrument

Code Item	Pearson Correlation	Significance	Information
BIS1	,470**	,000	Valid
BIS2	,369**	,000	Valid
BIS3	,408**	,000	Valid
BIS4	,399**	,000	Valid
ISS1	,331**	,000	Valid
ISS2	,313**	,000	Valid
ISS3	,528**	,000	Valid
ISS4	,673**	,000	Valid
SST1	,470**	,000	Valid
SST2	,483**	,000	Valid
SST3	,658**	,000	Valid
SST4	,435**	,000	Valid
CRT1	,435**	,000	Valid
CRT2	,470**	,000	Valid
CRT3	,426**	,000	Valid
CRT4	,391**	,000	Valid
CRT5	,335**	,000	Valid
CRT6	,645**	,000	Valid
REN1	,394**	,000	Valid
REN2	,383**	,000	Valid
REN3	,389**	,000	Valid
REN4	,337**	,000	Valid
REN5	,415**	,000	Valid
REN6	,335*	,000	Valid
PDS1	,367**	,000	Valid
PDS2	,455**	,000	Valid
PDS3	,454**	,000	Valid
PDS4	,613**	,000	Valid
PDS5	,428**	,000	Valid
PDS6	,546**	,000	Valid
CDT1	,325**	,000	Valid
CDT2	,326**	,000	Valid
CDT3	,578**	,000	Valid
CDT4	,308**	,000	Valid
SAK1	,390**	,000	Valid
SAK2	,475**	,000	Valid
SAK3	,394**	,000	Valid
SAK4	,557**	,000	Valid
HC1	,626**	,000	Valid

Code Item	Pearson Correlation	Significance	Information
HC2	,378**	,000	Valid
HC3	,308**	,000	Valid
HC4	,308**	,000	Valid
EPD1	,518**	,000	Valid
EPD2	,316**	,000	Valid
EPD3	,436**	,000	Valid
EPD4	,383**	,000	Valid
RCD1	,346**	,000	Valid
RCD2	,699**	,000	Valid
RCD3	,580**	,000	Valid
RCD4	,433**	,000	Valid
LTL1	,550**	,000	Valid
LTL2	,428**	,000	Valid
LTL3	,306**	,000	Valid
LTL4	,590**	,000	Valid
TRH1	,320**	,000	Valid
TRH2	,320**	,000	Valid
TRH3	,636**	,000	Valid
TRH4	,357**	,000	Valid

\*\* . Correlation is significant at the 0,01 level (2-tailed).

Information:

BIS = belief and independence in seeking science

ISS = intent to seek science

SST = how to select science, teachers, friends, and earnestness

CRT = consciousness always respecting teachers

REN = responsibility, earnestness, and noble aspirations

PDS = patience in demanding science

EPD = effectiveness, optimism, and discretion

CDT = commitment in determining the time of study

HC = honesty and care

SAK = seeking additional knowledge

RCD = being realistic and careful in demands of science

RTL = logic thinking in learning, as well as

TRH = thinking rationally and honestly.

Based on the results of the product moment correlation test, it shows that all the questions on the Self-Confidence Scale instrument are valid or significantly less than 0.05. The correlation range between the question items on the instrument includes values from 0.313 to 0.636. This shows variations in the relationship between these questions and the level of self-confidence measured by this scale. The existence of this range of values illustrates the complexity of the aspects measured by the instrument, and the results provide a more comprehensive picture of the concept of self-confidence measured by the SCS. Thus, these findings make a significant contribution to the understanding of the construct of self-confidence in the context measured by this instrument, and confirm the reliability and validity of the scale in measuring respondents' level of self-confidence. These results can provide a solid basis for further use of the SCS in research or interventions focusing on aspects of self-confidence.

### Reliability Test

The reliability of an instrument refers to the stability of a measurement and consistency in measurement. In this study, Cronbach's Alpha was used to see the consistency of the items (Williams, 1984).

**Table 2.** Reliability Test of the Self-Confidence Scale (SCS) Instrument

Cronbach's Alpha	Based on Standardized Items	N of Items
0,842	0,878	58

The reliability of the SCS instrument demonstrates a very high level of consistency, as evidenced by the Cronbach's alpha value of 0.842. To further clarify the strength of the most robust consistency, the reliability per item is presented in Table 3. This helps elucidate the extent to which each item in the instrument contributes to the overall reliability and consistency of measuring self-confidence.

Table 3. Reliability Test Per Item

Code Item	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
BIS1	214,9	244,8	,356	,847
BIS2	213,7	240,8	,403	,845
BIS3	212,7	237,9	,362	,839
BIS4	212,8	241,4	,144	,842
ISS1	213,0	240,9	,158	,842
ISS2	212,5	238,9	,258	,840
ISS3	212,1	239,1	,514	,838
ISS4	212,1	237,2	,641	,837
SST1	213,1	242,0	,122	,843
SST2	213,0	239,3	,251	,840
SST3	212,4	232,7	,641	,834
SST4	212,9	243,9	,463	,844
CRT1	212,6	242,4	,470	,845
CRT2	215,0	243,5	,437	,846
CRT3	213,3	238,8	,187	,842
CRT4	213,6	236,6	,354	,838
CRT5	213,8	247,0	,362	,847
CRT6	212,4	233,5	,622	,835
REN1	212,5	237,5	,359	,839
REN2	212,7	237,2	,329	,839
REN3	212,5	238,8	,267	,840
REN4	213,6	239,9	,192	,842
REN5	213,2	232,4	,372	,838
REN6	214,2	244,2	,437	,845
PDS1	213,5	235,3	,320	,839
PDS2	212,6	238,1	,429	,838
PDS3	212,6	235,1	,410	,837
PDS4	212,4	234,2	,584	,835
PDS5	213,1	237,9	,383	,838
PDS6	212,7	234,7	,516	,836
CDT1	213,3	238,3	,271	,840
CDT2	215,3	248,4	,144	,846
CDT3	212,6	233,7	,553	,835
CDT4	214,0	240,9	,146	,843
SAK1	213,5	239,2	,235	,841
SAK2	212,7	236,0	,434	,837
SAK3	213,1	238,7	,232	,841
SAK4	212,8	234,5	,530	,836
HC1	212,4	233,8	,599	,835
HC2	213,4	240,1	,219	,841
HC3	214,3	248,6	-,108	,849
HC4	214,4	250,0	-,149	,850
EPD1	212,7	234,7	,484	,836
EPD2	213,5	240,6	,347	,843
EPD3	213,0	234,8	,396	,837
EPD4	212,6	235,8	,326	,839
RCD1	213,3	234,9	,291	,840
RCD2	212,2	234,3	,671	,835
RCD3	212,5	234,2	,549	,836
RCD4	213,0	235,5	,393	,838
LTL1	212,7	234,7	,519	,836
LTL2	213,4	232,2	,391	,837
LTL3	213,5	238,6	,252	,840
LTL4	212,6	235,2	,558	,836
TRH1	214,5	239,7	,163	,843
TRH2	214,1	236,9	,277	,840

Code Item	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
TRH3	212,6	234,5	,612	,835
TRH4	214,4	238,6	,206	,841

Information:

BIS = belief and independence in seeking science

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EPD = effectiveness, optimism, and discretion

CDT = commitment in determining the time of study

HC = honesty and care

SAK = seeking additional knowledge

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RTL = logic thinking in learning, as well as

TRH = thinking rationally and honestly.

Further analysis shows that each question item contained in the Self-Confidence Scale (SCS) provides a high Cronbach's alpha value, namely 0.834 and 0.850. These values indicate a very good level of internal consistency in the SCS instrument for measuring students' level of self-confidence. A high Cronbach's alpha value indicates that each question item correlates well with each other, indicating that this instrument consistently measures the concept of self-confidence in question. This strong consistency provides additional confidence in the validity and reliability of the SCS as an effective tool for evaluating student self-confidence. Thus, these findings confirm that the SCS not only has strong statistical validity, but also offers consistent reliability in measuring student self-confidence. This provides a solid foundation for researchers, practitioners, and policy makers to use the SCS in the measurement and evaluation of student self-confidence levels with high confidence in its accuracy and consistency.

Self-confidence is a crucial prerequisite for individuals to engage in activities and foster creativity in order to get success (Hidayati & Hidayah, 2020). Nevertheless, self-confidence does not develop autonomously. Self-confidence is a crucial trait that students must possess in order to develop the 4C competencies required to navigate the challenges of the 21st century. These competencies include critical thinking (Rohmat & Lestari, 2019), creativity (Herawati et al., 2019), effective communication skills (Siska, 2003), and the ability to work collaboratively (Rozi & Fatimah, 2019). As we confront the challenges of the 21st century, Self-confidence is nurtured by a robust and ongoing process of social interaction within an individual's environment. Self-confidence is not inherent in an individual; rather, it is developed through certain processes inside their personality, leading to the construction of confidence (Schneider et al., 2018).

Self-confidence is a crucial factor in enabling individuals to reach their maximum capabilities. When expertise and sufficient skills are merged with self-assurance, a favorable mindset will ensue, ultimately leading to positive transformation. Hence, there is a want for a reliable self-confidence scale to accurately assess the level of self-assurance among students. Thus far, numerous individuals have utilized and completely embraced the confidence scale developed by Lauster (Şar et al., 2010; Swanepoel et al., 2016). Nevertheless, there is currently no confidence measurement tool that is specifically tailored to the requirements and characteristics of the research subjects to be encountered. Findings make a significant contribution to the understanding of the construct of self-confidence in the context measured by this instrument, and confirm the reliability and validity of the scale in measuring respondents' level of self-confidence. These results can provide a solid basis for further use of the SCS in research or interventions focusing on aspects of self-confidence.

The presentation of the results of this research illustrates the gaps that exist in the development of a self-confidence scale that is appropriate to the Lombok cultural context. The findings showing the high reliability and consistency of the Self-Confidence Scale (SCS) provide an important foundation for further research aimed at filling this gap. The implications of this research highlight the urgent need for the development of a more culturally sensitive self-confidence scale, which can provide a more accurate picture of students' levels of self-confidence in the Lombok area. Further research in this area could enrich understanding of the concept of self-confidence in diverse cultural contexts, including the cultural values and norms that influence individuals' perceptions and experiences of self-confidence. By delving deeper into relevant cultural aspects, the development of a more precise self-confidence scale can provide richer and in-depth information about the dynamics of student self-confidence in Lombok.

Additionally, efforts to develop culturally sensitive self-esteem scales can also expand the accessibility and relevance of measurement instruments for populations that may not be well represented by existing scales. This will enable educational researchers and practitioners to more effectively identify the specific needs and challenges faced by students in Lombok in terms of developing self-confidence. Thus, continued research in developing culturally adapted self-confidence scales will be an important step in ensuring fairness and sustainability in efforts to increase student self-confidence in Lombok.

## Conclusions

The research results show that the Self-Confidence Scale (SCS) is valid and reliable for measuring student self-confidence in the Lombok area. All SCS questions are valid, with correlation values ranging from 0.313 to 0.636. And the reliability of the SCS shows a very good reliability value, as evidenced by the Cronbach's alpha value of 0.842. Thus, continued research in developing culturally adapted self-confidence scales will be an important step in ensuring fairness and sustainability in efforts to increase student self-confidence in Lombok.

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