

## Validity and Reliability of Futsal Coach Competency Evaluation Instruments

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### ABSTRACT

**Background:** The study of the futsal coach competency evaluation instrument was done because there was no any existed instrument used to measure the futsal coach competence. **Objective:** This research aims to determine the validity and reliability of the futsal coach competency evaluation instrument. **Method:** the validation and reliability instruments were determined using three quantitative methods in the main phases or steps, which are expertly judged (content validation), theory test (logical validation) and data test (construct validation). The research was done by distributing questionnaires via a google form. **Result:** The instrument validity data is based on the average score of the research subjects assessment. Media experts scored 90.71%, 89.5% and 93.3% in 3 aspects. While material experts scored 87.69%, 85.38%, and 96.15% in 5 aspects. The KMO and MSA factors analysis test covers four competencies results: personality 0.893, social 0.884, intellectual 0.886 coachings 0.782. The instrument is valid based on the value range of 0.517-0.954. The instrument's reliability, divided into four competencies, is reliable because the Cronbach alpha score is higher than 0.7. **Conclusion:** The findings of this study brings a new insight that the coach's competence needs to be measured using appropriate, valid and reliable instruments. The results in this study are a competency evaluation instrument consisted of 4 competencies (personality, social, intellectual and coaching). This research will certainly provide a positive point to evaluate the competencies owned by futsal coaches.

**Key words:** Coach Competence, Futsal, Evaluation, Instrument, Validity, Reliability

### INTRODUCTION

In these last few years, before Covid 19 appeared, Indonesian were experiencing a futsal trend. It was shown by the emergence of many new futsal academies in various regions throughout Indonesia. The establishment of new Futsal academies surprisingly got excellent attention and support from all backgrounds of society. However, along with this new trend, a new problem emerged. It was related to the qualifications and competencies of futsal academy coaches whose standards had not been met its standards. It is feared that this will harm future generations if each coach has suitable qualifications and competencies. A coach must be able to organise, design and plan superior training sessions and manage any match to determine and identify any factors that can be controlled (Masanovic, Gardasevic, & Bjelica, 2021).

Futsal is a type of football played indoors or outdoors in a small stadium with fewer goals scored by a smaller team (4 players + 1 goalkeeper). The ball size is smaller than the standard football's size. The ball can bounce less. Besides, Futsal is played over two time 20-minute, and it is mostly indoors, with court dimensions 25-42 meters long and 15-25 meters wide (Farhani et al., 2019). Futsal is played with high intensity (indoor version of football played by five players

per team) with a playing field dimension of 40 x 20 m. In addition, there are no limit changes. The players play in all positions constantly, such as defending and attacking. Futsal players play in high intensity, such as sprinting, acceleration, de-acceleration and changing the game's direction, involving the aerobic and anaerobic metabolic systems (Yustika, Iswati, Subagyo, & Suryanto, 2019).

Futsal is a general sport that stands alone and is very different from football in terms of game rules and tactical action (Asshagab, Dlis, & Widiastuti, 2020). Despite the different rules, football and Futsal are similar in several points, such as sports culture and player action (Marques, Schubring, Barker-Ruchti, Nunomura, & Menezes, 2020). Apart from the popularity of Futsal and the news on the media, many futsal events are held is. As the result, many new studies are held to examine anything about futsal (Lago-fuentes, Rey, Padrón-cabo, Prieto-troncoso, & Garcia-núñez, 2020; Serra-Olivares, Garcia-Lopez, & Guncalves, 2019). Futsal is the sport that soccer athletes in Brazil choose to change careers (Mascarin, Vicentini, Francisco, & Marques, 2019).

Futsal Academy is expected to have a licensed coach already. His ability cannot be doubted in terms of coaching because the preparation of high-quality coaches supports

them. However, this is in contrast to the coaches in the regions. They have not qualified as qualified coaches because they are rarely involved in training activities to upgrade their competence, especially since the training activities usually require a lot of nominal fees. In contrast, the academy coach's income is still meagre; this is the difference between the competence of the coaches in the Academy, which have been managed professionally and those who have not; this does not close any of the possibility that there will also be a fertile futsal academy growth. Therefore, it is necessary to conduct a broad and thorough study of the futsal academy coach.

During the increasing number of futsal academies simultaneously, there is unfavourable feedback about the quality produced by the futsal academy. The unsupportive assumption is not only about its facilities but also other aspects. For its physical facilities, If the futsal building has good quality and its stadium is attractive, it increases interest (Hera, 2020), yet many coaches have not been standardised. Through the prior survey, the research shows that many coaches do not have a futsal coaching certificate. However, in this modern era, all professional fields or aspects need competency standardisation that should be mastered as the essential crucial determination to determine the minimum basic ability. This matches with the fact that is evaluating Futsal coach's competency of a Futsal Academic has not ever been conducted because there was no valid instrument to be used. Most professional development related to coaching knowledge of technical skills, tactical skills, and holistic coaching approaches is often done informally in peer meetings instead of formal education settings. (Walker, Thomas, & Driska, 2018). Coaching, which is at the core of coaching practices such as specialised training, individual training, team training and coaching development centres, requires a clear set of coaching competencies to deliver its message to clients, individuals, organisations and professions. Therefore, the competence of coaches is more crucial than ever (Slabbert & Hoole, 2021), even though coaches recognise that they have specific knowledge gaps (Gregory & Levy, 2011).

Coaches should take a role as instructors, teachers, trainers, scientists, fathers, managers and others (Gillet, Valleranda, Amoura, & Baldes, 2010). The coach's role is to provide supportive social circumstances through leadership in coaching, which should pop up as an adaptive coaching behaviour (González-garcía, Martinet, Nicolas, Martinet, & Nicolas, 2020). This happens because if leadership continues to be developed, it will support improving the inexperienced coach's performance sustainably (Huggins, Klar, & Andreoli, 2020). Coaches play a role in detecting the quality of players whose behaviour reflects the intelligence of the game in sports and the ability to read the game and adapt quickly (Vestberg et al., 2020). The statement above is the basis to know the role of the futsal academy coach as described.

Competence is the ability that someone has in some scopes of insight, attitude and performance skill in working with certain specific standards (Sucipto, Mutohir, & Sudijandoko, 2017). The main point of competence that has been understood so far is that it consists of mastery which includes three aspects of ability, including *attitude* (be-

haviour), *knowledge*, *science* (knowledge) and *skills*, *technology* (technical skills) Broke & Stone cited (U. Rohman, 2017). A competent coach means a coach who can explain and demonstrate any knowledge so that the trained athletes can master the concepts and movements appropriately and correct techniques (U. Rohman, 2017). As stated by (Klooster & Roemers, 2011), a coach must have competencies such as knowledge, skills, attitudes and personal character). Based on the collected data through interviews with several coaches, 87.5% stated that the competence of their coaches had never been measured and evaluated. While there was 12.5% of the interviewed stated that they had been evaluated only on the physical ability that can be clarified by the fact that to assess the competence of the futsal academy coaches who have attended, it is based on the aspect of mastery of knowledge only; the preparation of training programs. Evaluation on the skill aspect is based on the achievements achieved, seen in the final results when participating in a tournament or competition to win or not. Hence, it cannot be used as a valid reference to measure the competence of futsal academy coaches in the skill aspect.

Meanwhile, the assessment based on perception, which is also one of the aspects of competence that must be a concern by the coaches, has never been evaluated. Furthermore, the coach's competence has a relevant impact on the competence of the coach's career development, competence in strategy in the game, motivation in playing and playing techniques (M. F. Rohman & Tuasikal, 2017). The competence owned by coaches has a close relationship with the athlete's achievement because it relates to the coach's attitude to support self-development and the positive nature of the athlete. A coach guides the athlete who is competing. A coach also gives psychological impact and encouragement to the athlete, transfers the coach's ability to train, and analyses athletes' ability (Purnamasari, 2011). This matches with the statement submitted by (Klooster & Roemers, 2011) that a coach must have competence (knowledge, skills, attitudes and personal character). Sulaiman's perspective about the ability of a trainer cited by (Putro, 2020)) that someone who can provide, educate, direct, guide and evaluate during inculcating positive values is very much needed for participants in activities in a club. Based on the collected data through interviews with the Futsal Coaches, the coaches stated that their competence had not been evaluated because there was no specific evaluation instrument for Futsal coaches. The coaches agreed that if the competence evaluation instrument was created, it could be used to develop the coaching ability that was accurate for its validity, reliability of the evaluation instrument. It could be used as the additional tool to evaluate all coaches' competence based on four competence points; personality competence, social competence, intellectual competence, and coaching competence in general.

Based on the coaches' aspects, roles, influences, and relationships above, a coach must have the competence to support the coaching tasks. Understandably, the competence of coaches is very much needed in guiding and improving the achievements of futsal athletes. Sulaiman's opinion about the ability of a trainer cited by (Putro, 2020)) that someone who can provide, educate, direct, guide and evaluate during the

process of building or teaching positive values is very much needed for participants in club activities. The Steps to find out and evaluate the performance of the coaches are related to the coach's competence through the evaluation and measurement process. This activity certainly requires valid and reliable instruments or tools. This research emphasises the evaluation development to evaluate Futsal coach's competence and quality in the coaching competence aspect. This research was done because there was no useable instrument that could be used to measure and evaluate the Futsal Academic Coach specifically. The research does not support the needs of every futsal academy coach who should have knowledge and skills about the coach's competence. Competent coaches can create an athlete who has the quality, bringing positive impacts to the coach. Hence, the development of this instrument is crucial and urgent so that it can immediately be used to evaluate, measure, and map the competence of futsal academy coaches. Furthermore, the evaluation results obtained can be used to conduct diagnostic feedback so that the trainer's competence can be improved and improved optimally.

Several studies that became the inspiration in writing this research are conducted by (Demers, Woodburn, & Savard, 2006). The competency-based training for trainer or coach education can be implemented (Slabbert & Hoole, 2021) resulted in 11 competencies that must be possessed by coaches (Hatala & Hisey, 2011)); this study found eight universally applicable coach competencies (Sucipto et al., 2017) the soccer school coach competence instrument (*CCI-FS*) a total of 33 instruments developed can be used to evaluate the competence of a soccer school coach validly and reliable. This study will allow the instrument to be used to evaluate the competencies possessed by futsal coaches. The purpose of the study was to determine the validity and reliability of the futsal coach competency evaluation instrument.

## METHOD

### Participants and Study Design

#### Study design

This research aims to find out the validity and reliability of the futsal coach competency evaluation instrument. This study utilised a single visit cross-sectional descriptive design to evaluate the validity and reliability of futsal coach competency evaluation instruments. The qualitative methods are expert judgement (content validation), theory test (logical validation) and data test (construct validation). The research was done by distributing questionnaires via a google form. This instrument covers four competencies. Those competencies are as follows 1) Personality competency. It refers to the indicators of coaches competence who can be role models for players, 2) Social competency. The indicator is about how the coaches work in a team and interact with one another; 3) Intellectual competency. The indicator is about how the coaches think and solve problems in organising, management and evaluation, 4) Coaching competency. The indicator is about the capability of the coaches to use correct training methods and have the latest technical skills, tactics, and strategies that match with the players' growth.

### Participants

The sampling technique is cluster random sampling. This technique is used considering the extent of the location where the population research is located. The sampling technique used is two-stage cluster sampling. This technique uses two stages of taking a sample. The first stage is to determine the sample area, and the following stages determine the people in the area (Rojali, Budi, Nurcahyo, & Febriani, 2021). The participants of this study were 55 participants. Two media experts worked as lecturers, and three futsal experts trained or coached the Futsal players in the professional league. Other participants were from 6 futsal academies. They were six futsal academy managers, 12 coaches and 32 futsal academy players. The inclusion criteria in this study were for futsal academy managers who actively supervised futsal training within a minimum period of 1 year, coaches who actively provided futsal training within a minimum period of 1 year, and players categorised as those who actively participated in futsal training for a minimum period of 1 year. There were no criteria regarding gender and ownership of a futsal coaching license in this data collection.

The exclusion criteria in this study were that coaches and managers did not fulfil the requirements to be used as research subjects if they had not worked for at least one year. It was because they would not be able to see the extent of the abilities possessed by a coach through the performance; this happened to the players who were not 15 years old yet and had not practised Futsal for one year. They were not selected as research subjects. 15-year-olds participants were able to understand abstract ideas. They could understand problems by looking at the right and wrong sides. They were expected to provide a comprehensive assessment based on the existing facts used by players who still had training for less than one year. It would be not good if the players did not know the character and abilities of the coach. Thus, this would be feared to be careless in making assessments. This research followed the ethical clearance, which requires signed consent to participate voluntarily in research, rights to quit the research anytime, protection of anonymity, and personal data secret. Each participant was asked to sign an informed consent form describing the purpose and process of the study and their rights. Participation was voluntary with no additional credit or compensation. All research data were collected for two months.

### Procedure

The collecting data method was in the form of a questionnaire. Google form is used because it is constrained to meet people in person during this covid 19 pandemic. The validation of this research was done through reliability test (content validation), theory test (logical validation) and data test (construct validation). At the same time, expert judgement is done to determine the reliability of the product. It aims to find out the minus points that maybe exist in the *blueprint* to fix the manual book according to the suggestions given by the experts. The theory test is done by collecting relevant previous studies to support this research. While the data test

(construct validation was held by processing the collected data using SPSS software version 23 and the percentage formula. The details of categorisation of the expert judgement instrument and product practicality test were described as follows: the grille questions to measure the media experts have consisted of 40 questions (14 reliability questions, 20 graphic reliability questions, six language reliability questions), material expert judgement of 26 questions (8 self-instruction questions, six self-contained questions, two stand-alone questions, four adaptive questions, six user-friendly six questions), and trial assessment to determine the validity and reliability of was consisted of 92 questions. The instrument used in all stages and processes of data collection on expert judgement and product testing was in the form of a questionnaire containing statements that were measured using numeric (*rating scale*) specifically *type rating scale*. A numerical rating scale is a statement about a certain quality that will be measured by a number followed by quality score measured, according to Widoyoko cited by (Asriansyah, 2018).

Experts did the data gained from the validation stage, and the trial test result was done on a small scale. The test result was in the observation place to determine the product's reliability using the percentage formula. According to Arikunto (Stewart et al., 2021), if the data is in percentages, proportions and ratios, the conclusions can be taken and adjusted to the problems. At the field trial stage, the data obtained were also analysed by factor analysis. This analysis factor consisted of several things. These were the analysis factors. 1) reducing the irrelevant instrument items, 2) collecting the validity of the content, logic and construct. The valid and reliable instruments can be collected because the conditions have been met (Setiawan, Sa'dijah, & Akbar, 2017). The expert judgement criteria used were the results which concluded that it was not valid and ineligible (0-20%), less valid and eligible (21-40%), valid and eligible enough (41-60%), valid and eligible (61-80%), very valid and eligible (81-100%) (Firmansyah & Hariyanto, 2019).

### Statistical Analysis

The prerequisite test was done to do the following analysis process of factor analysis on the instrument items that were being developed. By doing this, the factor analysis could be determined. Several prerequisite tests that had to be done were as follows: 1) The *Kaiser-Meyer-Olkin (KMO)* test (Larassary, 2020) was to test the accuracy of factor analysis based on 0.5-1.0 criteria that appeared appropriately factor analysis. While, the inappropriate factor analysis criteria could be seen from a score of less than 0.5, 2) *Measuring of Sampling Adequacy (MSA)* was the primary requirement that had to meet the demand in using the KMO test that was higher than 0.5, 3) *Bartlett's Test Of Sphericity* (Hanief & Purnomo, 2019) was the approach used by *Chi-Square* is a significant provision of less than 0.5. Further analysis can be done while if the significance was higher than 0.5; there was no further analysis that could be done.

The validity test to test the validity of the evaluation instrument is developed by using SPSS Version 23 to make

the calculation process easier. The reliability test used in this study was the Cronbach *alpha* coefficient (Tomoliyus & Sunardianta, 2020). The reason was to help the researcher knew how consistent the measurement was. The criteria used were reliability scores that were equal to or higher than 0.70. Thus, it can be stated that reliability is well-received (Pratama & Pasaribu, 2020).

### RESULT

The data were obtained from the five experts, who were consisted of 2 media experts and two material experts. The data could be used as the foundation to conclude that the developed instrument was eligible to be used and tested. The detailed data about the reliability of the data obtained could be seen below:

The data obtained from those two media experts (Figure 1) assessing the reliability was as follows: reliability content (87.4% and 94.29%), graphic reliability (88% and 91%), language reliability (90% and 96.7%). The next expert judgement data was obtained from three material experts and the results were follows: self-instruction (92.5%, 85%, 100%), self contained (80%, 86.7%, 93.3%), stand-alone (80%, 80%, 100%), adaptive (80%, 85%, 85%), user friendly (96.7%, 86.7%, 100%). The data obtained from the assessment of 5 experts consisted of 2 media experts and three material experts could be used to conclude that the developed instrument is feasible to be used and tested. Detailed data about the reliability of this instrument was the average score of media experts on the aspect of content reliability

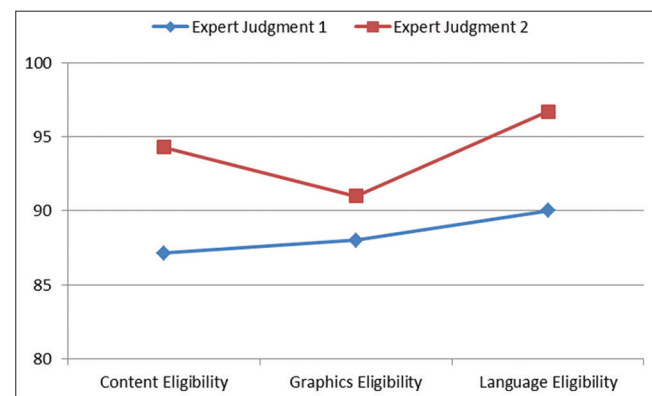


Figure 1. Media expert judgement.

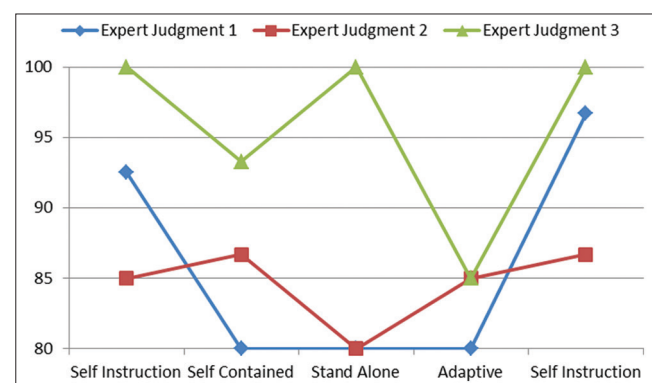


Figure 2. Material expert judgement

(90.71%), graphic reliability (89.5%), and language reliability (93.3%). While the material expert data (Figure 2) on five aspects, namely Self Instruction, Self Contained, Stand Alone, Adaptive, Self Instruction was the first material, expert (87.69%), the second material expert (85.38%), the third material expert (96.15%).

The following data is related to factor analysis, validity, and reliability using SPSS software version 23. The conclusion was drawn to determine factor analysis, validity and reliability that were done on the instrument based on the Kaiser-Meyer-Olkin (KMO) Test, Measure of Sampling Adequacy (MSA), Bartlett's Test of Sphericity and also the comparison of  $r$  arithmetic with  $r$  table for validity, to determine the reliability that was based on coefficient comparison using Cronbach alpha. The bellow analysed data was done to four instruments divided into four competencies, namely personality, social, intellectual and coaching competencies. The data can be seen in detail in the table below:

The result after analysing the data was that it could be concluded that the instrument could be analysed further based on the Kaiser-Meyer-Olkin analysis factor test and the Measure of Sampling Adequacy (Figure 3) to analyse the personality competence 0.893, social competence 0.884, intellectual competence 0.886 and coaching competence 0.782

The instrument was declared valid after it was analysed (Figure 4). It had its minimum and maximum score in each competency instrument. In detail, personality competency was 0.778-0.928, social competency was 0.678-0.954, intelligence competency was 0.614-0.888, and coaching competency was 0.517-0.914. However, two instrument questions must be deleted because the  $r$  count was less than the  $r$  table, 0.279. On the other hand, the reliability of the instruments (Figure 5), which were divided into four competencies, was reliable because the Cronbach alpha value was higher than 0.7. Personal competence was 0.987, and social competence was 0.982, intelligence competence was 0.972 and coaching competence was 0.985.

**DISCUSSION**

The Instruments can be declared reliable and used based on the factor analysis, which consists of several things that must be done. Those are as follows; 1) reducing strongly irrelevant instrument items, 2) fulfilling the content, logical and construct validity. Valid and reliable instruments will be obtained because the conditions have been met (Setiawan et al., 2017). This conclusion is based on the data that had been collected and analysed meticulously. In this study, content validation was obtained from the assessment of 5 experts with details of 2 media experts and three material experts. Logical validation was the result of reasoning related to instruments designed per existing theories. While construct validation is obtained through testing using SPSS version 23 to get an overview that showed how valuable the test tool was equal to the theory.

The research's results of this study were the assessment instrument for evaluating the competence of futsal coaches divided into four competencies (personality, social, intellectual and coaching) and to support several studies on

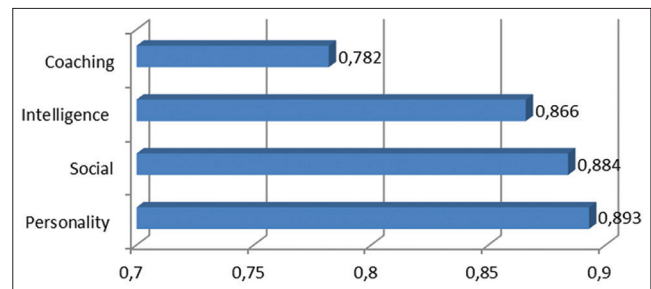


Figure 3. Analysing the factor of Kaiser-Meyer-Olkin (KMO) test, Measure of Sampling Adequacy (MSA)

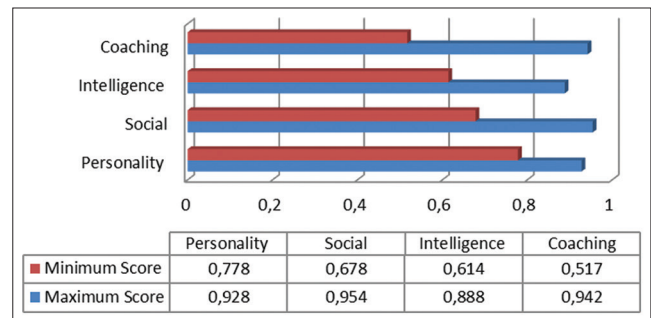


Figure 4. Validity test by using SPSS versi 23

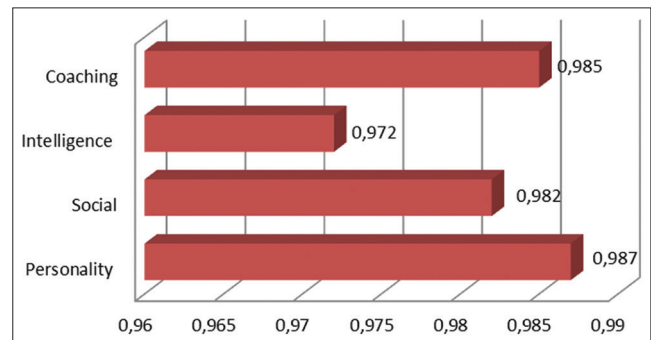


Figure 5. Reliability by using SPSS versi 23

coaching competencies that were conducted by several researchers such as (Slabbert & Hoole, 2021) who resulted in 11 competencies that must be possessed by coaches, (Hatala & Hisey, 2011) who found eight coach competencies that could be applied universally. The competencies of coaches were grouped into four competency dimensions known as the *Coaching Competency Scale (CSS)* (Myers, Beauchamp, & Chase, 2011). Moreover, research results (Ntasis, Panagi, Strigas, Koronios, & Dashi, 2021) concluded that coaches had four competencies. According to (Moen, Federici, & Klemetsen, 2014), the grouping of competencies of coaches is divided into six dimensions of competence. According to (Sulaiman 2014), the competence of coaches consists of 8 dimensions of competencies that coaches must possess. (Sucipto et al., 2017) a soccer school coach competency instrument (CCI-FS) of 5 competencies with the results of the developed instrument can be used to evaluate the competence of a soccer school coach validly and reliably into eight competencies (Chroni, Dieffenbach, & Pettersen, 2021). (Demers et al., 2006) competency-based training for coach education can be implemented.

The importance of coach competencies that must be possessed. Hence, the coaches can be evaluated according to the results of research conducted. (Chiu, Mahat, Ahmad Marzuki, & Poy Hua, 2014) Stated that coaches who had competence show differences in their use and training style in providing motivation, explaining strategies and playing techniques, and building the athlete's character. That was because that difference would have a different impact on the training process results (Chiu et al., 2014) stated that coach's competency showed differences in the use and style of training in providing motivation and explaining playing strategies and techniques and when building athlete character. That was because that difference would have a different impact on the results of the training process. Athletes who knew the competence of their coach would be happier and were more enthusiastic in practising (Pulido, Leo, & Sa, 2020).

The competence of coaches influences the development of athletes in the future. future (Zuñiga-collazos, Castillo-palacio, Montaña-, & Castillo-arévalo, 2019) And (Kavassanu, Boardley, Jutkiewicz, Vincent, & Ring, 2008) stated that athletes' lives were influenced by how their coaches treat them. However, research (Santos, Mesquita, GRAÇA, & Rosado, 2010) about the coach's competence indicated that most coaches already had competence but still needed specific additional training. (Zetou, Filippou, Filippou, & Vernadakis, 2016) Stated that the perception of coach competence in team sports done by young athletes could be measured using the Athletes' Perceptions of Coaching Competency Scale II-High School Teams questionnaire developed by Myers, Chase, Beauchamp and Jackson.

The limitations of this study and recommendations for future studies are the finding and the formula of a futsal coach profile seen from the competencies that the coaches must possess. Having no coaching competence is the reason for not achieving optimal futsal achievement. It needs attention to be studied and researched fundamentally. One of the reasons is the competence of the coach. The role of a coach is to shape players' character and behaviour that are applicable in society; this matches the opinion of (Ibáñez, García-Rubio, Antúnez, & Feu, 2019) that coaches have a significant impact on young athletes concerning psychosocial development. Hence, it can be stated that the coaches must have knowledge and master the theory and methodology of training (Bores-García, Hortigüela-Alcalá, Fernandez-Rio, González-Calvo, & Barba-Martín, 2020)(González-Ravé, Hermosilla, González-Mohino, Casado, & Pyne, 2021).

### Strength and Practical implication of the study

The results in this study are a competency evaluation instrument consisted of 4 competencies (personality, social, intellectual and coaching); this will certainly provide a positive point to evaluate the competencies owned by futsal coaches. This research will have a tremendous impact on the development and achievement of Futsal because the results of this study can be used as references and recommendations as to the basis for the central policy of the futsal organisation in formulating and mapping a more specific futsal coach competency profile and contributing to the development of futsal

sports coaching as a basis for the achievement of increasing the optimal performance of national Futsal in the future.

### CONCLUSION

This research finding gives a new insight that a valid and reliable instrument must measure a coach competency. These research results are a competency evaluation instrument consisting of 4 competencies: personality, social, intellectual, and coaching. The quality of a competency description that should be possessed by a coach conceptually Those competencies are as follows 1) Personality competency, 2) Social competency, 3) Intellectual competency, 4) Coaching competency. This instrument is valid and reliable because it has fulfilled the pre-requirements, which are expert judgement (content validation), theory test (logical validation) and data test (construct validation). The overall results in this study are as follows; The instrument validity data is based on the average score of the research subjects assessment. Media experts scored 90.71%, 89.5% and 93.3% in 3 aspects. While material experts scored 87.69%, 85.38%, and 96.15% in 5 aspects. The KMO and MSA factors analysis results cover four competencies: personality 0.893, social 0.884, intellectual 0.886 coachings 0.782. The instrument is valid based on the value range of 0.517-0.954. The instrument's reliability, divided into four competencies, is reliable because the Cronbach alpha score is higher than 0.7. Through the competency evaluation instrument, the Futsal coach will be motivated to give the coaches an evaluation competency test or require the coaches to have the competency; this will certainly provide positive points to evaluate the competencies owned by futsal coaches.

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