ISSN 2964-4291
https://proceeding.unnes.ac.id/index.php/iset

Sport Training Program Monitor Based Android in Petanque Sports: Validity and Reliability Instrument

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Abstract. The problem in this study is that the validity and reliability of the Sports Training Program Monitor application test are not known. The population in this study were all petanque athletes jawa tengah province and petanque coaches who were licensed at least at the provincial level which had a total of 114. The sampling technique in this study was purposive sampling. The sample in this study amounted to 30 samples. A total of 30 questions were asked. The results of this study are the calculated r value with n = 30 is 0.349, of the 30 questions submitted to the respondents, totaling 30 coaches and athletes, there are 26 questions that have a validity value of more than 0.349 and 4 questions have a value of less than 0.349. The reliability value of this instrument is 0.923 > 0.349, which means that this instrument is reliable. The conclusion from the results of the validity and reliability tests, based on those data, this instrument can be used on the condition that only 26 questions can be submitted to be used as test instruments for the Android-based monitor program sport training application.

Key words: Validity; Reliabiity; Android; Petanque

How to Cite: Pratama, R.S., Soegiyanto, K.S., Rahayu, S., Budiono, I., Hadi, H., Gontara, S.Y., Sukmana, A.A., Nadzalan, AA., Saputra, M.F.B. (2022). Sport Training Program Monitor Based Android in Petanque Sports: Validity and Reliability Instrument. *ISET: International Conference on Science, Education and Technology* (2022), 1051-1054.

INTRODUCTION

Petanque is a game sport that uses an iron ball. The object of this game is to throw an iron ball as close to a wooden ball as possible and when throwing your feet must feel inside a small circle (Fe, 2020). Petanque can be played on hard ground, grass, sand, and other ground surfaces. The basic skill of petanque is throwing and there are 2 types of throwing, namely pointing and shooting. Shooting is a type of throw to repel the opponent's ball from the target box and this technique is needed when bored the opponent with the ball. The difficulty of shooting technique is influenced by the position of the body and the position of the feet must be stable when throwing the ball so that the body must have a good balance (Tangkudung et al., 2022).

Petanque in Central Java is under the auspices of the Indonesian Petanque Sports Federation of Central Java Province which was formed official management on January 9, 2016 and has been registered as an official sport in the Indonesian National Sports Committee, Central Java province and actively participates in championships at national and international levels. The development of petanque sports in Central Java can be said to be growing quite rapidly as evidenced in 2017 from 35 districts formed 21 managements who play an active role in fostering athletes at the district level. The holding of a provincial level match which is a success in socializing petanque sports in Central Java.

Sports achievements at this time cannot be achieved just by exercising, but must go through a complex process. Many findings and research have been used in the field of sports. The increase in sports achievement today is the result of the development of science and technology applied in sports. The application of science and technology in the world of sports is better known as sport science. Sport science needs to develop high-performance athletes, especially physical, technical, tactical and psychological. Sport science can be one of the factors that can be taken into consideration in efforts to improve sports achievements and support policy makers from the government as recommendation material for the future (Rohendi & Rustiawan, 2020). The rapid growth of technology in society provides new

opportunities and considerations to be able to enjoy technological advances in the field of sports (Price et al., 2020). Technological developments have also penetrated the sports aspect of education, sports teachers are also educated to understand technology (Sargent & Casey, 2021). The use of technology in sports can also be used as a decision, for example in football, which is currently implementing a Virtual Assistent Referee (VAR) in assisting referee decisions (Spitz et al., 2021). The use of technology can also measure movement by applying the science of biomechanics only from smartphone applications and these applications can provide biomechanical data very similar to 3-D motion capture systems (Balsalobre-Fernández et al., 2020).

Android is an operating system for Linux-based mobile devices that includes an operating system, middleware, and applications. Android devices have several hardware features in them. Android provides an open platform for developers to create their own applications for use by various mobile devices. Android is an open source operating system (OS) which is currently the most widely used OS on mobile devices (Ao et al., 2018). Android is an open source operating system based on the Linux Kernel and launched by Google. On devices that use Android will usually use an interface that is capable of direct manipulation through touch and hand gestures, such as sliding the screen with your finger, tapping the screen or pinching the screen. Android allows users to install applications from third parties, either obtained from application stores such as google play, amazon, app store, or by downloading and installing APK files from third-party sites. The system on Android can also implement chat which will make it easier for users to communicate (Bachry et al., 2020). The android system can also provide information and display information in graphical form (Rahmalisa et al., 2020). Tracking data on athlete activity using the global positioning system (GPS) is needed to discipline athletes in carrying out social activities.

METHODS

The research design used by researchers is development research or often referred to as Research and Development. Development research is a research that aims to develop a new product or improve an existing product (Maksum, 2012). The development model used by researchers is a development model (research and development) (Borg, W.R. & Gall, 1983). Development research is a research that aims to develop a new product or improve an existing product. The term product in this research and development is Android-based software that functions as a trainer's monitoring tool in knowing the training activities and daily activities of athletes. The steps for the research and development model are: research and information collecting, planning, develop preliminary form of product, preliminary field testing, main product revision, operational product revision, operational field testing, final product revision issemination and implementation.

The population used in this study were all petanque athletes in the province of Central Java and petanque coaches who were licensed at least at the provincial level, amounting to 114 people. The sampling technique in this study was purposive sampling with the condition that the sample was, and the research sample obtained was 30 research samples used in this study.

RESULTS AND DISCUSSION

Based on the results of research involving 30 research samples by asking 30 questions to 30 athletes and coaches. Test the validity and reliability using SPSS 25 software which is presented in the table below.

Table 1. Instrument Validity

Total	Pearson Correlation	-.077	.521**	.538**	.461*	.654**	.706**	.628**	.754**	.623**	.590**	.720**
	Sig. (2-tailed)	.688	.003	.002	.010	.000	.000	.000	.000	.000	.001	.000
	N	30	30	30	30	30	30	30	30	30	30	30

The testing technique that is often used by researchers to test the validity is using the Bivariate Pearson correlation (Pearson Moment Product). This analysis is done by correlating each item's score with the total score. The total score is the sum of all items. Question items that are significantly correlated with the total score indicate that these items are able to provide support in revealing what you want to reveal. Valid. If r count r table (2-sided test with sig. 0.05) then the instrument or question items are significantly correlated with the total score

(declared valid)

The result of the calculated r value with n = 30 is 0.349. of the 30 questions asked to the respondents, totaling 30 coaches and athletes, there were 26 questions that had a validity value of more than 0.349 and 4 questions had a validity value of less than 0.349. This means that 26 questions are declared valid because r count is greater than r table.

Table 2. Instrument Reliability

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Soal_1	127.67	263.402	-.127	.928
Soal_2	127.87	243.361	.468	.921
Soal_3	127.87	242.740	.487	.921
Soal_4	127.97	245.482	.404	.922
Soal_5	127.77	236.047	.606	.919
Soal_6	127.87	236.120	.668	.918
Soal_7	127.67	240.713	.586	.920
Soal_8	127.67	235.747	.723	.917
Soal_9	127.70	238.148	.575	.920
Soal_10	127.77	240.047	.540	.920
Soal_11	127.60	240.593	.691	.918
Soal_12	127.70	244.079	.463	.921
Soal_13	127.60	242.179	.520	.921
Soal_14	127.67	244.368	.529	.920
Soal_15	127.63	236.447	.812	.917
Soal_16	127.73	240.409	.676	.918
Soal_17	127.57	245.702	.592	.920
Soal_18	127.73	235.306	.718	.917
Soal_19	127.77	237.289	.831	.917
Soal_20	127.57	246.737	.490	.921
Soal_21	127.60	242.869	.712	.919
Soal_22	127.73	247.720	.485	.921
Soal_23	127.67	244.437	.648	.919
Soal_24	127.60	243.214	.697	.919
Soal_25	128.03	243.620	.575	.920
Soal_26	127.77	245.357	.622	.920
Soal_27	127.67	247.885	.313	.924
Soal_28	127.47	260.120	.016	.925
Soal_29	127.63	255.137	.135	.926
Soal_30	127.37	262.792	-.139	.926

High and low reliability, empirically indicated by a number called the value of the reliability coefficient. High reliability is indicated by the rxx value close to 1. The general agreement is that reliability is considered satisfactory if 0.700. If alpha > 0.90 then the reliability is perfect. If the alpha is between 0.70 – 0.90 then the reliability is high. If the alpha is 0.50 – 0.70 then the reliability is moderate. If alpha < 0.50 then the reliability is low. If the alpha is low, it is possible that one or more items are not reliable.

The reliability value of this instrument is 0.923 because the value is more than 0.90, it can be said that the reliability of the instrument is perfect. Or it could be because the value is 0.923 > 0349 which means that this research instrument is reliable.

Validity test is a test used to show the extent to which the measuring instrument used in a measure is what is being measured. A test can be said to have high validity if the test carries out its measuring function, or provides precise and accurate measurement results in accordance with the purpose of the test. A test that produces data that is not relevant to the purpose of the measurement is said to be a test that has low validity. The other side of the notion of validity is the aspect of measurement accuracy. A valid measuring instrument can carry out its measuring function correctly, it also has high accuracy. The meaning of accuracy here is to be able to detect small differences in the attributes it measures.

Reliability is an index that shows the extent to which a measuring instrument can be trusted or reliable. If a measuring device is used twice - to measure the same symptoms and the measurement results obtained are relatively consistent, then the measuring device is reliable. In other words, reliability shows the consistency of a measuring instrument in measuring the same

symptom. Reliability shows the extent to which the measurement results with the tool can be trusted. The measurement results must be reliable in the sense that they must have a level of consistency and stability.

CONCLUSION

The results of the validity and reliability tests that have been carried out show that from 30 questions there are 26 questions that can be used as research instruments on the Android-based monitoring program sports training application test so that it can help athletes and coaches in monitoring exercise directly even though coaches and athletes do not meet directly. This is certainly very helpful, especially during the Covid-19 pandemic when people cannot interact directly because it is to prevent the spread of the Covid-19 virus.

The result of the calculated r value with n = 30 is 0.349, of the 30 questions asked to respondents, totaling 30 coaches and athletes, there are 26 questions that have a validity value of more than 0.349 and 4 questions have a validity value of more than 0.349. value less than 0.349. The reliability value of this instrument is 0.923 > 0.349, which means this instrument is reliable. The conclusion from the results of the validity and reliability test, based on these data, this instrument can be used with the condition that only 26 questions can be submitted to be used as a test instrument for an Android-based sports training application monitor program.

ACKNOWLEDGEMENT [OPTIONAL]

We would like to thank the Indonesian Petanque Sports Federation for assisting in this research process, and Central Java petanque coaches and athletes who have assisted in this research. All parties that the researcher cannot mention one by one who have helped in the research process and the preparation of this journal article.

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