

Match Supervisor Reports: Developing Applications for PSSI Football Match Supervisor Reports in Medan City

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Abstract

The purpose of the research is to develop a football match supervisor report in the form of an application, used for match supervisors under the auspices of the Medan City PSSI. The application is used by the PSSI match supervisor in the city of Medan to carry out all football matches in the city of Medan. The research uses development research methods adopted from the development research theory of Budiono Saputro. The implementation of the research uses a preliminary study step, namely library research, analyzing needs, and designing applications according to the match supervisor's report. The next step is making application products, validating to product revision experts, revision individual trials, and group trials. The results of material expert validation are 82.45% good category, media expert validation results are 81.01% good category. The application assessment from the expert showed that expert I was 87.47% very good category, expert II was 86.89% very good category. The results of individual trials showed 86.85% easy assessment using the very good category, the overall assessment was 87.75% in the very good category. The results of the match supervisor's assessment were 85.46% in the aspect of using the very good category, and 85.76% in the overall aspect of the very good category. The conclusions of the research on the development of the match supervisor report with the application, based on the assessment data of the Medan City PSSI Match Supervisor on several aspects that have been developed have been suitable for use with some suggestions and inputs for improvement, which can then be used as the final product of the research. It is hoped that further research will be carried out on other aspects for a more perfect application of the developed match supervisor report.

Keywords

Report; match
supervisor; application



I. Introduction

Improving physical fitness, achievement, discipline, sportsmanship, and others is the goal of development in the field of sports. This is an effort by the Indonesian government to develop in all fields, especially in the fields of sports and education. The development carried out by the Indonesian government also aims to build the quality of Human Resources (HR) who are physically and mentally healthy, skilled, have broad insight, and honest and commendable behavior. This development effort to improve and maintain the standard of human life is very well carried out in a sustainable program (Prasetyo, 2015); (Malasari & Juntara, 2021). The Indonesian government is currently trying to improve human resources as an effort to be perpendicular to what the law aspires to, namely to

create a just and prosperous society, especially in the fields of sports and education. For this reason, the government's efforts to carry out short-term plans and long-term plans for the ultimate goal are developed countries. Further strengthened by the increase in human resources, development in the field of sports can be seen by the existence of breakthrough innovations in training models, facilities and infrastructure to support human resource capabilities. The use of innovation to support sports activities to achieve the final goals set on the side of training, match support and evaluation (Supriyono, 2018). In line with what Djoko Pekik Irianto said as the Ministry of Youth and Sports that developed countries to improve regional and national sports achievements, namely through Mastery of Science and Technology (IPTEK), it is acknowledged that Indonesia is still lagging behind developed countries in mastering science and technology. So in improving the field of sports, science and technology is the spearhead of developed countries (Rohmat, 2014). It can be concluded that to build a just and prosperous society as the ultimate goal that Indonesia has set to become a developed country, it must increase human resources in the fields of sports and education, one of which is. Improving human resources in the field of sports and education relies on strengthening science and technology, especially facilities, infrastructure, training, match support, and evaluation. According to Werdhastutie et al (2020) the development of human resources should focus more on increasing productivity and efficiency. This can be realized because today's competition, especially among nations, is getting tougher and demands the quality of strong human resources as managers and implementers in an organization or institution.

Football through FIFA has made new breakthroughs in the quality and professionalism of competitions or matches, one of which is the use of VAR (Video Assistant Referee) which aims to see an incident that the referee did not see in one match. The 2018 World Cup in Russia The use of VAR was carried out for the first time until now it is also used in European leagues, Indonesia discourse is used in the Shopee Premier League in 2019 until now PSSI has not used VAR (Bidikdot.com, 2020). It can be concluded that a breakthrough has been made by FIFA for the soccer game, namely developing science and technology, including the latest one is VAR, this is very important as an alternative for referees to see an event that is not visible and does not rule out other breakthroughs, especially in Indonesia. Next chapter 8 on the general rules of the PSSI Union match explains several football match equipment that requires them to be match supervisors, referee inspectors and referees. The match supervisor is in charge of seeing and reporting from 7 days before the match and 1 day after the match is over, the referee inspector as an evaluation of the referee's performance and the referee has the authority and responsibility when the match takes place, then these three important components cannot be separated from every match that is carried out (Khuliman, 2018). It was concluded that the components of the football match equipment consist of match supervisors, referee inspectors and referees, these three components are very vital in football matches because these components are an important standard of football matches. Medan City PSSI currently has 23 match supervisors, which can be seen in table 1 below:

Table 1. Medan City PSSI Match Supervisor Data (source: PSSI Askot Data Medan City)

No.	Category	Total
1	National	17
2	Regional	6

Table 1 shows that the match supervisory personnel are 23 people with 17 people in the national licensed category and 6 regionally licensed categories. Of the nationally licensed match supervisors who are always assigned to Liga 1 PSSI (the highest match in PSSI) as many as 2 match supervisors, and Liga 2 PSSI and Liga 3 PSSI as many as 2 people, 13 match supervisors have never been assigned. This situation is directly proportional to what has been done so far, namely in making the results of the match supervisory match report for the PSSI Medan city which is still manual by using a sheet of paper for the match report form for the PSSI match supervisor in Medan. So far, the Medan city PSSI has not had a match supervisor report online or using an application that makes it easier for the match supervisor and the Medan city PSSI itself. Reilly & Williams (2003) (Barreira et al., 2013) reveal that the most popular sport in the world is football, which is one of the sources for the development of science and technology. It is also a good example of the latest research on the development of cutting-edge technology, including in the form of practical applications and web in the form of software (Supriyono, 2018). From this reference, the development of science and technology in sports, especially soccer, by developing cutting-edge technology such as web or applications, aims to store data that occurs, as well as facilitate the implementation of soccer match activities. The next author in this study developed a match report application for the PSSI match supervisor in the city of Medan.

The existence of the application is expected to facilitate the Medan city PSSI in collecting match data carried out by the Medan city PSSI through the match supervisor match report. Furthermore, the increase in human resources for PSSI match supervisors in the city of Medan accustomed to using the match supervisor report application, and made it easier for match supervisors to be able to compete at the national level in monitoring matches carried out by the central PSSI and the Pekan Olahraga Nasional (PON). Then make it easier for the PSSI of Medan to organize football matches in the city of Medan. The statement emphasized that IT development is an integrated solution in all related fields (Munthali, George & Xuelian, 2020). Furthermore, Ilya Solntsev and Nikita Osokin in their research explain that in Russia, developing football is very necessary which is a recommendation on how to coordinate the activities of implementing football matches in a better direction (Solntsev & Osokin, 2018).

II. Research Methods

The research method using development research was adopted from the development research theory of Budiono Saputro (from Sukmadinata and Borg & Gall Development research) in other words Research & Development (R&D), Borg and Gall (1983:772) Sukmadinata (2008) and Sugiyono (2009:407) that research methods in certain fields produce a certain product and are accompanied by certain additional products that have the effectiveness of a product. These products are tangible, for example: in teaching management such as integrated science training management model products, science teaching such as integrated science books as well as computers such as software (Saputro, 2017). This development research resulted in a product that has been tested for its effectiveness in the form of a match supervisor report application from the results of the matches that have been monitored. The purpose of this study is not to test or formulate theory, but to develop an application for an effective match result report used by the PSSI match supervisor for the city of Medan for all football matches held in the city of Medan.

The match supervisors under the auspices of PSSI, Medan, North Sumatra, totaling 23 people were the population of this study. While the research pilots were all match supervisors in the city of Medan totaling 23 people. This research design uses Budiyo

Saputro's development research which adopts Sukmadinata and Borg & Gall development research using a preliminary study step, namely literature study, analyzing needs, and designing applications according to the match supervisor's report. The next step is making application products, validating to experts and product revisions, individual trials and revisions if any, and group trials and revisions if any (Saputro, 2017). The steps of this development research can be seen in Figure 1 below:

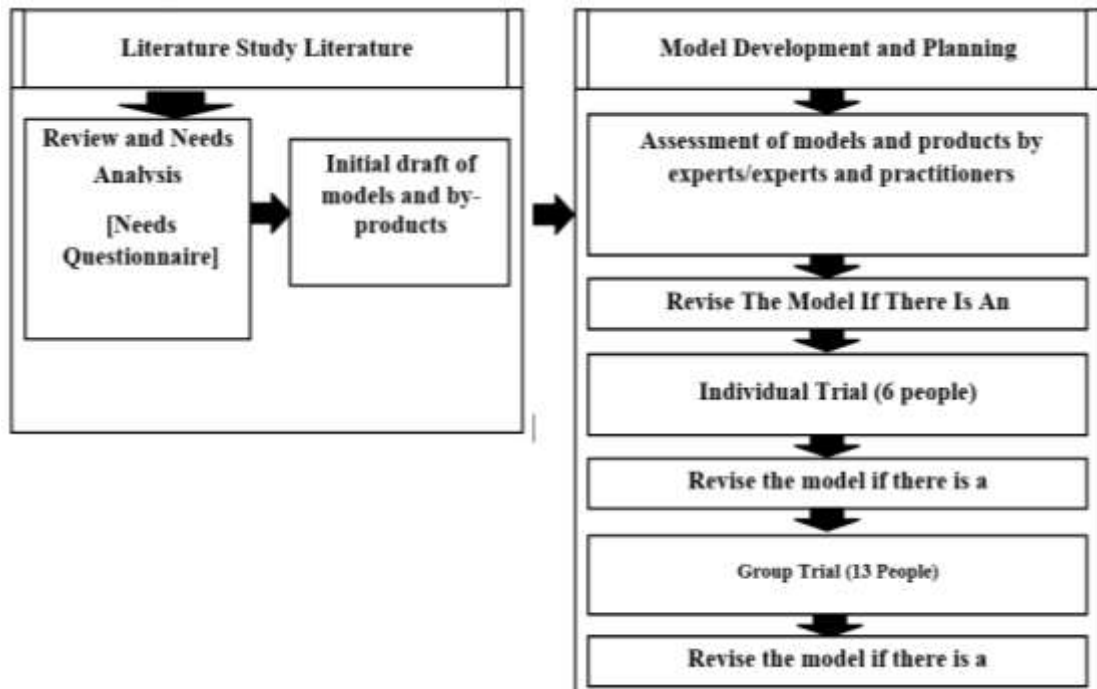


Figure 1. Model Development Procedure (Saputro, 2017)

This development research data collection uses an instrument that is able to explore the data needs used. The instrument used is an instrument to assess the application. This instrument is in the form of a questionnaire for material experts, media experts and match supervisors. This study uses quantitative descriptive analysis techniques and qualitative descriptive analysis. Quantitative descriptive analysis was carried out to analyze the data on the value scale of the results of the assessment on the draft model, the data on the results of the product assessment, the data on the results of individual trials, and the data on the results of group trials. Meanwhile, qualitative descriptive analysis was conducted to explore the lack of data and input to the application before the trial and after the field trial.

One overall area is said to be a population consisting of: objects/subjects having certain qualities and characteristics set by the researcher to be studied and then conclusions can be drawn (Sugiono, 2019). The population of this research is the PSSI match supervisor in the city of Medan in North Sumatra, which consists of 23 trial people. A researcher is forced to be satisfied with using a cluster sample because the clusters which are groups of individuals are available as units in the population, sampling in clumps has the same opportunity to be a sample from one population (Suryabrata, 2016). The research development pilot was the match supervisor of the Medan city PSSI, which consisted of 19 national licensed match supervisors who had not been assigned by the central PSSI and regional licensed match supervisors. 6 match supervisors as individual trials, and 13 match supervisors as group trials in application development research at PSSI Medan city.

III. Results and Discussion

Preliminary studies are carried out as a needs analysis, through field studies and literature studies. The analysis starts from a field study of the distribution of questionnaires to the PSSI match supervisor in Medan City which is licensed by the Region. The results of the preliminary study revealed that from the survey questionnaire distributed, it was found that 100% of using a laptop, 82.61% of using the match supervisor application from PSSI, 100% of match supervisors requiring a match report application for smooth duty, and 100% of match reports stating agree with the development of the match report application. It is hoped that in the future the match supervisor will use the match supervisor application to make it easier and professional.

3.1 Application Design or Preliminary

Draft The initial draft of the design of this research application is the operational planning of the application, menu, and expert assessment. Submission of the initial product draft of the application design accompanied by an assessment sheet using a value scale in which there are inputs, suggestions, and revisions of experts as material for validation. The result assessment consists of the truth value scale of the content of the material concept and the media aspect of the application using a scale Likert choice of 5 categories. The expert's assessment of the results of the draft application can be seen in table 2:

Table 2. Data of the results of the expert validation of the application draft

No.	Expert	%	Category
1.	Material	82.45	Good
2.	Media	81.01	Good

In table 2 the assessment of the results of the expert validation of the material shows the percentage of 82.45% is in the good category and the validation of the media expert's assessment shows a percentage of 81.01% is in the good category. Shows the assessment of the two experts on the application that has been used and developed with several revisions.

3.2 Product Trial

Material experts provide an assessment of the developed application, then provide suggestions for improvement to revise the application. The data on the results of the application assessment is calculated from the number of maximum scores of items and the real scores obtained are then converted to the percentage table. The material expert's assessment of the application of the football match supervisor report can be seen in table 3 below:

Table 3. Data on the results of the material expert's assessment of the application.

Material Assessment	%	Category
Application	93.46	Very Good

Table 3 shows media experts giving an assessment of the game supervisor's report application that was developed, and providing suggestions for subsequent revisions. The results of media experts assessing the application of the match supervisor report are shown in table 4 below:

Table 4. Data on the results of the Media expert's assessment of the Application

Expert	Rating	%	Category
Expert1	Application	87.45	Very Good
Expert 2	Application	86.89	Very Good

Table 4 shows the data from the media expert's assessment of the application, expert 1 rated the application as 87.47% in the very good category, as well as expert 2 rated the application at 86.89% in the very good category.

3.3 Individual

The individual trial was carried out by means of 6 PSSI match supervisors in Medan who were selected at random before. The process of implementing the feasibility test of this application operationalizes the work of the match supervisor report application that has been developed, then the match supervisor is given time to operationalize the application. Next, the researcher gave an assessment sheet to the match supervisor to see the quality of the developed application. The match supervisor during the process of filling out the scoring sheet can still review the match supervisor report application. Table 5 presents the match supervisor's assessment data on applications that have been completed in individual trials:

Table 5. Match Supervisor's Assessment Result Data

Match Supervisor	%	Category
Usage	86.85	Very Good
Overall	87.75	Very Good

From the results of the match, the supervisor assessing the application developed in aspects of use showed 86.85% easy to use (very good category), then the overall aspect of using showed 87.75% (very good category). This data shows that the match supervisor's assessment of the application developed in individual trials is suitable for use with improvements in accordance with suggestions and input, which is then followed by group testing.

3.4 Results of the Group

The group trial was carried out by demonstrating to 13 PSSI match supervisors in the city of Medan who were previously randomly selected. The process is carried out in group trials on the match supervisor application by operationalizing how to use the developed application, then the match supervisor is given time to use the application. To obtain the quality of the developed application, the researcher gave an assessment sheet to the trial group. During the process of filling out the assessment sheet, you can review the application for the match supervisor report that was done. The following table 6 presents data on the results of the assessments from the following group trial match supervisors.

Table 6. Data on the results of the assessment of the match supervisor for the Group Trial

Match Supervisor	%	Category
Usage	85.46	Very Good
Overall	85.76	Very Good

Table 6 shows the results of the application assessment by the match supervisor on the aspect of use of 85.46% in the very good category, while the overall aspect of 85.76% is in the very good category. Showing the assessment of the match supervisor on the match supervisor's match report application after the group trial is feasible to use.

3.5 Application Improvement

From the results of experts and trials, the application of research products found several inputs and suggestions such as: the first improvement was carried out at the validation stage, and the second improvement was carried out after the application's feasibility test. This improvement is based on data on suggestions and input from material experts and media experts. Suggestions and input from this expert validation as a basis for researchers to make improvements to the initial product application before individual trials are carried out. Researchers review the suggestions and input of experts for the improvement of the developed application, these suggestions and input are very helpful for researchers as the basis for improving the application that is the product of this research. Data improvement can be seen in Table 7 below:

Table 7. Suggestions and Feedback from Expert

Expert	Category
Matter	<ul style="list-style-type: none"> ▪ It is in accordance with the reference; ▪ Add a recap of the number of goals scored by a player; ▪ Add a red card and yellow card recap to see the most fair play teams; and ▪ Also created inspectors, future applications referee, umpire and referee maid.
Media 1	<ul style="list-style-type: none"> ▪ The use of color in the application is less attractive; ▪ The text on the application should not be too small; and ▪ Connecting between the Player Name List is input by the club, the Player List is inputted by the match supervisor.
Media 2	<ul style="list-style-type: none"> ▪ The color combination should be attractive ▪ Username for in the logging line-up using the club email; and ▪ Connecting between the validity of the data with the Player Name List as well as the Player List.

The improvement data used by the researcher was also obtained after the individual trial. Suggestions and inputs from individual trials obtained are data that researchers conclude can be seen in table 8 below:

Table 8. Data Suggestions and Inputs from Individual Trials

No	Suggestions and Inputs
1.	Immediately use match supervisors in PSSI North Sumatra ;
2.	Very useful application for match devices;
3.	Very helpful for match supervisors in carrying out their duties;

The researcher continued the group trial activity after making improvements to the application that was developed based on suggestions and input from the individual trial person.

3.6 Result

After the draft application design is complete, it is developed and translated into application programming on the Web. Designing the stages of preparing the application framework as well as related to usability. The PSSI match supervisor report application for the city of Medan includes several sections, namely: the menu page, the Player Name List page, the Player List page, the match supervisor match report page, and the match result recapitulation page. Applications are developed to review material experts and media experts and improve applications. Furthermore, after completing the assessment of the developed application, the application for the report on the results of the PSSI match supervisor in the city of Medan showed positive results. This application has undergone several revisions from material experts, media experts and the trial phase.

As a deepening of research and development knowledge, developing is the beginning of the word development which means making it more perfect by means, processes or actions to develop. The purpose of development is not to formulate or test theories, but to improve existing or non-existent designs or products in solving actual problems, where the designs or products developed are effective to use (Sugiono, 2016); (Arisandi, 2013); (Universitas Negeri Malang, 2010); (Darmadi, 2019); (Nurkadri, 2019). The match supervisor report application was developed based on a needs analysis, which helps make it easier for Medan City PSSI match supervisors, football clubs and the needs of Medan City PSSI. This needs survey by distributing questionnaires to 23 PSSI match supervisors in the city of Medan, where as many as 100% were able to operate laptop was carried out, as many as 82.61% had never used the match supervisor application from PSSI, as many as 100% of matches carried out by PSSI Medan city used match supervisor reports. as a smooth match, as many as 100% of match supervisors require a match report application, and as many as 100% of match supervisors agree with the development of a match report application.

Based on these data, research was carried out on the development of the application for the results of the PSSI match supervisor in the city of Medan. The application that has been developed through this research is a product that is feasible for the PSSI match supervisor in the city of Medan as a report on the results of a football match and must be owned by the PSSI in the city of Medan. Aims to facilitate the management of football match devices in the city of Medan. This is in accordance with the statement that the use of such technology with a suitable user interface will empower the coach to gain insight into existing performance levels more readily and conveniently (Pope et al., 2009). This explains that the use of IT for soccer games provides flexibility and convenience for match equipment to increase capacity and efficiency. Furthermore, the use of multimedia facilitates and simplifies all work (Fitriadi & Rachman, 2014).

The PSSI match supervisor report application for the city of Medan consists of several main menus, namely: the first home menu for the Player Name List, the second home menu for the List of Players, the third home menu for the match supervisor results report, and the fourth application summary for the results of all players and all matches. So based on the results of the assessment of material experts and media experts, individual trials and group trials, and several improvements, the development of the application for the report on the results of the PSSI match supervisor in the city of Medan concluded that the application developed was feasible to use. In the future, a match device report application will be created that makes it easier to carry out football matches on other variables that can be investigated.

IV. Conclusion

Analysis of the results of needs and analysis of data on expert assessments and PSSI match supervisors in Medan City, the stages of developing the application report for PSSI Medan City match supervisors begin with conducting a preliminary study, collecting information, and designing; The next step is application development and application development, followed by validating to experts as well as revising the developed product, then conducting individual trials and revising according to input and suggestions, and ending with group trials that produce products.

Reports through the match supervisor application have several menus such as: the Player Name List home menu, the Player List home menu, the match supervisor report home menu, and the player and match recap application menu. The application developed was declared eligible for use by PSSI match supervisors in the city of Medan. This can be seen from the results of group trials on the aspect of use of 85.46% in the very good category, and in the overall aspect of 85.76% in the very good category.

This application is expected to provide benefits to the development of science and can develop other applications for football match devices such as referee inspectors and referees. Useful for future research can be as a guide. Useful to make it easier and more efficient for match supervisors to carry out the duties of soccer match supervisors. Provide benefits during the implementation of football matches held at PSSI Medan city, and provide benefits for increasing PSSI Medan city human resources, namely the PSSI Medan city match supervisor for IT development.

References

- Arisandi, D. (2013). *Pengertian Pengembangan*. 10.
- Barreira, D., Garganta, J., Castellano, J., & Anguera, M. T. (2013). SoccerEye: A Software Solution to Observe and Record Behaviours in Sport Settings. *The Open Sports Sciences Journal*, 6(1), 47–55. <https://doi.org/10.2174/1875399x01306010047>
- Bidikdot.com. (2020). *Kegunaan VAR Dalam Sepak Bola, Indonesia Belajar Dari Thailand*. In Bidikdot.com.
- Darmadi, H. (2019). *Pengantar Pendidikan Era Globalisasi: Konsep Dasar, Teori, Strategi dan Implementasi dalam Pendidikan Globalisasi*. AnImage.
- Fitriadi, A., & Rachman, H. A. (2014). *Pengembangan Multimedia Pendidikan Jasmani Materi Budaya Hidup Sehat ...* Arief Fitriadi, Hari Amirullah Rachman 1. *Jurnal Keolahragaan*, 2(1), 1–10.
- Khuliman, M. T. (2018). *Manajemen Organisasi Dan Kompetensi Perwasitan Sepakbola Askot Pssi Kota Semarang Tahun 2018*. Universitas Negeri Semarang.
- Malasari, C. A., & Juntara, P. E. (2021). *Development Of Basic Gymnastics Course Textbooks For Students Of Physical Education Study Program*. *Kinestetik : Jurnal Ilmiah Pendidikan Jasmani*, 5(1), 120–127. <https://doi.org/10.33369/jk.v5i1.14478>
- Munthali, George, N. C., & Xuelian, W. (2020). *A new decade for social changes*. *Technium social sciences journal*, 6, 173–184.
- Nurkadri. (2019). *Goenrich Basic Technique Model with Playing Approach for a Beginner Tennis Player*. 278(YISHPESS), 96–100. <https://doi.org/10.2991/yishpess-cois-18.2018.24>
- Pope, N., Kuhn, K.-A. L., & Forster, J. J. H. (2009). *Digital Sport for Performance Enhancement and Competitive Evolution: Intelligent Gaming Technologies: Intelligent Gaming Technologies*. IGI Global.

- Prasetyo, Y. (2015). Kesadaran Masyarakat Berolahraga Untuk Peningkatan Kesehatan Dan Pembangunan Nasional. *Medikora*, 11(2), 219–228.
<https://doi.org/10.21831/medikora.v11i2.2819>
- Rohmat. (2014). Dongkrak Prestasi Olahraga RI Lewat Penguasaan Iptek. *SINDONEWS.COM*, 1.
- Saputro, B. (2017). Manajemen Penelitian Pengembangan (Research & Development) bagi Penyusun Tesis dan Disertasi. In *Journal of Chemical Information and Modeling*. Aswaja Pressindo.
- Solntsev, I., & Osokin, N. (2018). Designing a performance measurement framework for regional networks of national sports organizations: evidence from Russian football. *Managing Sport and Leisure*, 23(1–2), 7–27.
<https://doi.org/10.1080/23750472.2018.1452628>
- Sugiono. (2016). *Metode Penelitian Kuantitatif, kualitatif dan R&D*. Bandung: Alfabeta.
- Sugiono. (2019). *Metodologi Penelitian*. *Journal of Chemical Information and Modeling*. Supriyono, E. (2018). Pengembangan aplikasi tes keterampilan sepakbola berbasis web Developing web-based soccer skills test application. *Jurnal Keolahragaan*, 6(1), p 38-47.
- Suryabrata, S. (2016). *Metode Penelitian (II)*. RajaGrafindo Persada. Universitas Negeri Malang. (2010). *Pedoman Penulisan Karya Ilmiah*. In *Pedoman* (Edisi keli, hal. 3). Universitas Negeri Malang.
- Werdhiastutie, A., et al. (2020). Achievement Motivation as Antecedents of Quality Improvement of Organizational Human Resources. *International Research and Critics Institute-Journal (BIRCI-Journal)*. P. 747-752.