

A Qualitative Study of Camera Techniques and Visual Quality in Broadcasts of Pegadaian Liga 2 Football

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Abstract. Sports broadcasting production, particularly in Pegadaian Liga 2, still faces various challenges in maintaining visual quality. These challenges are caused by limitations in production equipment, changing field conditions, and less-than-optimal coordination among the production crew. This study aims to identify camera shooting techniques and the factors influencing visual quality in Pegadaian Liga 2 broadcast production. The research employed a descriptive qualitative approach using data collection techniques through in-depth interviews, observation, and documentation involving four broadcasting practitioners experienced in multi-camera sports broadcasting production. The data were analyzed using thematic analysis techniques through the processes of data reduction, categorization, interpretation, and conclusion drawing. The results show that visual quality is influenced by the cameraman's ability to capture important moments, mastery of blocking camera techniques and shot composition, as well as teamwork and real-time communication among the crew. In addition, factors such as lighting, weather conditions, and equipment limitations also affect broadcast quality. The use of modern broadcasting technologies, such as super slow-motion and remote production, can help improve broadcast quality, although these technologies have not been implemented evenly. This study concludes that improving the broadcast quality of Pegadaian Liga 2 requires support through equipment upgrades, enhancement of crew competencies, and more optimal utilization of broadcasting technology.

Keywords. Sports Broadcast, Camera Technique, Visual Quality, Liga 2 Pegadaian.

INTRODUCTION

The development of media technology over the last decade has driven significant transformation in the sports broadcasting industry, including the way matches are recorded, produced, and presented to audiences (Pratama, 2025). Digitalization has expanded the distribution channels of sports broadcasts through television platforms, digital streaming, and Over-the-Top (OTT) services. This development has increased audience expectations, particularly regarding visual quality, image clarity, and the ability of broadcasts to capture important moments during matches. Nevertheless, the quality of Indonesian football broadcasts still frequently receives public criticism (Ramadhan, 2025). Criticism related to blurry images, frame drops, and unstable camera movements indicates a gap between international broadcasting standards and domestic production practices.

In the context of national competitions such as Pegadaian Liga 2, production challenges become more complex due to variations in stadium facilities, lighting conditions, and budget limitations. Sports broadcasts are not only a form of entertainment media, but also part of documenting achievements and representing the professionalism of the competition. Therefore, camera shooting techniques, visual composition, camera angle selection, movement stability, and the crew's ability to interpret match situations are fundamental aspects in creating high-quality broadcasts.

Camera shooting techniques are one of the essential elements in sports broadcasting production. These techniques include camera angle selection, shot framing, camera movement, and the use of technologies such as slow motion and zoom. All of these elements can influence how audiences understand and evaluate broadcast quality. As stated (Herbert, 2022), “visuals in sports broadcasting must not only show the action but also clarify it,” meaning that camera angles and movements help audiences better understand the flow of the match.

According to data from the International Broadcasting Convention (IBC), the use of high-speed cameras has increased by approximately 30% since 2020, particularly for producing slow-motion replays that allow audiences to observe athletes’ movements in greater detail. FIFA guidelines (FIFA, 2022) also explain that the use of various camera angles, such as the main camera, close-up, and aerial camera, can enhance audience engagement by providing more comprehensive visual perspectives. With proper camera shooting techniques, sports broadcasts can appear more dynamic, clearer, and create a more engaging and informative viewing experience.

As the second-tier professional football competition in Indonesia, *Pegadaian Liga 2* has its own production challenges. Unlike *Liga 1*, many *Liga 2* stadiums have not yet met international broadcast standards, causing lighting systems, camera placement, and production spaces to often rely on improvisation. Previous studies have largely focused on *Liga 1* production or international sports broadcasts, while limited research has examined how local crews manage technical limitations within the context of *Liga 2* broadcasts.

This gap in the literature indicates the need for an in-depth study on how broadcasting practitioners apply camera shooting techniques, overcome technical constraints, and maintain visual quality under limited conditions. Therefore, this study aims to: (1) analyze the camera techniques used in *Pegadaian Liga 2* broadcast production, (2) understand the factors influencing visual quality, and (3) identify best practices employed by production crews in dealing with technical challenges. This research contributes to the development of communication and broadcasting media studies, particularly in the field of sports broadcasting production in Indonesia.

METHOD

This study employed a descriptive qualitative approach because it focuses on understanding the processes, experiences, and dynamics of sports broadcasting production in depth within the actual context of *Pegadaian Liga 2* production. This approach was chosen because the study does not merely aim to explain the final outcome of broadcast visual quality, but also to understand how technical decisions, crew coordination, field conditions, and the use of technology are formed throughout the production process. Therefore, a qualitative approach was considered the most appropriate method to explore meanings, work experiences, and production practices that cannot be measured solely through quantitative data (Creswell, 2020; Sugiyono, 2020).

The research data were collected through three data collection techniques: in-depth interviews, observation, and documentation. In-depth interviews were conducted with four practitioners who had direct experience in sports broadcasting production, particularly football broadcasting. The informants in this study were Priladitya Suis Chandra (Adit) and Pangaji Asiyogo (Aji) as Program Directors (PD) of *Pegadaian Liga 2*, as well as Agung Cahyono and Zoddy Basari, who also have experience as PDs and sports broadcasting production practitioners.

In addition to interviews, observations were conducted during the production process of *Pegadaian Liga 2* match broadcasts to directly examine camera placement, crew coordination, intercom usage, blocking camera, and visual decision-making within the production control room. These observations

were important for obtaining factual data regarding field production practices so that the research findings would not solely rely on the perceptions of the informants.

Documentation was also used as a supporting data source, including photographs of football blocking camera setups, control room documentation, production rundowns, and visual references from Pegadaian Liga 2 broadcast productions. These documents helped the researcher verify the interview and observation findings while also strengthening the interpretation of the data. The informants were selected using a purposive sampling technique based on their experience, roles, and direct involvement in broadcast production. This technique was applied to ensure that the collected data were relevant to the research objectives and capable of providing in-depth information (Sugiyono, 2020).

The data were analyzed using thematic analysis techniques through several stages, including data reduction, interview transcription, coding, theme categorization, interpretation of observation and documentation data, and conclusion drawing. This process was carried out to identify patterns, relationships, and meanings from all collected data (Moleong, 2021). To ensure data validity, this study employed technique triangulation and source triangulation by comparing the results of interviews, observations, and documentation. In addition, the researcher conducted member checking with the informants to ensure that the data interpretation was consistent with the actual production conditions (Creswell, 2020)

RESULTS AND DISCUSSION

Based on the research findings obtained through in-depth interviews with four sports broadcasting production practitioners, namely Adit, Agung, Aji, and Zoddy, who have direct experience in broadcasting Pegadaian Liga 2 matches, it was found that visual quality and camera shooting techniques are not determined solely by technical skills. Through thematic analysis, this study reveals that broadcast quality is also influenced by an understanding of the flow of the game, crew coordination, stadium infrastructure conditions, and the utilization of broadcasting technology.

In general, these findings indicate that sports broadcasting production is a process involving various interconnected aspects. The results of this study are then related to sports broadcasting production theories and international standards to provide a more comprehensive understanding of Pegadaian Liga 2 broadcast production practices. Table 1 is a comparison of Liga 2 production and International broadcast standard.

Table 1 Comparison of Liga 2 Production Challenges and International Broadcast Standards

Production Aspect	Pegadaian Liga 2	International Standards
Number of Cameras	6–8 cameras (limited availability)	16–32 cameras
Stadium Infrastructure	Non-uniform; lighting conditions are often inadequate	Specifically designed for broadcast purposes
Slow-Motion Equipment	1–2 units	6–10 units, including super slow-motion cameras
Crew Communication	Standard intercom system	Multi-channel intercom system and monitor wall
Production Technology	On-site production	Remote (cloud-based) production

Source: Compiled by the Author(s) from Various Sources

Based on observations conducted during the production process of Pegadaian Liga 2 matches, the researcher found that the main camera was generally positioned at the center side of the stadium stands to obtain a comprehensive view of the match. However, limitations in stadium infrastructure caused several

camera positions to be placed less than ideally. These observational findings were reinforced by production visual documentation and statements from the informants regarding the importance of crew flexibility in adjusting blocking camera positions on the field.

Camera Shooting Techniques in Liga 2 Broadcasts

All informants emphasized that the core essence of sports broadcasting lies in the ability to capture important moments that occur quickly and cannot be repeated. According to informant Adit in this study, football broadcasts are built on “moments and drama,” therefore cameras must highlight momentum through appropriate shot selection and visual composition. Informant Agung explained that broadcast quality is highly determined by the camera’s ability to capture opportunities, goals, fouls, and players’ expressions. Informant Aji added that sports broadcasting requires full alertness because every moment occurs in real time. Meanwhile, informant Zoddy emphasized that understanding the rules of the game is a fundamental aspect in determining visual decisions, since the rules influence where and when a moment should be recorded.

In the discussion of camera shooting techniques, the perspectives of the informants are consistent with the concept of *moment-driven broadcasting*, which emphasizes that the essence of sports broadcasting lies in the ability to capture important moments that can build emotional engagement among audiences (Whannel, 2009). The findings of this study indicate that the ability to capture moments depends not only on the technical skills of the cameraman, but also on the ability to understand the flow of the game in real time. Therefore, the cameraman does not merely function as a technical operator, but also as an active visual decision-maker in constructing the narrative of the match.

These findings demonstrate that the visual quality of sports broadcasts is determined not only by the aesthetic aspects of the image, but also by the accuracy in capturing moments that carry dramatic and narrative value. Therefore, Liga 2 broadcast production requires cameramen who not only master camera shooting techniques, but are also capable of anticipating the dynamics of the game so that every important moment can be presented optimally to the audience.

In the context of football production, Deninger (2022) emphasizes that “accurate anticipation of play dynamics is the hallmark of professional football camerawork.” The findings of this study reinforce this argument.



Figure 1 Football Camera Blocking
Source: Sandy Bayern’s Facebook Page

These observational findings also indicate that the limited variety of camera angles affects the ability to fully create the atmosphere of the match on screen, to obtain these results, the camera was positioned as shown in Figure 1. In several situations, shot transitions appeared less dynamic because the

limited number of cameras caused the match visuals to rely mainly on the main camera and certain close-up shots. In addition, production documentation revealed that the production crew had to improvise camera positions according to the varying stadium conditions at each match.

These conditions indicate that the visual quality of sports broadcasts is influenced not only by crew competence, but also by infrastructure readiness and adequate production technology support. These findings are consistent with recent studies stating that camera layout flexibility, production equipment quality, and real-time coordination among crew members are important factors in shaping the audience's visual experience in live sports broadcasts (Frandsen, 2012; Shang et al., 2021)

Camera Angles, Composition, and Blocking

The findings show that camera placement and visual composition arrangements in Liga 2 broadcasts function not only as technical aspects, but also as elements that shape the visual narrative structure of the match. The screen direction between the two goals, as explained by Agung, serves as the primary basis for determining the position of the master camera, which plays a role in presenting the flow of the game comprehensively. In this context, the master camera functions not only as the main point of view, but also as a controller of the audience's visual orientation toward the dynamics of the match.

Furthermore, Adit's emphasis on strong visual composition in highlighting the main subject, along with Aji's view on the importance of camera movement following the rhythm of the game, indicates that visual quality is formed through a balance between aesthetic aspects and audience viewing comfort. Meanwhile, Zoddy's statement that each sport has different blocking characteristics indicates that visual strategies are not universal, but rather contextual according to the specific needs of each sport.

Theoretically, these findings are consistent with the concept of *sport-specific visual architecture*, which states that each sport possesses an inherent visual structure that influences camera blocking design (Bruce, 2013). In football broadcasting, the placement of the master camera in a lateral position enables the creation of a panoramic tactical view that helps audiences understand the overall flow and pattern of the game. Therefore, the limited variation in camera placement within Liga 2 productions results in less optimal development of dynamic visual narratives compared to international sports broadcasting standards.

Based on observations and documentation during the production process, the limited number and positioning of cameras in Liga 2 broadcasts have prevented the visual presentation of matches from fully maximizing the emotional atmosphere on screen. In several match situations, shot transitions appeared less varied because the visual coverage still relied heavily on the main camera and a limited number of close-up shots. In addition, production documentation showed that several stadiums did not yet have ideal camera placement points in accordance with professional broadcast standards. These conditions required the production crew to adjust and improvise camera blocking throughout the match so that the broadcast could continue to follow the flow of the game effectively.

These conditions indicate that the visual quality of sports broadcasts is determined not only by the technical skills of the cameraman, but also by the readiness of stadium facilities, camera positioning arrangements, and the support of production technology used during live broadcasts. These findings are consistent with recent studies stating that variations in camera angles, real-time production coordination, and the use of modern visual technology significantly influence audience engagement and the quality of the viewing experience in live sports broadcasts (Galily, 2025).

Crew Coordination and Visual Quality Control

The findings show that crew coordination in Liga 2 broadcast production is an important factor in maintaining the consistency of visual quality. Pre-match briefings, as explained by Adit, function not only

as a means of delivering technical instructions, but also as a process of aligning work understanding among crew members before the broadcast begins. In practice, the real-time visual control carried out by the director demonstrates that sports broadcasting production is a dynamic process that requires quick responses and precise coordination from the entire production team.

In addition, the use of intercom highlighted by Aji functions not only as a communication tool, but also as a medium for maintaining work synchronization among crew members throughout the match. This condition indicates that broadcast visual quality is determined not only by individual abilities, but also by the effectiveness of communication and teamwork within the production process. Meanwhile, Zoddy's view regarding the importance of cameramen actively providing shots illustrates that the role of the cameraman is no longer limited to being a technical operator, but has also become an essential part of constructing the visual narrative of the match.

Theoretically, these findings are consistent with the concept of *live production synchronization*, which emphasizes that the success of live broadcasting depends on communication that is real time, interdependent, and predictive (Evens, 2013). In addition, the idea of the cameraman as a proactive contributor also reinforces the concept of *camera operator agency* (Evens, 2013), which views camera operators as creative agents who actively contribute to constructing the visual structure of broadcasts. Therefore, crew coordination in Liga 2 production can be understood as a collaborative system that is not only technical in nature, but also constructive in shaping the visual narrative quality of the match.

Based on production observations and documentation, crew coordination in Liga 2 broadcasts operates through an interconnected communication system involving the Program Director, cameraman, replay operator, and technical director. The use of intercom systems and multiview monitors helps each crew member receive instructions and respond quickly to match situations during the live broadcast. Documentation from the control room shows that shot transitions and replay execution must be carried out accurately to ensure that the flow of the match remains comfortable for audiences to follow. In fast-paced matches, effective communication among crew members becomes an important factor in maintaining visual stability and the accuracy of shot selection.

These findings indicate that the quality of modern sports broadcasting is determined not only by individual abilities, but also by teamwork and real-time coordination throughout the live broadcasting process. The findings are consistent with recent studies explaining that digital transformation in sports broadcasting production requires real-time coordination, integrated production communication, and cross-divisional collaboration to maintain the quality of audience visual experience (Hutchins & Rowe, 2020).

Technical Constraints and Environmental Influences on Production

The findings indicate that field conditions and infrastructure are the main factors influencing the quality of Liga 2 broadcast production. The limitations of stadium facilities and lighting systems that have not yet met broadcasting standards demonstrate a gap between the technical requirements of sports broadcast production and the readiness of match venues. These findings are consistent with the study by

(Gilang, 2025), which emphasizes that infrastructure quality, lighting systems, and stadium readiness play an important role in determining the quality of sports broadcasts. In addition, changes in natural lighting intensity and weather conditions also become technical challenges that require continuous adjustments throughout the production process, as explained in the study by Pujianti (2010).

Furthermore, the importance of backup equipment indicates that sports broadcast production depends not only on the primary system, but also on the readiness of risk mitigation through equipment redundancy. On the other hand, budget limitations affect the number of cameras and the variety of shots

that can be produced. This condition is consistent with the Global Mediacom (Global Mediacom, 2023) report, which states that financial factors directly limit production complexity and the visual diversity of broadcasts.

Based on field observations and production documentation, the limitations of stadium infrastructure also affect the crew's flexibility in determining variations of camera angles. Several Liga 2 stadiums still have uneven lighting systems and limited camera placement areas, requiring the production crew to make real-time adjustments to exposure, focus, and shot composition in order to maintain stable visual quality. In addition, the limited production equipment and lack of backup cameras result in less optimal visual variation compared to professional sports broadcasting standards.

Overall, these findings indicate that the quality of sports broadcasts is determined not only by the technical competence of the production crew, but also by infrastructure readiness, technological support, and the effectiveness of the production system. Therefore, sports broadcast production requires a high level of adaptability and coordination to ensure that broadcasts remain stable, professional, and engaging for audiences.

Visual Decision-Making in Live Broadcast Situations

The findings show that visual decision-making in live broadcasting situations is a process that occurs very quickly and requires a high level of accuracy. The post-goal visual sequence described by Adit, ranging from the goal scorer to the reactions of opposing supporters, demonstrates the existence of a narrative pattern that must be followed to maintain story continuity within the broadcast. Meanwhile, Agung's emphasis on accuracy in determining replay timing indicates that visual decisions are not only technical in nature, but also strategic in managing the rhythm of the viewing experience. The use of safety shots explained by Aji shows that broadcast production also requires anticipatory mechanisms to maintain visual stability when disruptions occur. On the other hand, Zoddy's view regarding the importance of intuition emphasizes that practical experience is an important factor in predicting and responding to crucial moments.

Analytically, these findings indicate that decision-making in sports broadcast production depends not only on technical procedures, but also on cognitive abilities and practical experience in interpreting situations in real time. Intuition developed through field experience enables the production crew to make decisions that are both quick and accurate under dynamic conditions.

Therefore, sports broadcast production can be understood as a process that simultaneously integrates cognitive and technical aspects, where decision-making occurs alongside technical execution in the control room. This emphasizes that visual quality is determined not only by equipment and production systems, but also by the interpretative and responsive capacities of the production crew in handling live broadcasting situations.

Based on control room documentation as shown in Figure 2, crew coordination was observed to occur simultaneously through the use of multiview monitors and intercom systems. These observations indicate that visual decision-making in live broadcasts is highly dependent on real-time communication among the Program Director, cameraman, replay operator, and technical director.



Figure 2 Program Director (PD) in the Control Room
Source: Pegadaian Liga 2 Documentation

Influence of Technology and International Standards on Liga 2 Production

The findings show that the use of technology in Liga 2 broadcast production has become an important factor in improving visual quality. Agung's emphasis on technologies such as super slow-motion and modern graphics indicates that technological elements function not merely as supporting tools, but as key instruments in enhancing the audience's visual experience. Adit's statement regarding the difference in the number of production devices between local and international broadcasts indicates a technological capacity gap that directly affects the complexity and variation of visual outputs that can be produced. On the other hand, Zoddy's explanation regarding the development of remote broadcasting, along with Aji's view on the use of devices such as Ronin and steadicam, demonstrates efforts to adapt to more flexible and efficient production trends.

The utilization of technologies such as super slow-motion, Ronin, and steadicam in Liga 2 broadcasts significantly enhances visual aesthetics by providing sharper motion details and more dynamic and immersive shots, where the use of high-speed cameras is considered more effective in producing clear and detailed visuals in fast-moving sports broadcasts than merely increasing image resolution quality.

On the other hand, the adoption of remote broadcasting demonstrates a significant effort toward operational efficiency by reducing logistical and operational costs through integrated remote production systems (Coche & Lynn, 2020). However, this modernization process is still constrained by limitations in network infrastructure, which result in uneven digital broadcast coverage (Marwiyati & Wahyudin, 2020), strict latency requirements necessary to maintain professional broadcast quality (Kawamoto et al., 2021), and the lack of formal competencies among human resources, who often acquire technological skills through self-learning, thereby limiting the competitiveness of television stations (Alamsyah et al., 2024).

Therefore, the success of high-quality sports broadcasting depends not only on the sophistication of hardware technology, but also on the readiness of production systems and the professionalism of the crew in managing existing technological and infrastructure limitations (Sabillah, 2022).

Efforts to Improve the Visual Quality of Liga 2 Broadcasts

The findings show that improving the quality of Liga 2 broadcasts depends not only on technical aspects, but also on the development of human resource capacity and changes in perspectives within the sports broadcasting industry. Adit's and Agung's emphasis on the importance of crew competence and specialization indicates that professionalism in each role is a crucial factor in producing consistent visual

quality. Meanwhile, Zoddy's view on the need for changes in industry culture suggests that visual documentation is still often regarded merely as an operational necessity rather than as a strategic investment in broadcast quality development. On the other hand, Aji emphasized the importance of regular evaluation and technological adaptation as part of a continuous learning process in sports broadcast production.

These findings indicate that improving broadcast quality cannot be achieved partially, but requires an integrated approach involving various stakeholders, including league organizers, broadcast operators, and infrastructure providers. The visual quality of broadcasts is the result of a combination of individual competence, effective teamwork, and adequate technological and production facility support. Therefore, the quality gap between Liga 2 and other professional leagues is caused not only by technical limitations, but also by the lack of optimal integration among the various elements within the sports broadcasting.

These findings are consistent with the study by Janitra (2023), which emphasizes that the quality of sports broadcasts is influenced by thorough planning, effective crew coordination, and accurate technical execution in the field. In addition, the role of practical experience and intuition in visual decision-making reinforces the findings of Shang et al. (2021), which state that visual stability, camera angle accuracy, and technical performance significantly contribute to audience perceptions of broadcast quality.

Furthermore, various challenges such as equipment limitations, uneven stadium lighting, and field conditions indicate that sports broadcast production operates within a dynamic and constrained environment. These conditions require crews to continuously adapt while optimizing available resources. Therefore, the integration of modern technology and the enhancement of human resource competencies become key factors in improving production quality.

Overall, the findings of this study lead to the understanding that Liga 2 broadcast production is a complex process involving the synergy of technical, creative, and managerial aspects. Efforts to improve broadcast quality require not only operational improvements, but also transformation at the system and industry culture levels in order to approach more professional sports broadcasting standards.

CONCLUSIONS

This study shows that the quality of Pegadaian Liga 2 broadcast production is influenced by camera shooting techniques that emphasize capturing important match moments, the proper implementation of blocking camera, and the crew's ability to adjust camera angles and shot composition according to the dynamics of the game. The visual quality of broadcasts is determined not only by the technical skills of the crew, but also by stadium infrastructure conditions, lighting systems, equipment availability, and the effectiveness of team coordination during live broadcasts. In addition, the experience and intuition of the crew also play an important role in making quick decisions when facing technical constraints and unexpected match situations.

Production practices considered effective include pre-match briefings, real-time communication, and the use of safety shots to maintain broadcast visual stability. These findings indicate that improving the quality of sports broadcasts cannot be achieved through a single aspect alone, but requires integrated support from technology, infrastructure readiness, and human resource competencies. Therefore, modernization of production equipment, standardization of stadium facilities, and continuous training for production crews are necessary to improve the professionalism and quality of Liga 2 broadcasts in meeting audience expectations.

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