

Factors Affecting Marching Band Competition Results: An Empirical Study of Indonesian Marching Band Activity

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Abstract

This research investigates variables that influence marching band competition scores in Indonesia. By employing Rickel's (2008) variables, there are several indicators applied in the analysis, such as the number of members in the band, total program budget, number of national competitions participated in, rehearsal hours, and years of experience of the coaches. The sample involved includes 66 marching bands competing in an Indonesian national competition, the Grand Prix Marching Band. Most of the samples participants have made regular appearances in this event during 2006-2009. A questionnaire was given to band directors and/or home coaches. Multiple regression is was used to test the variables. This research has found that not all variables in the model have had a strong influence to on the competition score. Amongst the variables, the coach's years of experiences hadve the strongest influence to on competition results, followed by the other variables, namely such as the numbers of members, number of participated national competitions participated in, and as well as marching rehearsal hours, which represent lesser influence factwere less influentialor. Only the total budget of the program does did not significantly influence significantly towards the competition score. Hence, the coach's experience and budget costs are the major factors that differentiate the Indonesian bands from their American counterparts.

Keywords *Marching Band, Competition Score, Grand Prix Marching Band.*

Introduction

Competition in musical activitMusic competitionsy has become an attractive event forin schools and universities. In general, a competition stimulates encourages a child student to focus, and motivate his or her passion, towards a certain specific goal. A child is encouraged to compete amongst his or her peers by gainingthrough self-discipline, and even sacrifice, to do achieve his or her personal best (Robson, 2004). As a medium of such discipline, marching band is an activity that involves physical, musical and artistic dimensions. Most of the timeTypically, marching band deals withis an outdoor activity, where a number of practice days, motivation and team-working are required to set achieve up the ultimate goal: a perfect performance. Moreover, a marching band

has evolved from its former function of 'military spirit' auxiliary function, into a more music in motion (Kirnadi, 2004). The activity has become and more artistic activity (Rickels, 2009). As a compliment to military and festival parades, marching band has shifted from a military-form rule into a more dramatic and theatrical field performance. According to Buyer (2005), marching band competitions offer a useful support to students, such as creating positive and educational traits; establishing goals and commitments, as well as encouraging motivation and providing feedbacks to players. Competitions also provide a healthy, effective and meaningful way to pursue a passion for music (Buyer, 2005, p. 30). Moreover, Hebert (2012) argued that band competitions improve musical ability among students and motivate students them to understand and improve their level of skill level in the bands.

Competition in marching band competitions has have been existed for many years throughout the world. In the USA, marching band competitions has been existed since commenced in 1923, and have experienced a large growth for in high school bands for during the last quarter of the twentieth century (Moore, 1972). In the Asian region, the modern marching band association and competitions can be traced back from the early 20th century during pre-World War II in the Japanese history. The first regional school band competition was held in Nagoya and Tokyo in 1935, which then followed by the establishment of the All-Japan Band Association (AJBA) in 1939. Since then, the event has since become considered as the biggest national competition in Japan, with around 14,000 bands and more in excess of than 700,000 players involved participating (Hebert, 2012). In Indonesia, the development of the Indonesian band competition evolved during the 1970s, where PDBI (Persatuan Drum Band Indonesia – Indonesian Drum Band Association), was acknowledged, albeit debatably, as a sporting activity under the Indonesian Sports Committee-KONI (Banoë, 1996). During those times, there were many competitions under the sporting context held around Indonesia, from the provincial level to a national one. One of the current indicators of the national competition is the Grand Prix Marching Band, which was initiated as the Drum Band Open Championship in 1976. With 12 participating bands, the competition generated a standard set of national gradings, later changing its name to the Grand Prix Marching Band competition in 1982 (Banoë, 1996). Later, America's Drum Corps International (DCI) standard rule influenced this competition with each of the bands performing a 12-minute interactive music, display and marching show.

The Grand Prix Marching Band has been consecutively running throughout its 27 years of supporting marching band activities in Indonesia. It has also set a benchmark for Indonesian bands towards a better quality of music, motion and performance. Strong support by the DCI has made the competition grow intensively among participants. This research is proposed to identify factors that may influence competition scores in Indonesia. Similar research has been conducted by Rickels (2008) in observing the Arizona Marching Band Festival.

The main focus of this research is to oversee the related variables as predictors to Indonesian marching bands. Rickels (2008) employed ten variables to generate empirical correlations against competition scores. These variables are teachers' years of experience, the number of teaching years at school, marching budget, total band

program budget, marching rehearsal hours per week, number of certified marching bands, number of non-certified assistant marching staff, number of students in marching band, total number of students in a band program, and the number of festivals attended. Out of those variables, this research only employs five that are relevant to the Indonesian context, and they will be included in the hypothesis. In addition to the Indonesian context, although it has not been observed in scrutiny, it may be presumed that the number of years a teacher works at a school has only a small effect on marching band competitions. This is because schools outsource many coaches, and it is also likely that music teachers have little experience in teaching bands. Hence, this paper merges years of teachers work at a school with years of experience, marching budget and total band program budget. Another unused variable is the marching band certification, which is not common in Indonesia. Hence, certified teachers and assistants have not been included in this research.

With regards to Indonesian contexts, this research focuses on variables influencing competition scores. The research sought to answer the question: What influences the competition score in the Indonesian marching band?

Hypothesis Development

There has been no previous research conducted on Indonesian marching bands, thus supporting references are from other countries. Rickels (2008) concluded that there is a significant correlation of total band program budget, number of students in marching band, and number of festivals attended with competition score in the USA. He also made a thorough investigation in his 2009 dissertation on nonperformance variables as predictors to marching band contests using a multivariate analysis. He found that marching band size, number of uncertified paid assistant instructors, directors' attitudes towards marching bands and competitions, hours of weekly practice and program budget have a positive log linear or inverse linear relationship to contest scores. Supporting Rickels' research is Davis (2000), who found a positive correlation between director experience, advanced education and tenure time at a school, as well as band size, number of instructors and the size of the auxiliary group. However, he also concluded that there was no relationship between frequency of rehearsals with competition scores.

Based on the preliminary research, this paper offers a similar approach that will be developed in the following hypothesis. Rickels (2008) argued that, based on his findings, larger schools in Arizona generally have a large band program and, consequently, have a larger marching band size. He also concluded that a large program could indicate successful teaching, leading to higher recruitment and retention rates, and eventually indicates successful achievement in competitions.

A number of competitions have been an important factor for students to familiarize and upgrade their talents to uphold their performance. Sheldon (1994) argued that students are required to prepare and perform well in a music competition. Sheldon's argument was supported by Rickels (2008), where more festivals can assist the band and the students to rehearse their performances under pressure, which may result in a higher achievement in the competition. The third variable is the coach's experience

in marching band, and is presumed to be one of the indicators of a band's successful achievement in the competition. Davis (2000) argued that there is a positive relationship between the director's years of experience and competition score. This is also supported by Gumm (2003) in the choral group study, where he found a positive relationship between teachers' experience and high ratings at a festival.

The fourth conjecture relates to the contribution of number of days rehearsal to the successful program of a band. Rickels (2009) found that there is a positive relationship between the number of days rehearsal with the competition score, although his previous research found otherwise (Rickels, 2008). Moreover, Buyer (2003) also argued that having sufficient rehearsal time to prepare music and drills in a marching band produces a successful performance. The last variable is the amount of budget spent by Indonesian bands in preparation for the competition. Previous studies seem to reach a general agreement as Rickels (2008), Hewitt (2000) and Washington (2007) confirmed a positive relationship between program budget cost and competition scores. Overall, the above variables generate a possible hypothesis to answer the research question:

H_1 : The higher the number of members in a band, number of competitions, coaches' years of experience, days of rehearsal and budget spent in a band program, the higher the achievement in the competition.

Method and Data Collection

This section describes the empirical method used in this research. The participants of the study were taken from the bands competing in the Grand Prix Marching Band from 2006 to 2009. All of these actively participated in this event at least two or more times. A sample of 66 out of 72 listed bands was collected using a paper questionnaire (return rate of 91%). The questionnaires were given to the respective band directors and/or technical coaches involved during the period of the competition, and was distributed at the same event in December 2010.

The band directors or coaches were given 26 questions representing the variables of number of members, number of national competitions attended, coaches' experience, number of days rehearsal per week, as well as the total budget spent in preparing for the competition. These five variables are represented by four questions each, in order to ensure respondents' consistency, in addition to the demographic questions. A mixed multiple and Likert-scale question were used to ensure an objective answer. The band's score recapitulation was retrieved from the trendmarching website (www.trendmarching.or.id), which provides a complete listing of competition results from 2006 to 2009. The selected years are based on the adapted DCI adjudicator system which the competition used for 4 years. An average of a four-year period of scores was used in defining the dependent variables and the SPSS program was used to generate the results.

To test the research hypothesis, a multiple linear regression was developed whereby the competition score acts as the dependent variable and number of members, number of national competitions attended, coach's experience, number of days rehearsal per week and total budget variables act as the independent variables:

$$Y_{CS} = \beta_1 \text{NoM} + \beta_2 \text{NoCA} + \beta_3 \text{CE} + \beta_4 \text{NoDW} + \beta_5 \text{TB} + \varepsilon$$

Where:

- CS : Competition score
 NoM : Number of members
 NoCA : Number of national competitions attended
 CE : Coach's experience
 NoDW : Number of days rehearsal per week
 TB : Total budget

Result

The given result is presented as follows: Initial demographic questions are represented by the coach's gender, age and education level. The result was that 97% of the coaches are male, followed by 90.9% of their ages ranging from 25 to 34 years. Their average education level was bachelor degree graduates (59.1%). Based on the regression performed above, Table 1 shows the ANOVA R Square and adjusted R Square of 0.436 and 0.389, respectively. This indicates that the variables can explain 38.9% of the dependent variable. The squared multiple correlation (R^2) is 0.436, indicating that 43.6% of the variability in the competition scores is explained by the five provided independent variables. The P-value for the F-test statistic is less than 0.05, providing strong evidence against the null hypothesis.

Table 1 ANOVA table (specific table name)

Model	Sum of Squares	df	Mean Square	F	<i>p</i>
1 Regression	4473.734	5	894.747	9.272	.000
Residual	5700.291	60	96.505		
Total	10264.024	65			

Notes: $R^2 = 0.43$, ($p < 0.05$)

Table 2 shows the descriptive statistics for each of the independent variables. In order to validate the model, co-linearity test was performed to ensure interdependencies among the 5 variables. As given in Table 2, the result is favorable where all variables exceeded a value of 1.

Table 2 .Variable values to the model

Variable	Var. Mean	Var. Standard Deviation	Collinearity	F	<i>p</i>
Number of Member Number of National Competition Attended	3.18	0.742	2.132	0.347	0.013
Years of coach Experience	3.29	0.602	1.525	0.240	0.005
Number of Day Rehearsal per Week	2.29	1.174	1.286	0.316	0.000
Total Program Budget	2.06	0.892	1.297	0.206	0.032
	2.39	0.926	1.180	0.117	0.791

The number of members represents the total players in a band, consisting of brass, percussion and the colour guard. The mean is 3.18 that represents an average number ranging from 76 to 100 members in one band with a standard deviation of 0.742. The number of national competitions attended shows a mean of 3.29 which denotes most of the bands have competed two or more times with a standard deviation of 0.602. The years of coach's experience variable, on the other hand, revealed a mean of 2.29 that indicates that most of the directors have marching band experience from 6-10 years, with the largest standard deviation amongst all variables (1.174). In terms of the number of days rehearsal per week, a band is spending three days per week on its rehearsal. The last variable, total program budget, indicates most of the bands spend about 100 and one to five hundred million rupiahs in preparing for the national competition with a mean of 2.39 with a standard deviation of 0.926. The beta (β) coefficient represents a positive relationship between all independent variables and the dependent one. This indicates the five variables have a positive contribution towards the competition score.

The hypothesis recalls the higher the number of members of a band, number of competitions, coaches' years of experience, days of rehearsal and budget spent in a band program, the higher the achievement in the competition. Table 2 shows a positive and strong relationship between the dependent and independent variables, namely, number of members variable and competition scores, with a significant level of 0.013 ($P < 0.05$), number of national competitions attended, with a level of 0.005. The third and fourth variables result in a strong relationship with a level of 0.000 and 0.0032, respectively, and only the fifth variable has a less significant relationship with the competition score with a 0.791 level of significance ($P > 0.05$).

Discussion

The findings above generate a variety of discussions. Demographically, the majority of marching band coaches in Indonesia are males, ranging from 25 to 34 years of age. These factors indicate that gender is considered an important factor in Indonesian bands. The age factor is also essential in that this age range is considered to be the most productive, when maturity and skills are high enough that a coach can lead and teach

a band. In terms of educational background, more than half of the coaches graduated from bachelor degrees, although only 0.04 % or three of all coaches have a music education background. The latter indicates that not all music graduates in Indonesia possess the ability to teach marching band activity. On the contrary, these coaches have a sufficient level of marching band experience despite their non-music education background.

In terms of the model, the finding indicates two of five variables support Rickels' model, while the other three may be explained otherwise. One of the findings expresses that the coaches' experience resulted in the strongest influence towards competition scores. The same case was also found and supported by Davis (2000), Maxwell (1970) and Goodstein (1987). This is, however, not found in Rickels (2008) and Washington (2007) where coach experience did not show any significant influence in terms of competition scores. Moreover, Davis (2000) emphasized that the most successful directors or coaches had the most teaching experience, longer tenure in their present position and more experience competing with band ratings.

Many directors and coaches gain their musical experience by imitating America's DCI. As part of self-learning, most of the directors tend to learn by writing, self-learning music arrangements or by transcribing music from the DCI bands. Leggett (2004) found a flow of learning from arranging, observation, score study, experimentation and information passed on from one arranger to another. In addition, the process of imitating, copying from recordings and instrument experimentation are examples of learning music in an informal manner (Green, 2005). This mimetic demeanor is a common reflection of most of the coaches in Indonesia, caused by limited resources of musical references. In addition, most of their skills are based on the experience of playing music without a proper music education, and those who have played for some time in the band will act as a coach to teach what he or she has mastered in the field (Hermawan, 2010). Thus, the length of experience enables them to learn and teach music to the band.

The same state occurs in the Indonesian context where experienced coaches possess such criteria, in addition to the fact that most coaches have more than 11 years of marching experience, including 6-10 years of teaching. In general, a common step in becoming a coach is to be a coach's assistant or section leader in an instrumental group. He or she is responsible for the group in providing assistance to teach music scores, organize sectional rehearsals and perform such leadership. Goodstein (1987) argued that the leadership behaviour of a director can determine the successful outcome of a band program. This attitude may influence teaching effectiveness to students and indicate the quality of the band performance. From this research, the top five Indonesian marching bands were directed by experienced coaches with strong leadership attitudes. These skills are nurtured over time and act as the embryo to becoming an experienced marching band coach.

Another variable that supports the influence of competition scores is the number of members in a band. The finding supports previous research by Rickels (2008, 2009) and Davis (2000) in that the number of members affect competition scores. Statistically, 42.4% of the participants in the event have 76 to 100 members in the band (mean: 3.18). Rickels (2008) explained that the member size may affect better

reception to judges, which supports the band's musical balance, blend and intensity of sound. A further investigation may become interesting to develop, as sound intensity may result in better scores in marching band competitions. Moreover, it is believed that this outdoor performance shares an excitement through a roar of sound and physical activity that only a marching band has (Mason et al., 1985) which inevitably generates emotion in the audience.

Nonetheless, many competing bands often neglect the importance of the acoustic impact in the indoor environment. The Grand Prix Marching Band competition was held in an indoor stadium due to the uncertainty of the weather in Jakarta, Indonesia. The number of members and ratio of brass and percussion are some of the issues Indonesian bands tend to replicate, or are even inflicted from America's DCI, but disregard the volume reduction and reverberation. In order to meet this requirement, some bands may include up to more than 100 members in the field, while the size of the field may not adequately fit this number. Hence, it is also important to justify the arrangement style to the performance. Kastens (1981) listed several questions to be considered when arranging for marching band, and one of the questions is whether the arrangement is scored for outdoors or indoors. Thus, it is also important to consider the size of the field when choosing a competition with the number of members participating in the band.

The other two variables, namely the number of national competitions attended and number of days rehearsal per week generate a significant influence on competition scores. This finding contradicts with Rickels (2008) and Davis (2000) where they found no significant relationship between the number of days rehearsal per week and competition scores. On the other hand, Rickels (2009) found otherwise, where the number of national competitions attended did not significantly influence competition scores, but was significant in terms of the number of days rehearsal per week. As the findings are arguable, he suggested further investigating these variables with regards to the quality or quantity of the rehearsal.

The situation in Indonesian bands reflects in favor of the findings, where 56.1% of the bands have participated in national competition, with 45.5% of them participating in the Grand Prix Marching Band competition. The result supports Rickels (2009) and Buyer (2003) arguments in that a band must prepare and spend a great deal of time rehearsing. In many successful cases, the top five Indonesian marching bands prepare themselves in 9-11 months of rehearsals, with a range between two to four days of rehearsal per week. When the time is closer to the day of competition, the bands often increase their rehearsal time and training centres to 4-5 times per week.

The total budget variable is the only variable with no significant influence on competition scores, with 0.791 value and a β of -0.266. It is interesting that this finding contradicts the previous research of Rickels (2008, 2009), Saul (1976) and Washington (2007). One possible reason is that 51.4% of the bands allocate their budget for transportation and accommodation during their stay at the event, while 16.4% of the bands spent their budget on coaches and program costs.

In relation to the Indonesian context, the Grand Prix Marching competition is a national event held annually in December in the capital city of Jakarta. The participating bands come from various regions in the Indonesian archipelago including Sumatera,

Kalimantan, Bali, Sulawesi and Papua. These bands require a significant amount of traveling expenditure in that they often travel by airplane, instead of sea transport, to save travel time. This may explain why the budget allocates more to transportation rather than to the program itself. Some bands also spend amounts on materials such as background displays and pictures to support the visual theme of the program, as well as an excessive amount on visual and colour guard equipment in order to leverage the score. Conversely, this effort is evidently not a key factor in success. Thus, Indonesian bands must take care when spending their budget on competition preparations.

Conclusion and Future Research

The Rickels's model provided a useful tool to understand how marching bands respond to their national competition. In general, there are some similarities in terms of band behaviour between the American and Indonesian bands, in that the Indonesian bands are influenced by America's Drum Corps International. Although some of the variables do not reflect any significant relationship with the competition as those presented in Rickels's model, it is possibly due to different circumstances that affect the band's preparation in Indonesia. To answer the research question, the coach's years of experience has the strongest influence towards the competition score, while the total budget program was the weakest predictor. In turn, two factors contrast between the Indonesian bands and their American counterparts. Budget costs relate to the geographical area in Indonesia and the excessive usage of visual property, while years of coach's experience relate to the long tenure in the field and leadership factor.

Nonetheless, the model may not explain other variables that may be relevant to the Asian perspective, especially in Indonesia. A possible research project would be to investigate the cultural impact on the Indonesian marching band. Groulx (2009), for example, identifies that Japanese bands have different cultural components to American bands, such as a sense of respect, discipline and cooperation. Moreover, further investigation of bands with different ethnicities could include an overt study to determine different cultural backgrounds in music learning (Gumm, 2003). An issue of music education in Indonesia, and the limited music information in the rural part of the nation, are some of the important factors that may further explain the standard of the bands. Therefore, providing related variables in cultural contexts such as ethnicity, background and Indonesian national culture are likely to be important predictors when discussing Indonesian bands.

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Biography

Marko S Hermawan has extensive experience in marching band activities. He has worked closely with several of the finest marching bands in Indonesia, including Marching Band Bontang Pupuk Kaltim, Marching Band Madah Bahana University of Indonesia (MBUI), Korps Putri Tarakanita Marching Band and Semen Padang Marching Band. Besides coaching and arranging, he also worked as music and general effect adjudicator for several national and international band competitions. Marko received his Bachelor of Economics in Accounting from the University of Indonesia and a Master of International Business from Curtin University, Western Australia. He is currently undertaking his PhD in Accounting at Victoria University of Wellington, New Zealand with a scholarship from the Directorate General of Higher Education (DGHE/DIKTI), Ministry of Education, The Republic of Indonesia. He is also an on-leave faculty member at Binus Business School, Bina Nusantara University, Jakarta Indonesia. Email: Marko.Hermawan@vuw.ac.nz