The Impact of Professional Sports Industry on Exercise Motivation and Physical Activity Engagement in Young Adult Sports Fans

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Abstract

This study's purpose is to investigate the relationship between the presence of the professional sports industry and the level of motivation and physical activity of sports fans, how the experience of watching sports and being surrounded by their favorite professional sports content on social media affects exercise motivation and physical activity. The objective is to provide evidence that sports as entertainment might potentially motivate sports fans to exercise. A survey was filled out online (once) by 85 Indonesian sports fans who actively followed the sports news and professional sports clubs via Instagram, reporting their past and current state of exercise motivation and physical activity engagement. The study found that on average, the overall motivation (mainly for intrinsic, identified, extrinsic motivation) in the present is higher than the overall motivation in the past; however, the identified motivation and amotivation in the past are higher than that in the present. In terms of physical activity engagement, overall, a positive difference is found between the past and current state (current condition – past condition) of physical activity engagement reported by participants. The results of this study indicate that professional sports might potentially become effective motivation for sports enthusiasts.

1. Introduction

Physical activity is always linked to weight loss. Evidence shows that it reduces the risk of obesity as its long-term benefit. With an average of 2.8 million per year death caused by obesity in the world (World Health Organization, 2021), obesity has been considered a global health problem. Nevertheless, physical activity level from adolescence to young adults tends to decline (Ryerson, 2008), as it does for the popularity of game-based sports activities such as football. These indicate that more motivation is needed to keep young adults physically active, and as a result, prevent them from being obese.

Professional sports entertainment has become popular in society. This is shown by the expected growth percentage of the spectator sports market which reaches a CAGR of 5.9% (Business Wire, 2019). Numerous research support that entertainment in general, especially through broadcast media, positively changes society's health-related behavior effectively in numerous countries (Ryerson, 2010). Some experts also define it as ‘what you watch is what you are’ (Sestir, M & Green, M, 2010), implying that society reflects on the movie character to react to something that happens in real life. While the aforementioned studies used movie and opera entertainment as the factor that changes society’s behavior, the present study employed sports entertainment to determine the effect of the experience of watching sports frequently and following the sports news and sports clubs on the change in the behavior (motivation) and the actual engagement of young adult sports fans in exercising. Today, the world witnesses the consumption growth in sports content on the digital platform, both related and not related to live matches (Nielsen Sports, n. d). In addition to the live matches, there are more components in sports, such as team-building activities and athletes' vlogs that might potentially affect the change in motivation and physical activity engagement of sports fans.

Currently, in terms of professional sports, studies focus on the relationship of the professional club with the fans, loyalty, and solidarity. In the physical activity field, studies focus more on the effect of college courses as a physical education on physical activity. However, there is still limited research that links professional sports with the sports fans’ exercise motivation and physical activity (PA) engagement aspect.

This study aims to determine the impact of the sports entertainment industry on the change of fans’ motivation based on self-determination theory and PA engagement, then determine the most motivating content in sports media as with the growth in its share and the advancement of technology, sports entertainment has implemented a creative way to make

the spectator, followers, and fans keep engaged in sports entertainment through sports media. In this study, content in sports media that motivate young adult sports fans to exercise the most is identified.

2. Literature Review

2.1. Professional sports

2.1.1. The industry

"Professional sports" is defined as the sport competitive events in which the athletes get paid to compete for professional sports clubs. The industry of sports professionals includes the sports leagues (Barclays Premiere League, MLB, NFL, etc), sports apparel (Adidas, Reebok, Under Armour, etc.), sports gambling, sports travel/stadium, sports medicine/supplements, sports memorabilia, and sports marketing.

2.1.2. Sports Fans

The term of sport fans refers to those who are interested in and follow sports, athletes, and/or teams (Sloan, 1989; Wann, 1997, as stated in Wann & James, 2018). Wann and James (2018) discuss how the term is different from "sports spectator" as both are frequently used interchangeably in many studies, leading to the researcher's confusion. According to Wann and James, sports spectators might include those who simply watch the sports without having an interest in the sports and/or teams themselves, such as those who want to accompany their friends or are given free tickets. However, such individuals cannot be considered sports fans. Nevertheless, both terms are difficult to be used separately as both are very closely related. Sports consumers can also be classified as direct and indirect sports fans. The individuals who attend the events directly are called direct sports consumers while those who are involved with sports through mass media (i.e. Internet, television, and radio).

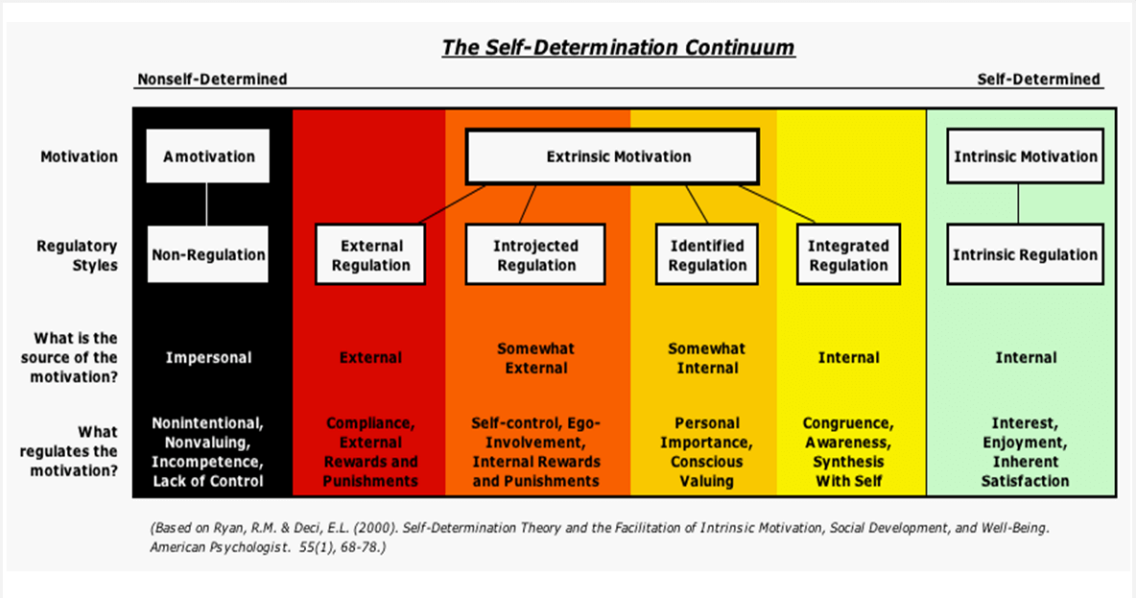
There are numerous studies about sports fans' behavior. states These studies have proposed theories that discuss the advantage of being a sports fan, such as entertainment, positive stress, a break from work, and satisfaction (Sloan, 1979; Wann & Wilson,1999 as stated in Capella, M, 2000). However, some theories also uncover the negative effects of being sports fans, including aggression and violence (Smith, Patterson, William, and Hogg, 1981). Other studies also investigate the individuals' self-esteem. A study conducted by Berendt and Uhrich (2016) found that rivalry in two supporter teams affects the perceptions of public collective self-esteem in relation to supporters of the same team positively.

2.2. Self-determination theory

Self-determination theory (SDT) is a framework that focuses on the level of self-motivation in human behavior (without external influences). To produce the most effective motivation, intrinsic motivation, it is believed that psychological needs which are autonomy, competence, and relatedness are needed to be satisfied. Autonomy is defined as the feeling of liberty and freedom to decide and act according to internal will. Deci (1971) states in his finding that external reward, such as when someone is offered a prize as a motivation, is likely to demolish self-determination. Competence is the desire to be able to control the outcome. Deci (1971) and Vallerand and Rein (1984) suggest that positive feedback from other people may boost self-determination while negative feedback may undermine it. Relatedness is a feeling of belonging and the feeling to interact with and being connected to.

According to Ryan, Rm. & Deci, E. L. (2000), motivation ranges from amotivation to intrinsic motivation. Amotivation is the lowest level of self-determination in which individuals do not have intention or motivation (non-autonomous). At this level, there is a

feeling of frustration due to the lack of psychological needs (autonomy, competence, and relatedness). Individuals who are at this level of motivation act without valuing the result and benefit of the action. The next level is extrinsic motivation which consists of external, introjected, identified, and integrated regulation. Deci and Ryan (2000) argued that extrinsic motivation is caused due to the lack of autonomy. The individuals whose motivation is in the external regulation level are motivated externally. For instance, they are given rewards if they do as they are told and punishment if they do not comply. Next, introjected regulation is where the motivation is external but has been partially internal. In this stage, individuals do



something to avoid the feeling of guilt if they do not do it. The most autonomous level of self-determination in extrinsic motivation is integrated regulation. This includes the awareness of the benefit of doing the action as the motivation.

The most self-determined and effective motivation is intrinsic motivation that comes internally. At this level, individuals do something become they enjoy and have an interest in it.

SDT has been applied to numerous fields of study including sports science and exercise motivation. In a study that was conducted by Kristjansson (2017), SDT is adopted to investigate the impact of choice in physical education class on exercise motivation and

physical activity in college students. This study found that intrinsic regulation, introjected regulation, and identified regulation over time. However, there are no significant differences between students who were given the choices and those who were not.

3. Method

3.1. Participants

Participants were male and female young adults (sports fans) aged 18-25 years, living in Java island, Indonesia, and most are indirect sports consumers. The participants were found through the sports fans online community and recruited online through social media. They filled out the online questionnaire voluntarily and with consent.

3.2. Research model and Hypothesis

This study compares the past condition with the current condition of the young adult sports fans' exercise motivation and physical activity (PA) engagement that were reported by the participants. The study adopted the self-determination theory (for motivation) that was developed by Richard Ryan and Edward Deci and Godin Leisure-Time Exercise Questionnaire (for exercise).

The data were collected once through the questionnaire. Participants were asked about their current condition (when they often engage with the sports industry and watch sports) and past condition (when they rarely engaged/did not engage with the sports industry and rarely watched/did not watch sports) of exercise motivation and PA engagement.

In this research, as the major sports fans' forms of engagement with the sports industry is through sports match (as spectators) and sports content on social media, the experience of watching sports and following sports on social media (athlete, teams, and events) can be used

as the independent variable. Exercise motivation and PA engagement are both dependent variables.

In this study, the past condition is defined as the condition when the participants rarely engaged/did not engage with the sports industry (rarely watched and followed or did not watch and follow sports on social media) and the current (present) condition is defined as when the participants often engage with the sports industry (often watch sports and follow sports on social media). The hypothesis could be set up as the following:

H1: The present self-determined exercise motivation is higher than the past self-determined exercise motivation of young adult sports fans.

H2: The present physical activity engagement is higher than the past physical activity engagement of young adult sports fans.

H3: The frequency of engaging with the sports industry is correlated with the change in exercise motivation (self-determination).

H4: The change in exercise motivation (self-determination) is correlated with the change in physical activity engagement.

3.3. Measures

To measure exercise motivation, BREQ-2 (Markland & Tobin, 2004), a modified version of the Behavior Regulation Exercise Questionnaire, is adopted. The questionnaire measures the self-determination level, a theory developed by Deci and Ryan, in exercise motivation. The questionnaire has been widely used in past research and is considered as valid and reliable. The 19 items in the questionnaire identify five factors: identified regulations (to achieve some goal although it is an individual decision), introjected regulation (having a need inside to pursue sport caused by external course), intrinsic regulation (pursuing sports for satisfaction),

amotivation (no intrinsic motivation), and external regulation (meeting external requirement). In this study, participants filled out the questionnaire with the answer on a scale of 0-4 (with 0, as not true and 5, as very true) before and after engaging with the sports industry. Thus, the Relative Autonomy Index (RAI) of self-determined motivation was determined using the formula:

> RAI = (amotivation × (−3)) + (external regulation × (−2)) + (introjected regulation × (−1)) + (identified regulation × 2) + (intrinsic regulation × 3)
>
> The RAI ranges from -24 to +20 with higher RAI indicating higher self-determined motivation.
>
> Bangor University (n.d.)

Additionally, to measure physical activity engagement, the study uses the Godin Leisure-Time Exercise Questionnaire (Godin, G., Shephard, R. J., 1997). This measures the average length of time in which the participants do strenuous exercise, moderate exercise, and light exercise. Then, the data will be calculated by:

> Total Leisure Activity Score = (strenuous exercise times per week × 9) + (moderate exercise times per week × 5) + (mild exercise times per week × 3)
>
> With more than 24 units Godin Scale Score as active, 14-23 units score as moderately active, and less than 14 units as insufficiently active.
>
> Godin, G (2011)

Lastly, participants were asked to indicate which part of the experience of watching sports and/or following sports on social media motivate them to exercise.

4. Results and Discussion

4.1. Demographic Characteristics of Participants

Of 85 of the total participants, 66 identified themselves as male and 19 identified themselves as female. The greater number of male participants when it is compared with the number of female participants might be because the professional sports industry is still more popular among men than it is among women. Forty-nine participants reported that they are university students and 26 participants reported that they are non-students.

Table 1: Demographic Characteristics (n = 85, Indonesia).

Variable	Categories	Frequency	
		N	Percentage (%)
Gender	Male	66	77.65%
	Female	19	22.35%
University Student/Non-Student	University student	49	57.65%
	Non-student	26	30.59%
Age	18-25	85	100%

4.2. Data Analysis

Table 2: Changes in mean of exercise motivation score

Motivation	Scores					The larger score
	Past		Current		Change on mean	
	Mean	SD	Mean	SD		
Intrinsic	8.074	2.655	10.209	2.032	+2.135	Current
Identified	5.259	1.704	6.447	1.328	+1.188	Current

Introjected	-1.69	0.978	-2.117	1.105	-0.427	Past
External	-2.212	2.158	-1.535	1.643	+0.676	Current
Amotivation	-2.965	3.296	-1.429	2.118	+1.535	Current
Overall Self-determination score	6.472	7.226	11.574	4.33	+5.102	Current

Figure 1: Changes in mean of exercise motivation score

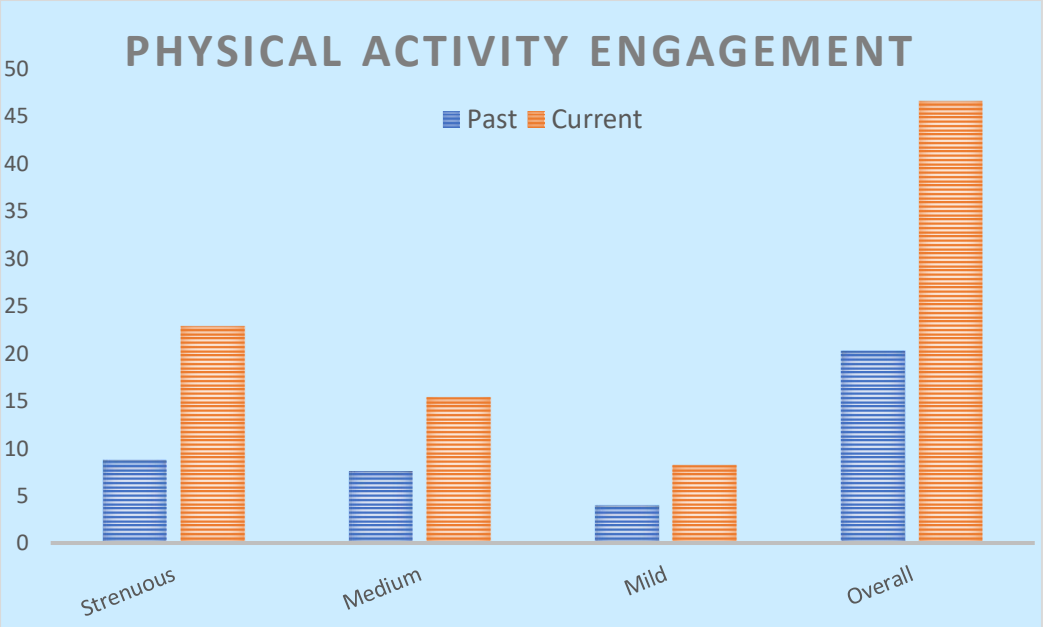
The self-determination score (RAI) in the past condition ranges from -11.25 to +17.67 while in the current state, it ranges from 0 to +18.25. Based on the data, the present self-determination in exercise motivation is larger than the past self-determination. The self-determination score changes +5.102 points, meaning that there is a positive change (current – past condition) of self-determination.

The means of **intrinsic** motivation (enjoyment, pleasure, and satisfaction) score and the mean of **identified** motivation (benefits of exercise) score of the current state are significantly higher than the past condition of motivation scores while the current **external** motivation (pressure or reward from outside) score is only slightly higher than the past external motivation. This means the experience of watching sports and following sports on social media might potentially increase both intrinsic motivation (intrinsic regulation) and some of the extrinsic motivation (identified and external regulation).

The **introjected** motivation (feel ashamed/guilty when not doing exercise) score of the current state is lower than it was in the past. This means that introjected motivation, which is a part of extrinsic motivation, potentially decreases. The current **amotivation** (no desire) score is higher than the past amotivation score as reported by participants, meaning that amotivation is higher in the past than in the present. This indicates that the experience potentially decreases amotivation significantly.

This might be a positive sign as self-determination usually effectively contributes to a positive result. In addition to the choices in what sports or sports teams they are interested in, the professional sports industry also gives an indirect choice in what sports the young adult sports fans would like to play/do. This is because the professional sports industry provides various sports which act as encouragement.

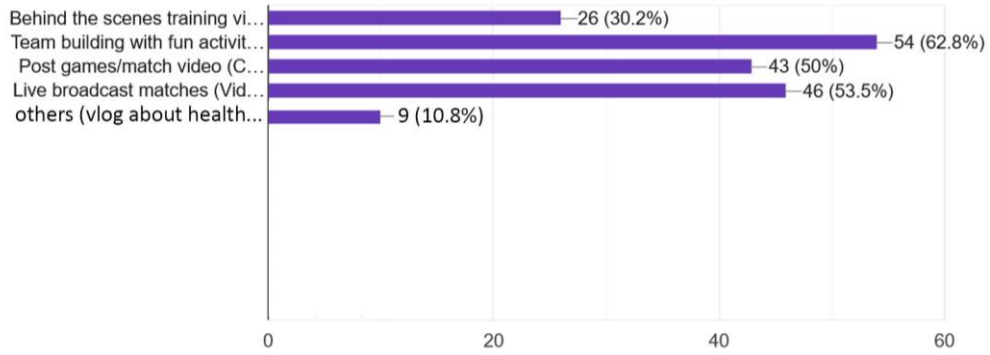
Figure 2: Changes in mean of Godin Leisure-Time Exercise score



Note: There are 72 participants whose answers in the Godin Leisure-Time Exercise questionnaire are valid (the other 13 participants' answers are invalid). These 72 answers are used to measure the physical activity engagement

The graph above illustrates that the **overall physical activity (PA) engagement score** of the young adult sports fans is significantly higher in the current state, which is active (46.54 points) than it is in the past state, which is moderately active (20.27 points). The most significant difference is seen in the **strenuous** exercise with 14.07 points difference (8.76 in the past and 22.84 in the present), followed by **medium** exercise with 7.76 points difference. (7.58 in the past and 15.35 in the present). The **mild** exercise has the lowest difference of mean with only 4.29 points change (3.92 in the past and 8.22 in the present). The higher physical activity engagement score in the present might be because of the higher self-determination score in the present.

Figure 3: Sports-related social media content that motivates the most



The figure above shows that most of the participants, 62.8%, state that team building with fun activities (Outdoor activities, recreation, etc.) motivate them the most to exercise, 53.5% of participants argue that live broadcast matches motivate them the most to exercise, and 50% of participant report that post games/match video motivate them the most to exercise. The least motivating sports content on social media according is behind the scene training video, which only accounts for 30.2% of participants who voted for it. Moreover, 10.8% of participants also mentioned that other contents such as athlete vlogs of daily routine and health and the way the body reacts to speed (motorsports: MotoGP and Formula) motivate them to exercise.

4.3. Statistical analysis

4.3.1. Paired Sample T-Test

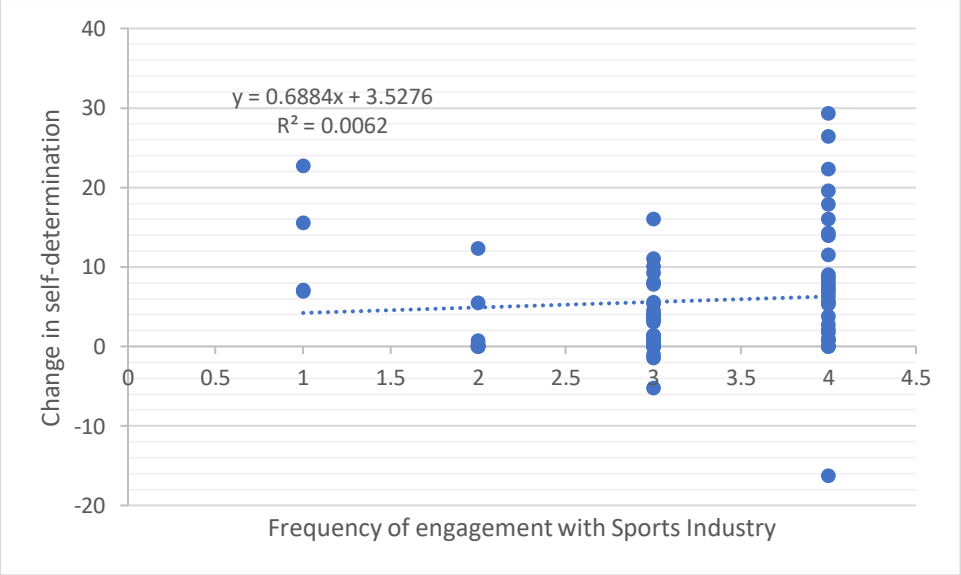
In determining the significance of the effect, match/paired sample t-test is used. It is a statistical procedure in which one sample is measured twice to investigate the mean difference. In this research, although the participants were not measured twice and the participants filled out the questionnaire only once, they were asked about their two conditions, which are current and past conditions, of exercise motivation and PA engagement.

Self-determined exercise motivation average score difference is 5.102, standard deviation of the population is 7.028, n=85, the T-value calculated is 6.693. With 0.05 significance levels, the data show that the present condition (when they often engage with the sports industry and watch sports) of exercise motivation is higher than the past condition (when they rarely engaged/did not engage with the sports industry and rarely watched/did not watch sports) of exercise motivation.

Godin Leisure-Time Exercise average of score difference is 20.704, standard deviation of the sample is 23.158, n=72, the T-value calculated is 9.052. With 0.05 significance levels, the data shows that there is decent evidence that the present condition (often watch and follow sports on social media) of physical activity engagement is higher than the past condition (rarely/did not watch and follow sports on social media) of PA engagement.

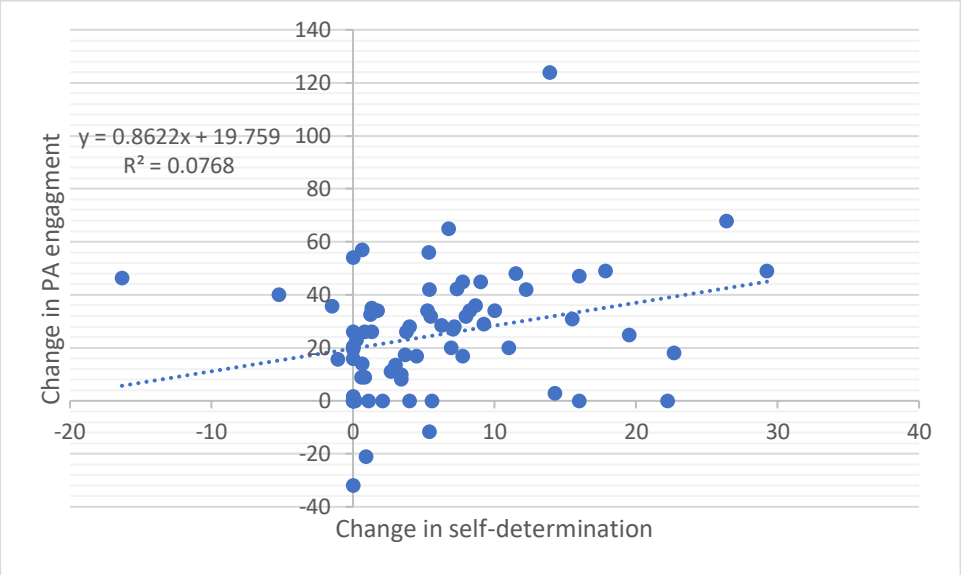
4.3.2. Correlation analysis

Figure 4: Correlation between the frequency of engagement with sports industry and change in self-determination motivation



The frequency of engagement with sports industry and change in self-determined motivation are weakly correlated (R=0.0787). This indicates that the longer the period or the more frequent the participants engage with the sports industry, such as watching sports or sports content on social media, does not always correspond with the great change in self-determination.

Figure 5: Correlation between the change in self-determination motivation and change in physical activity engagement



The change in self-determination motivation and change in physical activity engagement are weakly correlated (R=0.277). This means that the great change in self-determination does not always followed with a great change in the physical activity engagement.

5. Conclusion and Limitations

5.1. Conclusion

The purpose of this study is to examine the effect of the presence of the sports industry on young adult sports fans' exercise motivation and physical activity (PA) engagement, then investigate the most motivating (to exercise) sports content on social media. This study focuses on the sports fans in Java Island, Indonesia, mostly those who are indirect sports consumers (engage with the sports industry through mass media). The reason is sports through mass media are most likely to be accessible to everyone anytime.

The study adopts the BREQ-2 and Godin Leisure-Time Exercise questionnaire. BREQ-2 measures the exercise motivation of young adult sports fans based on self-determination theory. The questionnaire consists of 19 items that include questions about intrinsic, identified, introjected, extrinsic, and amotivation. The Godin Leisure-Time Exercise questionnaire measures the average of time that the young adult sports fans engage in physical activity (strenuous, medium, and mild exercise). The questionnaire was filled out only once by each participant and participants were asked to indicate the current and past condition of exercise motivation and physical activity engagements.

The results show that the present condition (when the participants often engage with the sports industry and watch sports) of self-determined exercise motivation and PA engagement is higher than the past condition (when the participants rarely engaged/did not engage with the sports industry and rarely watched/did not watch sports) of self-determined exercise motivation and PA engagement of young adult sports fans. In terms of exercise motivation, the intrinsic, identified, external, and overall self-determined exercise motivation scores are higher in the current state than in the past; however, the introjected motivation and amotivation are higher in the past than in the current condition. These results indicate a

positive impact since self-determination effectively contributes to the change in action. With regards to physical activity (PA) engagement, the average PA engagement changes from "moderately active" in the past to "active" in the current condition.

The study also found that the correlation between the frequency of engaging in the sports industry and the self-determination score is found to be weakly correlated. The change in self-determined motivation and change in PA engagement is also weakly correlated. In terms of the most motivating sport-related social media content, the largest percentage of participants argue that team-building activities content motivates them the most while the smallest percentage of participants argue that behind-the-scenes video motivates them the most although there is also a smaller percentage of participants who argue other things such as athletes vlog motivate them the most to exercise.

5.2. Limitations

There are four main limitations that can be addressed in future research. First, as the participants are recruited through the sports community on social media who watch sport and follows sports on social media, it is possible that most participants are indirect sports consumers (engage in sports through mass media). Although mass media might more easily facilitate the engagement of the fans, a larger sample (for example, by including those who engage in the sports industry directly) may also be considered to generate more confident results.

Secondly, the study compares the current condition (often watch and follow sports on social media) and past conditions (rarely/did not watch and follow sports on social media) of exercise self-determined motivation and physical engagement of sports fans. However, as the period between the "current" and "past" could be very long (years), there might be other

unknown factors that affect exercise motivation and physical activity engagement. For further investigation, the consideration of other factors would generate more accurate results.

Third, the result does not address whether the sports industry changes the exercise motivation and physical activity engagement of non-sports fans. This is because this study only takes sports fans (sports enthusiasts) as participants. A future study might also include non-sports as participants so that the results would apply to young adults in general.

Finally, the data are self-reported which may lead to unreliable results. The participants might be slightly biased based on each participant's perspective and/or not remember the past condition of the exercise motivation and physical engagement.

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