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The Effects of Social Media on Sporting Event Satisfaction and Word of Mouth Communication: An Empirical Study of a Mega Sports Event

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Received: 17 August 2020; Accepted: 5 October 2020; Published: 14 October 2020



Abstract: This study examines the impact of word of mouth (WOM) communication through social media and how it affects satisfaction with the Summer Universiade in Taipei. This study hopes to understand the usage characteristics of social media among university students and the implementation of social media and their effectiveness as a marketing strategy for sport organization. The hypotheses were verified using a survey of 572 university students from four universities that hosted competitions for the Summer Universiade Games. Data were analyzed using *t* test, Pearson's correlation analysis and two-way ANOVA analysis. The results indicated that WOM has impacted satisfaction via social media, and the level of understanding of sporting events was significantly affected by WOM communication and overall satisfaction. Moreover, gender showed no significant differences in WOM communication and overall satisfaction with sporting events. However, male participants had significantly higher value in WOM dissemination than female respondents. In addition, the spectators' understanding of the sporting event on WOM communication and overall satisfaction was not affected by the continued use of social media. Suggestions are provided, including sufficient sports marketing and service quality from the organizers, in order to maintain good sports events and enhance spectators' feelings.

Keywords: social media; word of mouth (WOM); sports event; 2017 Taipei Summer Universiade

1. Introduction

Word of mouth (WOM) refers to communication between non-commercial communicators regarding a product, service, or brand, and it is also considered as an important consumer behavior. The American Communications Research Institute regarded it as a tool for customers to share information through various resources, such as certain products and promotions [1]. Sport fans commonly watch sports events and frequently spread word-of-mouth (WOM) to share their opinions and experiences through various channels, such as on social media [2]. Fans can create, share, and access any type of content at any time, such as brand communities [3] or public brands (e.g., Twitter), through various sources. Nowadays, athletes and sport figures prefer to use social media to encourage interaction with fans. WOM has been recognized as an important outcome of game satisfaction [4].

The 2012 London Olympic Games is known as the "Twitter Olympics" due to users sending a record number of Twitter messages or tweets via social media. The 2014 Sochi Winter Olympic Games built a social media platform on which event organizers, sponsors, athletes and spectators could promote and discuss the Games. This increased activity changed the way the Olympics are consumed [5]. Fans

draw their attention to the event through the media, share their views, experiences and values online, and interact with others. The platform become a reliable source for markets to obtain fan information or even opinions of the game; thus, WOM is an important part of social media marketing [6].

The 2017 Taipei Summer Universiade officials adopted five marketing techniques, namely, an exclusive official website, application, promotional videos, merchandising and promotion. Specifically, officials used a Facebook platform called "Taipei 2017 Universiade" as a conduit to communicate with fans, where hashtags could be used to support the athletes. Hashtags were created by Twitter users, using the symbol "#" before relevant key words or short sentences, and they are not only used on Twitter, but also on other social media platforms, such as Pinterest, Instagram and Facebook. In addition, official news can be accessed through Line, Google, Plurk, Twitter and Facebook, which combined with the influence of on-line celebrities, have direct access to the user to facilitate the transfer of content or to support well-known athletes [7,8]. Fans and attendees use any service function on the Internet through social media to interact and communicate directly with the public, which changes the status of performance fans and popular spectators.

Nowadays, fans' buying behaviors (e.g., a star's commemorative shirt) occur on online platforms frequently, and the interaction of information online social media could directly affect consumers' purchasing intentions [9]. In line with this, a study has found that an increase in purchasing intention may have a greater exploratory buying behavior tendency [10]. Thus, the effective combination of WOM and social media is particularly important. Overall, this study, adopting a media marketing strategy, focuses on the 2017 Taipei Summer Universiade and intends to examine the impact of WOM communication with the overall satisfaction of events through social media. Furthermore, this study seeks to understand the implementation of social media and how effective they are as a marketing strategy for sport organizations.

2. Conceptual Background

2.1. WOM Communication and Social Media

Social media websites have been identified as appropriate platforms for WOM (Canhoto and Clark, 2013; Erkan and Evans, 2014). Katz and Lazarsfeld (1955) [11] found WOM to be seven times more effective than newspaper and magazine advertising, four times more effective than personal selling, and twice as effective as radio advertising in terms of influencing consumers to switch brands. The importance of fans' WOM communication has received extensive attention in the sports management literature. WOM could take a variety of forms to communicate through current customers to others, especially potential customers.

In the sports area, WOM communication has been known as a crisis strategy for recruiting new customers and strengthening the relationship with existing ones [12], increasingly in social media environments. WOM is a spectator-initiated social behavior whereby individuals use social media (e.g., Facebook, Twitter, and Instagram) to share their experiences. If they feel that it is enjoyable or beneficial, consumers are urged to encourage their friends and family [13], thus spreading messages widely and quickly. Previous research has shown that males found WOM, especially through social media, to be more important than females in emotional sporting events, and the more familiar they were with sporting events, the better effect WOM communication had [14,15]. Similarly, in the sport context, fans who are more familiar with the sporting events tend to spend much more time searching for information or sharing their opinions via social media, which seems to have a better WOM effect [16]. However, the relationship among the level of understanding of sporting events, the duration of media, and WOM, having been minimally investigated, should be examined through a quantitative approach. Therefore, our hypotheses are as follows:

Hypothesis 1 (H1). *Gender has significant differences in word-of-mouth communication.*

Hypothesis 2 (H2). *The more familiar individuals are with sporting events, the greater the effect that WOM communication will have.*

Hypothesis 3 (H3). *The more that is known about the event, the longer it stays in social media, and the better the WOM communication.*

2.2. Satisfaction and Social Media

Satisfaction has been at the core of grasping the behavioral intentions of customers in the service environment, with the main point of meeting customers' expectations. A study has found that positive traits and emotions contributes to consumers' satisfaction [17]. Therefore, enjoyable service contexts, for example, sporting events, play a key role in identifying consumer satisfaction. Previous research has pointed out that female customers tend to rate service quality lower when a comparison is made between genders [18,19]. In the field of sports, fans who understand the sporting events significantly prefer to use social media to interact with others, show higher tournament satisfaction. In addition, studies have also indicated that the overall satisfaction and the duration that individuals use social media are determined by the level of understanding of sporting events [20]. Thus, we assumed the following hypotheses:

Hypothesis 4 (H4). *There are significant gender differences in overall satisfaction with sporting events.*

Hypothesis 5 (H5). *The more familiar with sporting events individuals are, the higher their overall satisfaction.*

Hypothesis 6 (H6). *The more that is known about the event, the longer it will stay on social media, and the higher the overall satisfaction with that event.*

2.3. Satisfaction and Word-of-Mouth (WOM)

More recently, factors such as satisfaction, loyalty, quality, trust and perceived value all have a significant relationship with consumer behavior in WOM. A prior study has reported that the overall satisfaction of sports spectators could increase WOM [21,22]. In this study, we inspect the impact of satisfaction on WOM as an independent construct with the following hypothesis:

Hypothesis 7 (H7). *Spectators' overall satisfaction associates positively with their WOM communication.*

In brief, the study aims to examine the usage and perceived effectiveness of social media by the Taipei 2017 Universiade for realizing its organizational objectives.

3. Methodology

3.1. Participants and Procedure

A questionnaire was administered to participants who use social media from four universities, namely, National Taiwan University, National Taiwan Normal University, University of Taipei, and Fu Jen Catholic University, to investigate the overall satisfaction with the 2017 Taipei Summer Universiade Games. The first question asked whether participants "Have ever paid attention to the issues related to the Universiade through social media." Otherwise, participants should describe the issues in their own words in response to an open question. Through this process, we could evoke the memories of participants' WOM communication. Random sampling collected a total of 600 responses from university students, of which 29 questionnaire surveys were removed as they had not used social media. The sample (Table 1) comprised 571 participants (Male = 242 and Female = 329) with three levels of understanding of the 2017 Summer Universiade Games (high = 111, medium = 299, low = 161).

The amount of time participants spent on social media each day was divided into four categories (1 h or less = 245, 2–4 h = 263, 5–7 h = 42, 8 h or more = 22), and the frequency of social media usage was categorized into 5 levels (several times a day = 475, once a day = 82, one or two times a week = 10, several times with intervals over 7 days in a month = 2, less than once a month = 3).

Table 1. Descriptive statistics of respondent background variables.

Factors	Sampling Results	N	%
Gender	Male	242	42.3
	female	329	57.5
The level of understanding of the Universiade	high	111	19.4
	medium	299	52.4
	low	161	28.2
Frequency of use of social media	several times a day	475	83.0
	once a day	82	14.3
	once or twice a week	10	1.7
	several intervals over 7 days in a month	2	0.3
	less than once a month	3	0.5
Media use duration	one hour or less	245	42.8
	two–four hours	263	46.0
	five–seven hours	42	7.3
	eight hours or more	22	3.8

3.2. Measures

WOM. A modified version of Chen’s [23] WOM questionnaire based on Bansal and Voyer (2000) and Walker (2001) was used for this study. Chen’s work emphasized that WOM includes the WOM search behavior scale with three items, (e.g., “I would like to ask others’ opinions about the 2017 Taipei Universiade”) and the WOM dissemination behavior scale with six items, (e.g., “I would like to mention the event to others”), which stand on the point that individuals are willing to spread the message to others. After collecting the data, a reliability test was conducted in SPSS in order to check the internal consistency. The value of Cronbach’s alpha based on standardized items was 0.88 to 0.95 (number of items = 3). According to Hair, Anderson, Tatham, and Black [24], this value means that the internal consistency of the survey was acceptable, and the reliability was quite high.

Satisfaction. Satisfaction mainly referred to the overall satisfaction with the sporting event in this study, and it was divided into two subscales. Firstly, the three-item service satisfaction subscale was developed by Yoshiada and James (2010) [4]; an illustrative item is “You are satisfied with the service you experienced at the 2017 Taipei Summer Universiade.” The internal consistency was 0.96 in the previous studies, while in this study, the Cronbach’s α was 0.95. Secondly, site satisfaction, which measures the experience of using the website, was modified from Wang and Ye (2000). Their Cronbach’s α was 0.71, including four items (e.g., “It is easy to find relevant information in the social media”), while the Cronbach’s α in this study was 0.88. Overall satisfaction was evaluated on a 7-point Likert scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*).

Control Variables. The control variables in the present study, including gender (dummy-coded as male = 1), the level of understanding of the Summer Universiade Games (dummy-coded as well known = 1, common = 2, little known = 3), frequency of using social media (times) and time spent on social media (hours), were measured using a 5-Likert Scale. According to Arnold et al. [25], it is feasible to establish these values for each questionnaire.

4. Results

4.1. Impact of Gender on WOM Communication and Overall Satisfaction with Sporting Events through Social Media

No statistically significant differences were found for gender when compared with WOM (see Table 2): $t(569) = 1.52, p = 0.13, d = 0.13$. That is, male participants ($M = 2.92, SD = 0.81$) showed no more significant values than female respondents ($M = 2.82, SD = 0.77$) for WOM communication effect, so H1 was not supported. Moreover, male participants ($M = 2.77, SD = 0.87$) showed significantly higher values than female respondents ($M = 2.60, SD = 0.83$) for WOM dissemination. This echoes the ideas of Yoo's (2011) study about WOM among Facebook sports brand fans, which showed that male scores were higher than those of females, both in WOM search and WOM dissemination.

Table 2. *t* test for word of mouth (WOM) communication by gender.

	Gender	<i>N</i>	<i>M</i>	<i>SD</i>	<i>t</i>	<i>p</i>	<i>d</i>
WOM communication	male	242	2.92	0.81	1.52	0.13	0.13
	female	329	2.82	0.77			
WOM search	male	242	3.06	0.92	0.33	0.74	0.03
	female	329	3.03	0.88			
WOM dissemination	male	242	2.77	0.86	2.47 *	0.01 *	0.21
	female	329	2.60	0.82			

* $p < 0.05$.

However, gender has no significant difference in overall satisfaction with the sporting event (see Table 3): $t(569) = 1.80, p = 0.07, d = 0.15$, thus rejecting H4. Male participants ($M = 4.15, SD = 0.81$) also showed no significantly different values for service satisfaction from female respondents ($M = 3.99, SD = 0.77$). Both male ($M = 4.28, SD = 1.15$) and female participants ($M = 4.11, SD = 1.16$) showed no significant differences for values in the site satisfaction aspects.

Table 3. *t* test for satisfaction by gender.

	Gender	<i>N</i>	<i>M</i>	<i>SD</i>	<i>t</i>	<i>p</i>	<i>d</i>
Overall satisfaction	male	242	4.22	1.06	1.80	0.07	0.15
	female	329	4.05	1.10			
Service satisfaction	male	242	4.15	1.17	1.57	1.57	0.13
	female	329	3.99	1.18			
Site satisfaction	male	242	4.28	1.15	1.78	0.07	0.14
	female	329	4.11	1.16			

4.2. Impact of the 2017 Universiade Games on the Level of WOM Communication and Overall Satisfaction with Sporting Events through Social Media

The study found that different levels of understanding of the event have a significant difference in WOM search ($F(2568) = 26.929, p < 0.05$) and WOM dissemination ($F(2568) = 31.071, p < 0.05$), which supported H2. Thus, after comparison using post hoc analysis (Table 4), it was found that a high level of understanding was greater than a medium level of understanding in WOM search and WOM dissemination, while a medium level of understanding was greater than a low level of understanding.

Table 4. Variance analysis of different levels of understanding in WOM.

	Source	SS	df	MS	F	Post hoc
WOM search	Between Groups	40.35	2	20.17	26.92 *	A > B > C
	Within Groups	425.55	568	0.74		
	Total	465.90	570			
WOM dissemination	Between Groups	40.31	2	20.15	31.07 *	A > B > C
	Within Groups	368.47	568	0.64		
	Total	408.78	570			

Note. A = high; B = medium; C = low. * $p < 0.05$.

Moreover, it could be found that respondents with different levels of understanding have significant differences in overall satisfaction, which includes the service satisfaction scale and the site satisfaction scale; therefore, H5 was supported. From the research results, service satisfaction ($F(2568) = 39.044, p < 0.05$) and site satisfaction ($F(2568) = 47.193, p < 0.05$) are different in different degrees of understanding (Table 5). Therefore, respondents' satisfaction varies in understanding of the 2017 Taipei World Universiade Games.

Table 5. Variance analysis of different levels of understanding in overall satisfaction.

	Source	SS	df	MS	F	Post hoc
service satisfaction	Between Groups	97.45	2	48.73	39.04 *	A > B > C
	Within Groups	708.91	568	1.24		
	Total	806.37	570			
site satisfaction	Between Groups	110.75	2	55.38	47.19 *	A > B > C
	Within Groups	666.53	568	1.17		
	Total	777.29	570			

Note. A = high; B = medium; C = low. * $p < 0.05$.

4.3. The Influence of the Level of the Events and Media Use Duration on WOM Communication

Analysis with two-factor independent sample ANOVA was performed on the level of understanding of sporting events and the duration of social media on WOM communication. The results are shown in Table 6. We found that the level of understanding of sporting events had a significant effect on WOM communication ($F(2562) = 20.11, p = 0.00, \eta_p^2 = 0.06$). The results of Tukey HSD showed that a high level of understanding in this sporting events ($M = 3.26, SD = 0.79$) was significantly higher than a medium level of understanding ($M = 2.91, SD = 0.69$) ($p = 0.00$). Furthermore, a high level of understanding was also significantly higher than a low level of understanding ($M = 2.49, SD = 0.78$) ($p = 0.00$), and there was a significant difference between a medium level of understanding and a low level of understanding ($p = 0.00$). Overall, the level of understanding of the sporting event was high > medium > low. Meanwhile, Tukey HSD showed that the duration of social media of 1 h or less ($M = 2.79, SD = 0.74$) was significantly related to more than 5 h ($M = 3.05, SD = 0.80$) ($p = 0.03$), while 1 h or less had no significant difference with 2–4 h ($M = 2.88, SD = 0.81$) ($p = 0.40$), and the media durations of 2–4 h and 5 h were also not significantly related ($p = 0.20$).

Media duration has no significant effect on WOM communication ($F(2562) = 1.78, p = 0.16, \eta_p^2 = 0.006$). A level of understanding of sporting events * social duration has no significant interaction in WOM communication ($F(4562) = 1.40, p = 0.23, \eta_p^2 = 0.01$), but there was a small effect size, which thus rejected H3.

Table 6. Variance analysis of the level of events understanding and the media duration on WOM.

Source	SS	df	MS	F	p	η_p^2
Level of understanding of the event	22.20	2	11.10	20.11 ***	0.00	0.06
B media duration	40.31	2	0.98	1.78	0.16	0.00
A × B	3.10	4	0.77	1.40	0.23	0.01
Error	310.29	562	0.55			
Total	354.99	570				

Note. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

4.4. The Influence of the Level of Understanding of the Events and Media Use Duration on Overall Satisfaction with Sporting Events

Similarly, analysis with two-factor independent sample ANOVA was performed on the level of understanding of sporting events and the duration of social media on overall satisfaction with the sporting event (Table 7). We found that the level of understanding of sporting events has a significant effect on overall satisfaction ($F(2,562) = 31.08, p = 0.00, \eta_p^2 = 0.10$). Tukey HSD showed that a high level of understanding of the sporting event ($M = 4.71, SD = 1.05$) was significantly higher than a medium level of understanding ($M = 4.24, SD = 0.93$) ($p = 0.00$); a high level of understanding was also significantly greater than a low level of understanding ($M = 3.50, SD = 1.11$) ($p = 0.00$); and there was a significant difference between a medium and low level of understanding ($p = 0.00$). Overall, the level of understanding of the sporting event was high > medium > low. Moreover, Tukey HSD showed that the duration spent on social media of 1 h or less ($M = 4.08, SD = 1.07$) had no significant relation to more than 5 h ($M = 4.33, SD = 1.04$) ($p = 0.19$); 1 h or less had no significant difference from 2–4 h ($M = 4.12, SD = 1.13$) ($p = 0.92$); and media durations of 2–4 h and 5 h were also not significantly related ($p = 0.29$).

Media duration had no significant effect on overall satisfaction ($F(2,562) = 0.54, p = 0.58, \eta_p^2 = 0.002$). A level of understanding of sporting events * social duration also had no significant interaction in overall satisfaction: $F(4,562) = 0.28, p = 0.88, \eta_p^2 = 0.002$; thus, H_6 was rejected.

Table 7. Variance analysis of the level of understanding of events and the media duration on overall satisfaction.

Source	SS	df	MS	F	p	η_p^2
(A) Level of understanding of the event	64.24	2	32.12	31.08 ***	0.00	0.10
(B) media use duration	1.12	2	0.56	0.54	0.58	0.00
A × B	1.19	4	0.29	0.29	0.88	0.00
Error	580.68	562	1.03			
Total	686.63	570				

Note. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

4.5. Correlation Analysis between WOM Communication and Overall Satisfaction in Social Media

Pearson correlation was applied to explore the relationship between WOM, including WOM search, WOM dissemination, and satisfaction in regard to service satisfaction and site satisfaction (Table 8). It was found that WOM search ($r(570) = 0.90, p < 0.001$) and WOM dissemination ($r(570) = 0.89, p < 0.001$) had a significant positive relationship with WOM communication; WOM search ($r(570) = 0.46, p < 0.001$) and WOM dissemination ($r(570) = 0.61, p < 0.001$) significantly correlated with overall satisfaction; WOM search ($r(570) = 0.43, p < 0.001$) and WOM dissemination ($r(570) = 0.58, p < 0.001$) had a significant positive correlation with service satisfaction as well; and WOM search ($r(570) = 0.42, p < 0.001$) and WOM dissemination ($r(570) = 0.54, p < 0.001$) also had a significant positive moderate relation with site satisfaction. Service satisfaction ($r(570) = 0.93, p < 0.001$) and site satisfaction ($r(570) = 0.93, p < 0.001$) had a significant highly positive relationship with overall satisfaction, and service

satisfaction ($r(570) = 0.56, p < 0.001$) and site satisfaction ($r(570) = 0.53, p < 0.001$) had a significantly high positive relationship with WOM communication. Finally, WOM communication ($r(570) = 0.59, p < 0.001$) and overall satisfaction had a significant positive correlation, demonstrating support for H7.

Table 8. Descriptive statistics, reliabilities and correlations of the variables.

Variables	M	SD	1	2	3	4	5
1. WOM search	3.05	0.90	-				
2. WOM dissemination	2.67	0.84	0.62 **	-			
3. Service satisfaction	4.06	1.18	0.43 **	0.58 **	-		
4. Site satisfaction	4.18	1.16	0.42 **	0.54 **	0.73 **	-	
5. WOM communication	2.86	0.78	0.90 **	0.89 **	0.56 **	0.53 **	-
6. Overall satisfaction	4.12	1.09	0.46 **	0.61 **	0.93 **	0.93 **	0.59 **

Note. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

5. Discussion

This study provides a general overview of the results of the WOM communication and sporting event satisfaction of the 2017 Taipei Summer Universiade Games. Moreover, we have explored important issues related to social media publicity, which is an important consideration in the development of event marketing planning for sports event marketing departments in a systematic manner. Specifically, organizers of competitions interested in understanding their social media audiences can use the findings from this study to offer greater interactivity and information to sport fans.

Our study contributes to the literature on WOM communication because, in this study, male participants showed significantly higher values than female respondents for WOM dissemination. This finding suggests that men prefer to share or discuss sports events with others. Thus, marketing companies can focus on male WOM marketing when formulating sports marketing strategies.

Accordingly, we argue that different levels of understanding of the event correspond to significant differences in WOM search and WOM dissemination. Meanwhile, different levels of understanding are presented in relation to the service satisfaction and site satisfaction aspects, which also have a significant impact. However, there are no significant differences in WOM communication and sporting event satisfaction for the length of stay on social media. Previous studies have confirmed that WOM could directly influence satisfaction, and the more that is known about the event, the easier it is to build WOM communication [26,27].

As a consequence, there was a significant positive relationship between WOM communication and satisfaction in social media for the 2017 Summer Universiade Games. Moreover, we found that two aspects of satisfaction were clearly related. Therefore, it is necessary to improve the satisfaction of social media marketing promotion to enable the enhancement of audiences' feelings, thereby allowing organizers of competitions to receive a positive evaluation.

6. Implications, Limitations, and Conclusion

Our results have important practical implications: First, it is important to develop a potential audience of social media that enjoys to participate in sports. "People" are the master of the market and play an indispensable role in the power of decision making. Organizers should understand what the target market is that focuses on their industry or products in order to allow them to directly change the strategy and plan according to customers' reaction and improve positive behavior intentions. Secondly, providing a variety of social media marketing, strengthening the relationship with the original audience, and establishing WOM publicity are recommended. Different social media marketing campaigns and promotion, which expand consumers, audiences or fan communities, and increase sharing and message referrals, will help people understand the sports games. Social media create both fast and effective ways to connect with fans and consumers.

Several limitations of this study need to be addressed. The research objective is mainly based on WOM and social media satisfaction as dependent variables to explore the publicity for the 2017 Summer Universiade Games' group media marketing. The previous literature has also probed the motivation of watching or sports participation. In the future, we can perform a comparative analysis before, during and after the game. A research method, structural equation modeling, typical correlation or regression analysis should be adopted to gain a deeper understanding of the promotion of large-scale sports events in social media. Additionally, as different venues that host events are forecast to be important factors that influence how the audience feels, future research could aim to investigate other categories of the population in terms of age, profession or social status.

There was a significant positive relationship between WOM communication and satisfaction via social media in the 2017 Summer Universiade Games. From this, we should maintain sufficient sports marketing and service quality from the organizers in order to maintain good sports events and enhance the audience's feelings. For the recognition and affirmation of the event, the organizers of the competition received a positive evaluation, which will generate WOM and satisfaction in marketing promotion and improve willingness to pay attention to the competition through social media in the future.

Author Contributions: Conceptualization, J.D., M.-Y.C. and Y.-F.W.; Data curation, J.D. and M.-Y.C.; Formal analysis, J.D. and M.-Y.C.; Methodology, J.D. and Y.-F.W.; Software, J.D. and M.-Y.C.; Supervision, M.-Y.C.; Writing—original draft, J.D. and Y.-F.W.; Writing—review and editing, J.D. and Y.-F.W. All authors have read and agreed to the published version of the manuscript.

Funding: This study was supported by the National Science Council, Taiwan (MOST 107-2627-H-003 -001-MY5).

Acknowledgments: We would like to thank Liang-Yu Hsu for the data collection.

Conflicts of Interest: No conflict of interest exists in the submission of this manuscript, and the manuscript is approved by all authors for publication.

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