

Final Report

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ATTRANS
ASIAN TRANSPORTATION RESEARCH SOCIETY

DISSEMINATING AND EXPLORING THE POTENTIAL ROLE OF SOCIAL MEDIA IN PROMOTING ROAD SAFETY AMONG RISK- TAKING YOUNGSTERS AND YOUTHS (PHASE II)

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(PHASE II)**



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List of Abbreviations and Acronyms

HBM	Health Belief Model
SDG	Sustainable Development Goal
SNS	Social Network System
WHO	World Health Organization

CHAPTER I INTRODUCTION

1.1 Rationale

The issue of road safety has been put on the Sustainable Development Goal (SDG) agenda to achieve halve of road deaths and serious injuries be reduced by 2030, as shown in Fig. 1 [1], with the following details.

- ✓ National road safety action plan by 2030
- ✓ Accede to 1 or more core road-safety UN legal instrument
- ✓ New roads with technical standards
- ✓ 75% of existing road travels meeting technical standards
- ✓ 100% of new and used vehicles meeting safety standards
- ✓ 50% of vehicles with reduced speed-related accidents
- ✓ Motorcycle riders with standard helmet ~100%
- ✓ Child safety belt ~100%
- ✓ 50% reduction in alcohol-related accidents
- ✓ No cell phone usage while driving
- ✓ Regulation for professional driver’s rest period
- ✓ Minimize time between road accident and 1st professional emergency care



Fig. 1 New target for a decade of SDG action for road safety.

Global plan on decade of action for road safety (2021-2030) has been put forth by World Health Organization (WHO), as shown in Fig. 2 [2]



Fig. 2 Global plan on decade of action for road safety (2021-2030).

Thailand was ranked the second highest rate of traffic-incident related fatalities in the world by World Health Organization (WHO) in 2021, as shown in Fig. 3 [3], where a majority of these victims are teenagers and young adults between the ages of 15 and 29 years with main cause of accidents and crashes due to human errors, which can be prevented, such as

- (1) Over Speeding
- (2) Drunken Driving
- (3) Distractions to Driver
- (4) Red Light Jumping
- (5) Avoiding Safety Gears like Seat belts and Helmets

During Jan – Jun 2021, road accident statistic in Thailand has highlighted that motorcycle is a majority of fatality (80%) and injury (40%), as shown in Fig. 4 [4]. Further investigation onto root causes of these casualties shows that majority of accidents occur from over speeding on the straight road, as shown in Fig. 5(a) [5], with detailed breakdown by day and time, as shown in Fig. 5(b) [6]. Furthermore, data compiled by ThaiRoads Foundation [7] and Injury Data Collaboration Center [8] also identifies road accident hot spot by geography, month, day and hour, as shown in Fig. 6.

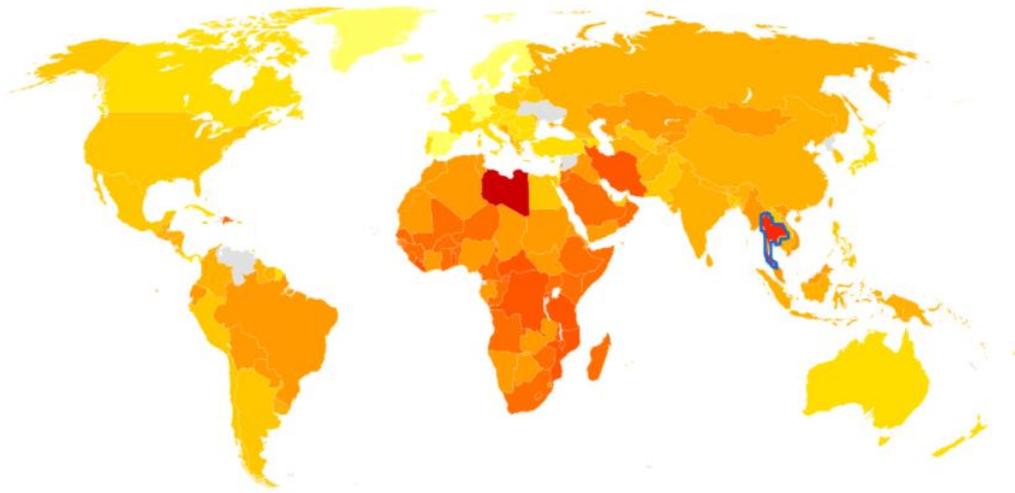


Fig. 3 Thailand (circled in blue) is ranked the second highest traffic-incident related death rates in the world by WHO (2021), after Libya.



Fig. 4 Road accident statistic in Thailand during Jan – Jun 2021

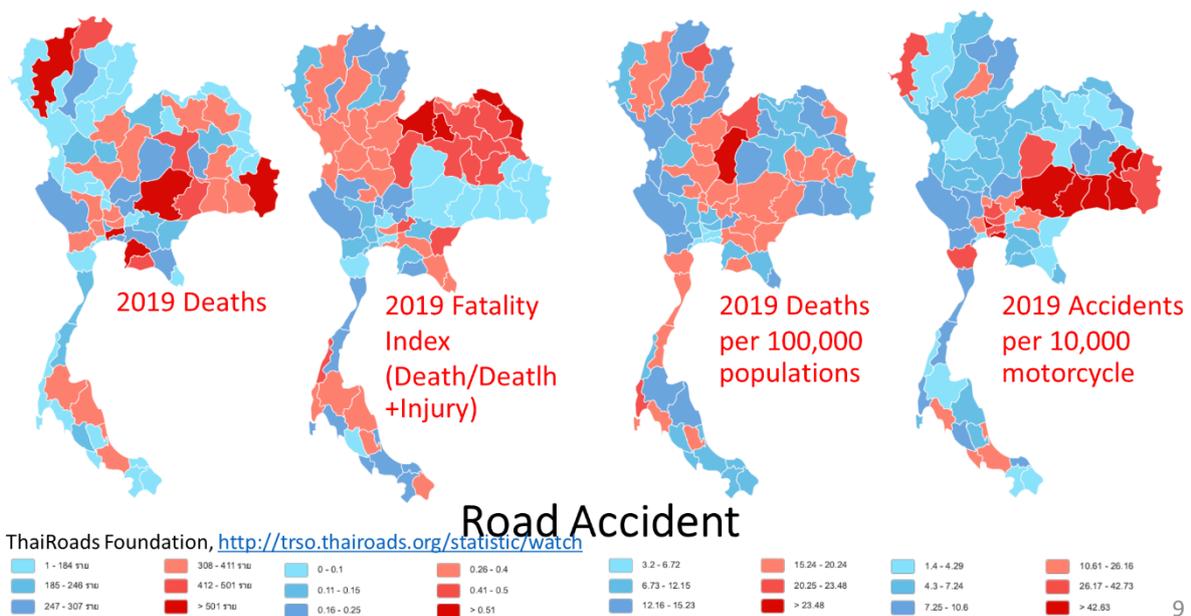


(a)

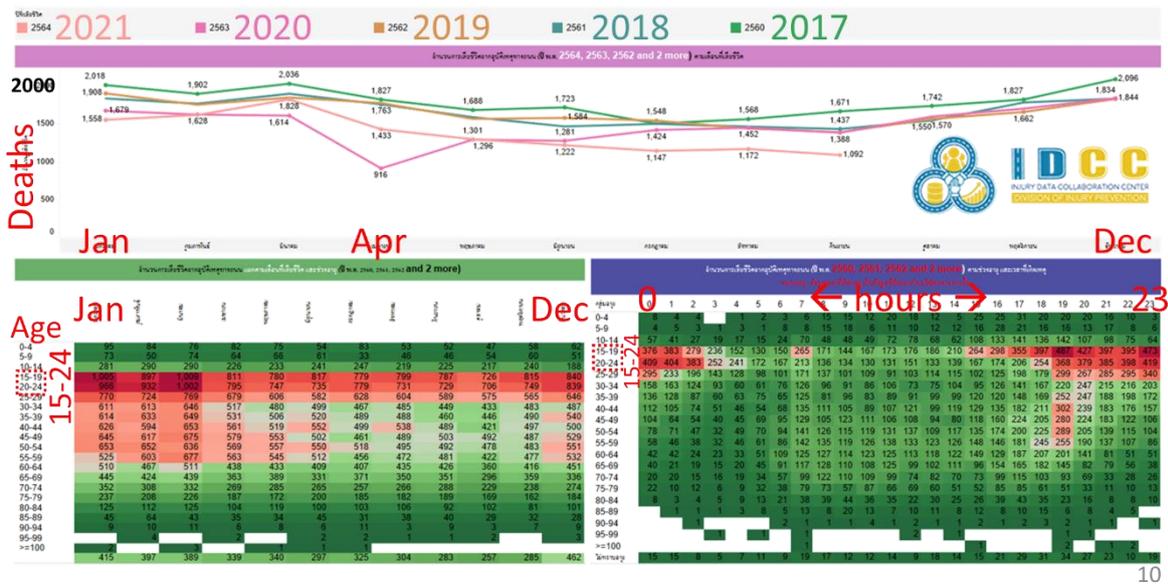


(b)

Fig. 5 (a) Characteristics of road accident in Thailand with (b) detailed



(a)



(b)

Fig. 6 Identification of road accident hotspot by (a) geographic location and (b) time

Most of the road users are quite aware of the general rules and safety measures while using roads but it is only the laxity on part of road users, which cause accidents and crashes. Nowadays, social media is influential and often responsible for behavior of youngsters. Hence, proper social media content could reach out for youngsters' awareness on road safety. Moreover, there has been a number of studies [9, 10, 11, 12, 13, 14, 15, 16] to perform a focalized investigation on revealing the relationship between positive and negative characteristics of social media and the learning attitude of university students for effective education.

1.2 Objectives

The objective of this study is to continue raising awareness on Road Safety and Environment through disseminating and publicizing ATRANS messages to target groups to learn how they react and respond onwards.

1.3 Methodology

Previous study [9] found that

- ✓ Many youngsters aware of risky behavior but still do it due to convenience, carelessness and mild enforcement
 - Need to make content more appealing
 - Engage youngsters to develop own story board
- ✓ Challenge to reach out to youngsters

- Need to compare/assess effectiveness of social media/message (consider SNS: Social Network System)
- Need to strategize content dissemination via various social media platforms
- Possibility of holding open contest
- ✓ Challenge to sustain awareness
 - Need to establish sustainable channel/platform to keep raising awareness

Hence, remaining short video clips from previous study [9], as shown in Fig. 7, will be continued for production in this phase with insightful monitoring of social media platforms, as well as on-site activities, in order to effectively reach out to the youth.

Short video clips



Ep.	Title	Driver's condition	Vehicle & equipment	Driving habit	Pedestrian
1	Pre-trip inspections: 5 Things to do before leaving	✓	✓		
2	Crosswalk in Thailand			✓	✓
3	Safely Fast, Smart Ride			✓	
4	Safely Walk on Different Roads				△
5	Driving (MC) out of Soi (alley)			•	
6	Life insurance	•			
7	Fine & traffic offense.			•	

✓ On air △ In production • planned

Fig. 7 Short video clips plan

As skills for safe driving identified as top prevention against road fatalities, this study aims to continue raising road safety awareness and providing knowledge/technical skills of safe motorcycle driving to the risk-taking youngsters and youth with specific objectives as follows:

- ✓ To elaborate risky perceptions of the risk-taking youngsters and youth motorcycle drivers
- ✓ To continue generating ATRANS-original road safety knowledgeable messages or simulated risk/hazardous situations
- ✓ To continue disseminating and publicizing via various social media channels along with other practical activities
- ✓ To conceptualize feedback leading to research and policy implications

CHAPTER 2 RESEARCH PLAN

2.1 Project Schedule

Table 1 shows the project planning schedule with project expenditure shown in Table 2. All project members are scheduled to meet regularly to discuss the technical results performed by project research assistant, and directions of the project. Occasionally, the progress report will be presented to the advisors to further seek guidelines and comments of the results and future direction.

Table 1: Project planning schedule

Activities	2022									2023		
	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
Literature Review on Effectively Utilizing Social Media to Promote Road Safety Education												
Data collection & analysis												
Focus group meeting, create media content design & development												
Social media campaign activity to Promote Road Safety Education												
Inception report submission												
Interim report presentation												
Interim report Submission												
Final report presentation												
Final report Submission												

2.2 Project Expenditure

Table 2 shows the breakdown of the project expenditure.

Table 2: Project expenditure

No.	Item	Unit cost	Number of units	Subtotal
1	Project leader	3,000	12	36,000
2	2 Research assistants (200 THB/hr x 5 hrs/day x 10 days/month) for 12 months	10,000	24	240,000
3	Expenses for project meeting	5,000	6	30,000
4	Travel expenses, interview, collect data and analysis	6,000	5	30,000
5	Workshop and campaign Activities	30,000	5	150,000

No.	Item	Unit cost	Number of units	Subtotal
6	Secretariat's participation portion	10,000	1	10,000
7	Publishing proportion of the report book	50,000	1	50,000
Total				546,000

CHAPTER 3 RESULTS & DISCUSSION

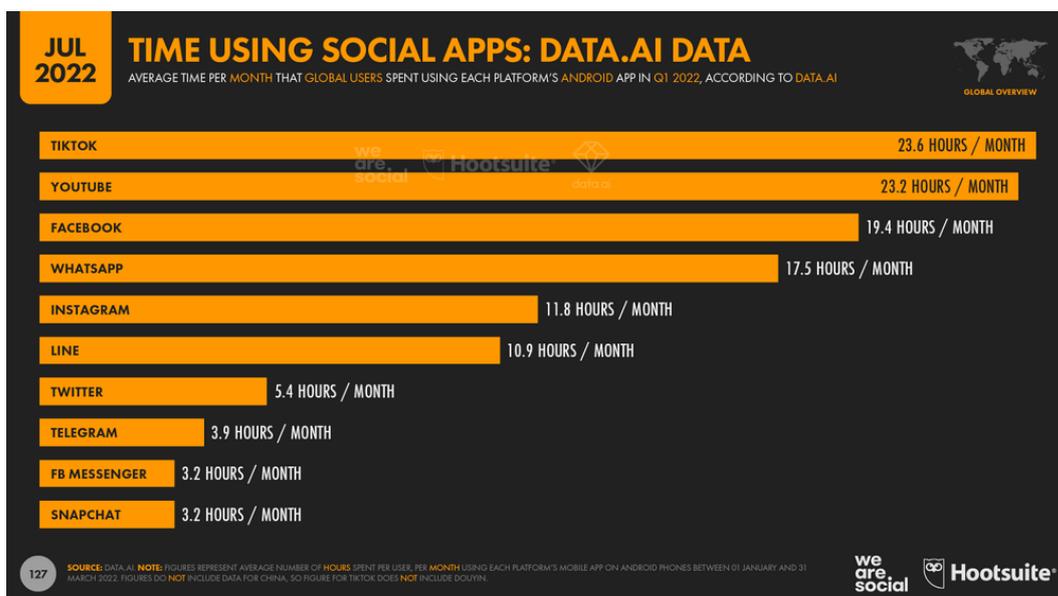
3.1 Reviews of Social Media Impact

Short clips are proved effective in gaining attention of people by reaching out to majority of the internet users. In a final project of the 9th Training Course for Young Leadership in Democracy, short clip was chosen among social media to communicate importance of being responsible citizen to gen Z, as shown in Fig. 8. This was based on a suggestion from a Thai influencer, VRZO [17], where the most popular short video gained 40,000 views.

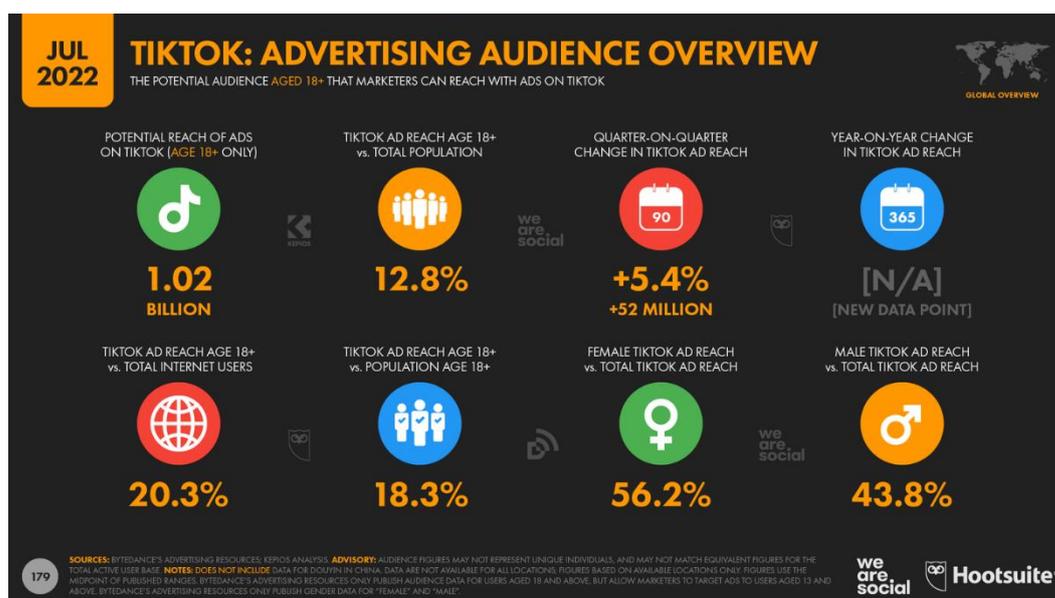


Fig. 8 Short video gaining more popularity

Furthermore, according to the Digital 2022: July Global Statshot Report [18], Tiktok is one of the most preferred social apps as a source of information and for internet users' entertainment, as shown in Fig. 9. Global users spend the longest time on Tiktok user with 23.6 hours/months or 95 mins a day. Over 1.02 billion potential audience reach Advertisements on Tiktok. Internet users (78.6%) used Tiktok to look for funny and entertaining contents, while Facebook is for messaging purposes (71.3%), and Instagram is for posting and sharing photos (70.2%).



(a)



(b)

Fig. 9 (a) Effectiveness of various social media platform highlighting (b) TikTok statistics

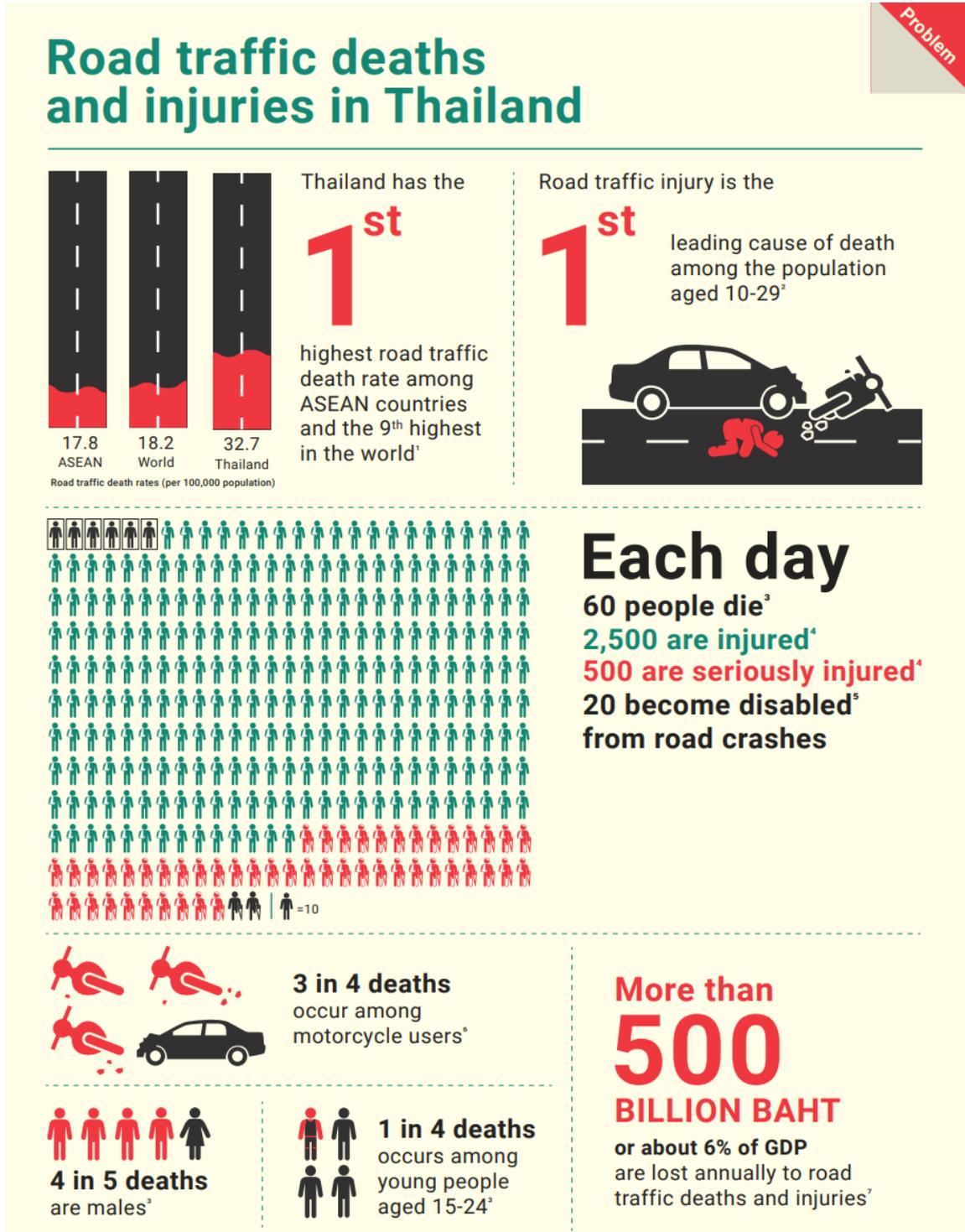
According to Health Belief Model (HBM) developed by Rosenstock, individuals' preventive behavior is affected by their belief in being at risk, seriousness of risk, existence of a way to reduce incidence or severity, and higher costs vs benefits of action. There is a possibility that young generation have incorrect belief in risk related to road usage. Under assumption that a campaign to correct road risk perception and raise awareness of road safety through social media could help reach out to the majority of young generation. Risk-taking behavior of young generation may be altered through the use of Tiktok clip as the tool to reach out to target students in a technical school. Students are asked to develop Tiktok clips to raise awareness in importance of safe driving of motorcycles. The winning teams will receive prizes. Note that Tiktok clips are the most popular among young generation and majority of road accidents and accident casualties are associated to motorcycles, where technical school students use motorcycles as the means to commute to the school. Thus, the project aims to engage the students in the stage of clip production.

Additional road accident statistic, as shown in Fig. 10(a) [19], highlights that

- ✓ Thailand has the 1st highest road traffic death rath among ASEAN countries and the 9th highest in the world (32.7 per 100,000 population)
- ✓ Road traffic injury is the leading cause of death among population with the age of 10-29
- ✓ For each day, 60 people die, 2,500 are injured, 500 are seriously injured, and 20 become disabled from road crashes.
- ✓ 3 in 4 deaths occur among motorcycle users

Analytic report on 2018 road accident statistic shows that there are a total of 99,908 road accidents equivalent to 8,326 accident per month, which increased from the fiscal year of 2017

by 26.18% The most frequent road accidents are from motorcycle (37,859 times), passenger car (23,804 times), and truck (15,584 times). During 10-13 April 2021, motorcycle is ranked as the highest death rate (86.16%), truck (6.39%), and passenger car (2.99%), as shown in Fig. 10(b). [20]



(a)

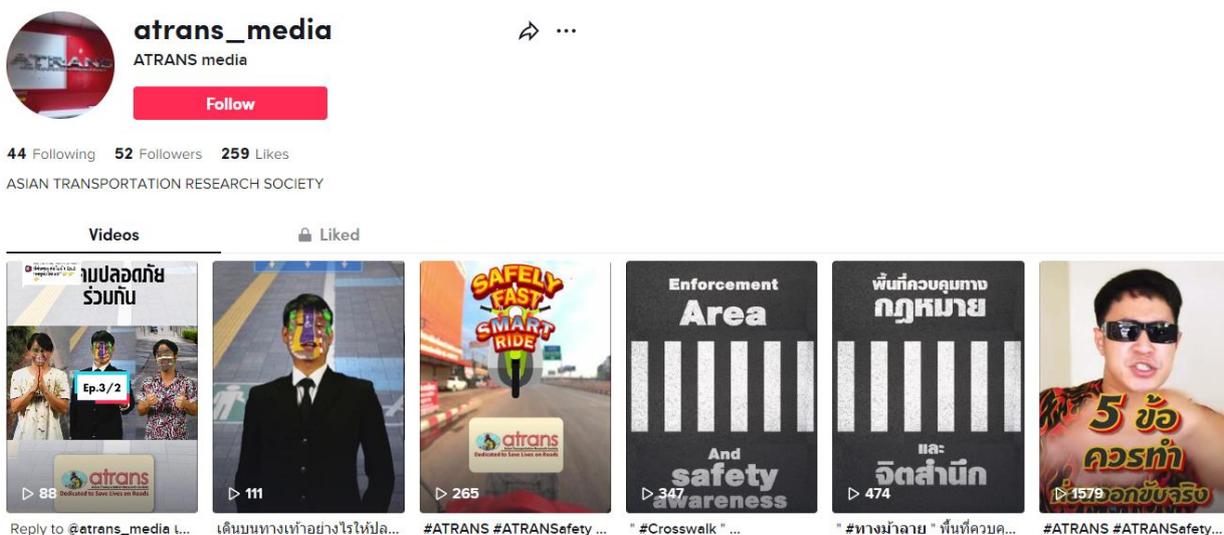


(b)

Fig. 10 (a) Statistic of road traffic deaths and injuries in Thailand with (b) a focus on Thai traditional new year during 10-13 April 2021

3.2 ATRANS Short Clips

All short clips by ATRANS were originally uploaded to TikTok platform [21], as shown in Fig. 11(a), but with limited reach. Hence, all clips were also uploaded to Facebook platform [22] to further reach. Also, on-site workshop was conducted as a mean to further reach out to targeted group in the next section.



(a)



(b)

Fig. 11 ATRANS short clips on (a) TikTok and (b) Facebook

3.3 Road Safety Workshop

Road safety workshop was conducted at Suphan Buri Technical School on Friday 10 June 2022, as shown in Fig. 12, where interactive activities were planned to engage students, as well as disseminate ATRANS original clips to get feedback. Three short videos were disseminated to students with encouragement to participate via quizzes based on the video content.

- ✓ Clip 1: Pre-trip inspections: 5 Things to do before leaving
- ✓ Clip 2: Crosswalk in Thailand
- ✓ Clip 3: Safely Fast Smart Ride

Built upon the dissemination on road safety, the students were requested to provide ideas on three topics to demonstrate their road safety awareness and expectation in the following 3 topics.

- ✓ Topics 1: Current road conditions
- ✓ Topics 2: Expected road conditions
- ✓ Topics 3: How social media can help raise awareness of road safety

Furthermore, content creation contest on road safety was arranged with prizes for short video with 30 seconds to 1.30 minutes length focusing on three themes on road safety: 100% driving license, legal customized vehicles, risky driving behavior to be avoided. However, only a few groups have created the clips due to lack of clip editing tool and prior communication.



(a)

เวลา	รายละเอียด
12.00 – 12.30	รับประทานอาหารกลางวัน (จัดเตรียมให้)
12.30 – 12.45	ลงทะเบียน
12.45 – 13.00	ตอบแบบสอบถามก่อนกิจกรรม
13.00 – 13.10	ท่านประธานกล่าวต้อนรับ (พร้อมแนะนำกิจกรรมต่างๆ ของวิทยาลัยฯ ที่ร่วมกับเอเทรอนส์ในปีที่ผ่านมา)
13.10 – 13.20	กล่าวแนะนำกิจกรรม "Safety on Campus" ภายใต้โครงการเอเทรอนส์ "สื่อมีอิทธิพลกับเยาวชนผู้ใช้รถใช้ถนน (Road Safety on Social Media)"
13.20 – 13.40	ชมวิดีโอ คลิป Tik Tok และร่วมตอบคำถามผ่าน Kahoot! เพื่อให้ความรู้สร้างความเข้าใจ สื่อมีอิทธิพลอย่างไรกับเยาวชนผู้ใช้รถใช้ถนน
13.40 – 14.40	ประกวดกิจกรรมสร้างคอนเทนต์ Road Safety ผ่าน Tik Tok ชิงเงินรางวัลมูลค่ารวม 10,000 บาท รางวัลที่ 1 = 5,000 บาท รางวัลที่ 2 = 3,000 บาท รางวัลที่ 3 = 2,000 บาท หัวข้อใหญ่ สร้างวินัยจราจรให้ไม่ย้อนแย้งพฤติกรรมเสี่ยง 1. ใบขับขี่ 100% 2. แต่งรถอย่างไรให้เท่และถูกกฎหมาย (เปลี่ยนรถแรงเป็นรถซิ่ง) 3. พฤติกรรมแบบไหนที่เรียกว่าเสี่ยงและควรหลีกเลี่ยง
14.40 – 15.00	บรรยายให้ความรู้ โดยอาจารย์ณรงค์ ชลคุป ENTEC กระทรวงการอุดมศึกษา วิทยาศาสตร์ วิจัยและนวัตกรรม
15.00 – 15.20	บรรยายให้ความรู้ด้านเทคนิคความปลอดภัย (เกี่ยวกับยานยนต์ที่ประเทศญี่ปุ่น) โดยอาจารย์เตือนใจ พูกูตะ ATRANS
15.20 – 15.30	เกมส์ Kahoot - จราจรสอนฉันให้ปลอดภัย
15.30 -15.50	ตอบแบบสอบถามหลังกิจกรรม
15.50 – 16.00	กล่าวขอบคุณและปิดงาน

(b)



(c)

Clips by technical school students



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(d)

Fig. 12 (a) Road safety workshop at Suphan Buri Technical School with (b) agenda and (c) activities to engage students. However, (d) only a few groups submitted original short clips

Quizzes with 10 multiple choice questions were posted to the students after three Tiktok clips were played to get interaction with students.

- ✓ Clip 1: Pre-trip inspections: 5 Things to do before leaving
- ✓ Clip 2: Crosswalk in Thailand
- ✓ Clip 3: Safely Fast Smart Ride

Subsequently, quizzes performance of students from Suphan Buri Technical School showed that explanations after watching the clips can help students understand.

- ✓ Quiz 1: 159 participants, correct answers: 35.04%, wrong answers: 64.96%
- ✓ Quiz 2: 152 participants, correct answers: 59.35%, wrong answers: 40.65%
- ✓ Quiz 3: 104 participants, correct answers: 50.76%, wrong answers: 49.24%

The combination of Tiktok clips and quiz can help gain access to young generation and improve understanding on road safety to some extent. However, creators need to create entertaining content and catch current interest of internet users, for example, viral activities. Students who paid attention to the clips could correctly answer the quizzes and enjoyed them.

Analytic results from post-it notes activity showed

- ✓ 109 individual ideas for current road conditions:
 - Technical students faced several challenges on road conditions as they mentioned that holes on a road surface (90) have bothered them when commuting, especially when there is water-logged (10).
 - Many routes are under-maintenance. Traffic signs were faded (5) and heavy truck loads caused cracks and waves (26) as well as rugged road surface (22).
- ✓ 111 individual ideas for expected road conditions:
 - Their expectations on roads were relevant to the challenges they are facing. The students wanted roads to be flat (53) with sufficient traffic light (15) and clear signs (11).
 - The roads should be bigger (3) and straight (7) with more lanes (2). The holes (53) should be repaired to avoid water-logged (7). Some suggested crosswalk (2), flyover (2), and underground cable (1).
- ✓ 108 individual ideas for how social media can help raise awareness of road safety:
 - The students gave ideas on different ways that social media can play a role in road safety, including campaign (3), short clips (3) on obeying traffic rules and regulations (41). Especially, driving with consciousness, operational traffic light systems (7) in local areas are among interested topics.
 - The channels were also suggested: Facebook (5), Twitter (1), Instagram (1), and Tiktok (1). The students also mentioned social participation, for example sharing post (6) is important for reaching out to other internet users.

Findings from on-site workshop activities are as follows:

- ✓ Findings
 - Tiktok (short video clips) help reach out to young generation.

- Students enjoyed entertaining video content. Therefore, short video clip and web-based quiz could be effective means for communicating importance of road safety.
- Road safety awareness of technical school students improved, and some of them were able to produce similar awareness raising video clips.
- ✓ **Challenges**
 - Student's participation level decreases over time.
 - Prizes are not sufficient to get involvement of students in content creation contest.
 - The objective of reaching out to the majority of target groups (youth and youngsters) was not reached.
- ✓ **Follow-up activities**
 - Facebook advertisements and analysis of reaches to design appropriate usage of video clips to reach out to the target groups.
 - Interview of influencers and lay people to get feedback to improve video clips.

3.4 Analytical Assessment of Short Clips

As a follow up activity to on-site workshop, facebook advertisements were used to promote the following clips, as shown in Fig. 13.

- ✓ **Pre-trip inspections**
- ✓ **Crosswalk in Thailand**
- ✓ **Safely Fast, Smart Ride**
- ✓ **Safely Walk on Different Roads (Ep. 1)**
- ✓ **Safely Walk on Different Roads (Ep. 2)**

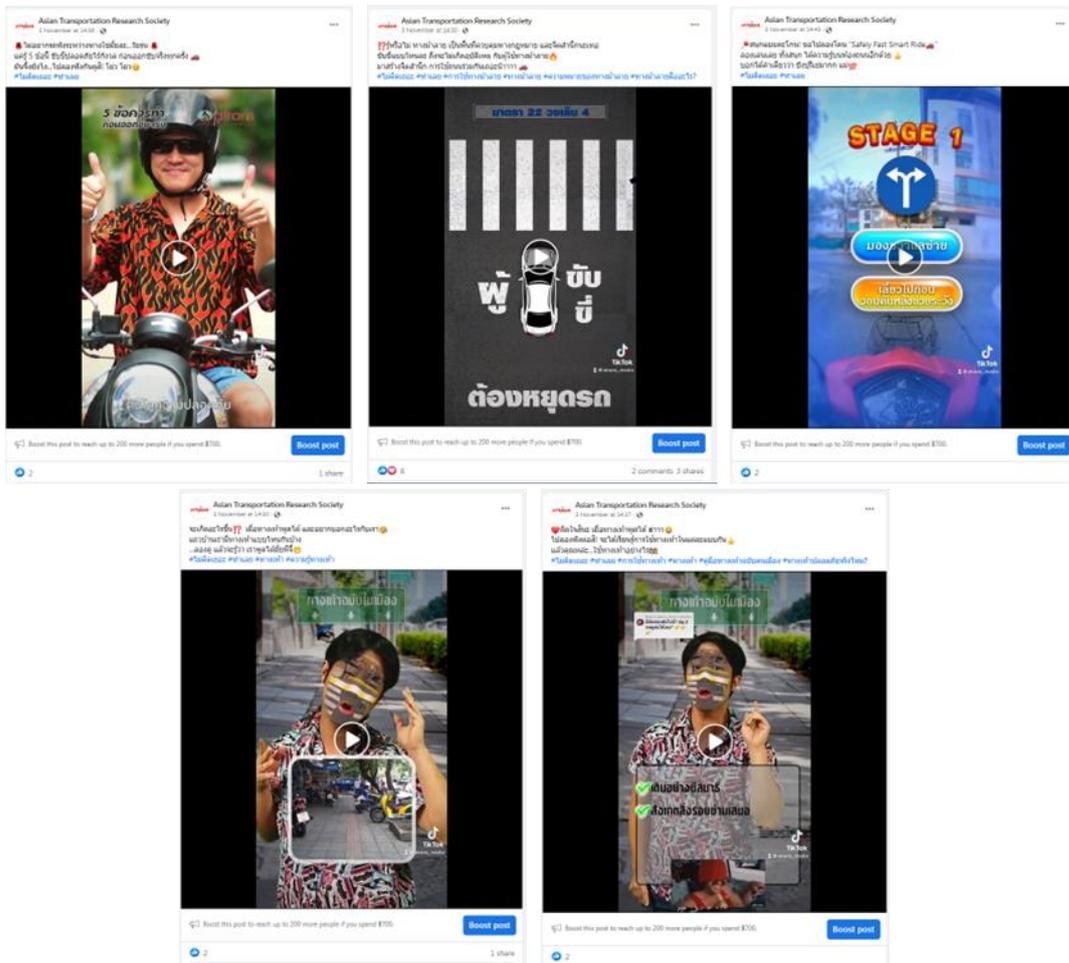


Fig. 13 ATRANS clips subjected Facebook advertisement analysis

Prior to paid Facebook advertisement, organic reach has limited exposure with limited reactions, comments, and shares. Crosswalk clip had the most Like and had engagements from audiences due to recent crosswalk accident. Paid Facebook advertisements with dark post was conducted with the following groups by age range and location.

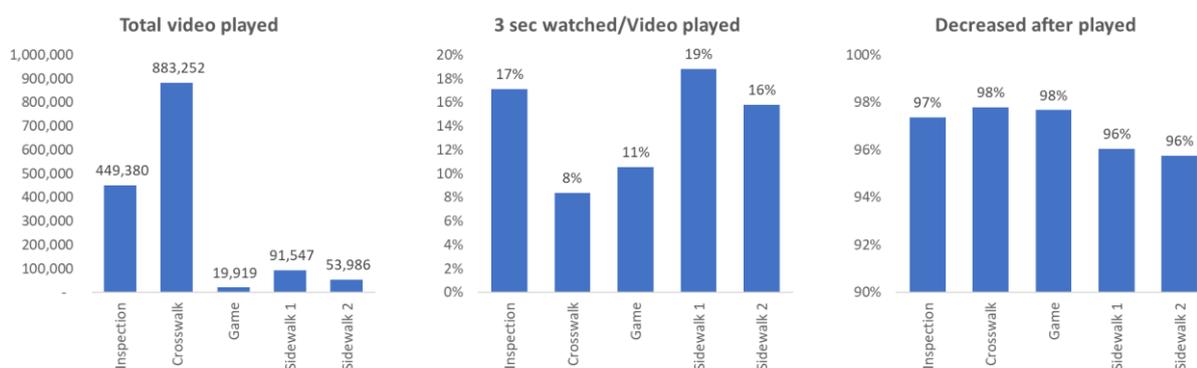
- ✓ Audience with the age range between 13-17 living in Bangkok
- ✓ Audience with the age range between 18-22 living in Bangkok
- ✓ Audience with the age range between 13-17 living in Suphan Buri
- ✓ Audiences with the age range between 18-22 living in Suphan Buri

Findings of ATRANS clips being watched via paid Facebook advertisement are as follows, as shown in Fig. 14(a).

- ✓ All clips received more engagements (Like, Share, Comment) than those published organically for both age ranges.
- ✓ All clips in Suphan Buri received fewer engagements than those published to the Bangkok audience
- ✓ Crosswalk clip received the most engagements from audiences

From Fig. 14(b), video retention rate for Bangkok (age range 13-17) is different from all other age ranges showing effectiveness of short clip in this geography and age group. From the analysis of first 10s:

- ✓ As crosswalk includes scientific information, only people who expect knowledge gain will continue watching.
- ✓ Gimmick (painted face and rap) attracted audience in the beginning, especially those with lower age.
- ✓ Most videos are still not successful as more than 50% of the audience disappeared in first 10s.
- ✓ Recommendation: We can start with gimmick to attract the audience, and later introduce scientific information.

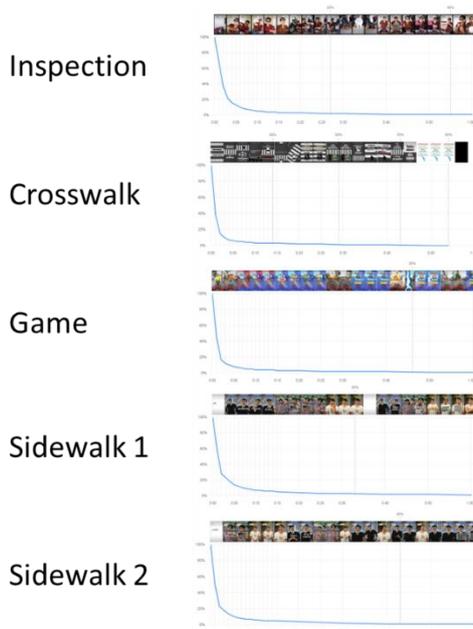


Crosswalk received highest views as the clip is shorter (FB algorithm).

- Sidewalk 1, inspection, and Sidewalk 2 are the clips got the audience attentions within 3 seconds.
- Painted faces and rap style could draw attentions.

- The numbers of audience decreased a lot at the 15 seconds.
- Most audience were not interested in any content in any clips.

(a)



(b)

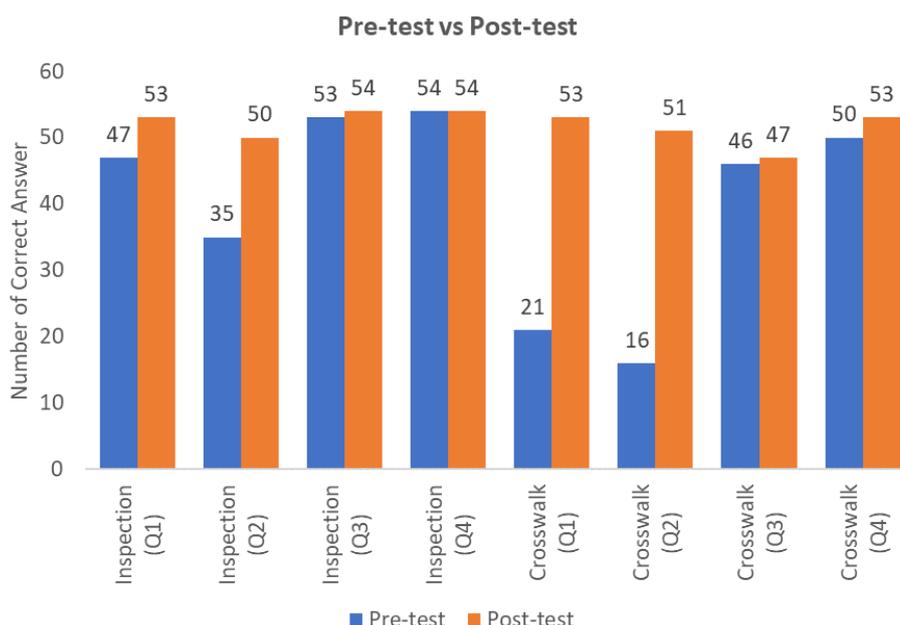
Fig. 14 Analytical results of ATRANS clips: (a) statistics on video played and (b) video retention

Further analysis was conducted on feedback from 2 influencers: a very well-known producer in media business and famous YouTuber on motorcycle racing education. Feedback is shown in Table 3 for future improvement of ATRANS clips.

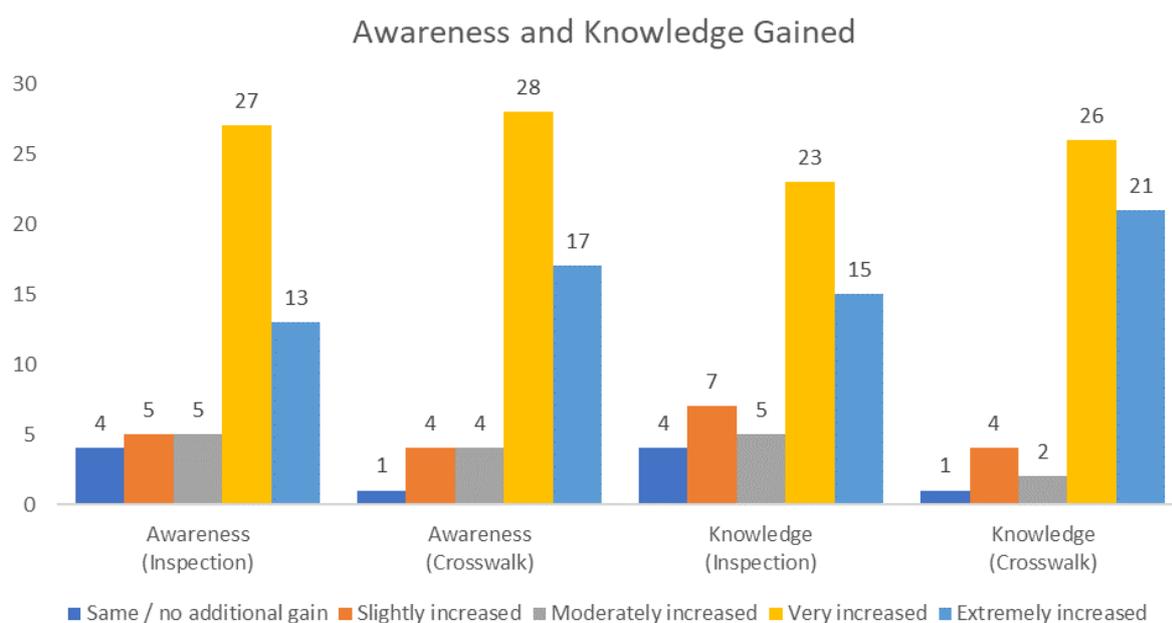
Table 3: Worldwide airline industry economic

Clips	Well-known producer	YouTuber
Inspection	Background music should not interrupt the voice, and it should be clear whether they are tips for cars or motorcycles.	Some messages do not appear long enough. The modern rap style was good, but the tempo should be slower. The checklist should be updated to match the actual needs.
Game	This would be interesting for audience with lower age range	The idea is good, but the graphic is more for a kid. It needs to be excited at first and you can insert knowledge later.
Crosswalk	The best among the clips. However, the pictures change too quickly.	The content is concise and useful. Voices would be better than texts.
Sidewalk	Presenters obscure the real sidewalks. The stories are too long.	The concept and presentation was good, though it was difficult to hear the vocals, and there are too much content in a clip. Subtitles are encouraged for all clips.

In addition, semi-structured interview on 31 male and 23 female was conducted to assess the effectiveness of short clips in answering short quizzes. As shown in Fig. 15(a), post-test results are better than pre-test, and most respondents know about inspection but not about crosswalk law. Crosswalk (Q1) is “How many meters motorcyclists should not overtake a moving vehicle?”; whereas, Crosswalk (Q2) is “How many meters away motorcyclists must stop at marked crosswalk?”. Some are common questions that everyone should know. Fig. 15(b) shows that both clips have similar impact on the respondents’ awareness level. Crosswalk clip has a bit larger impact on the respondents’ knowledge



(a)



(b)

Fig. 15 Results from semi-structure interview: (a) effectiveness of short clips and (b) awareness of knowledge gained

3.5 Conclusion

From both on-site and on-line assessments of short clips effectiveness, the following conclusions can be drawn.

- ✓ On-site activities can engage limited number of youths and youngsters, though then engagement is more intense.
- ✓ Short video clips help reach out to a large pool of young generation.

- ✓ **Video clips need a good hook to attract audience's attention, and wisely include the scientific information afterwards.**
- ✓ **Paid Facebook advertisements can be very effective in reaching out to young generation if designed appropriately.**
- ✓ **Based on the semi-structured interviews, short clips can effectively increase the awareness and the knowledge of the target audience.**
- ✓ **Recommendations for future work**
- ✓ **Based on finding from analytical results of Facebook statistics and feedback obtained from influencers, more attractive and effective video clips should be designed and disseminated on ATRANS' social media channels.**

Based on finding from analytical results of Facebook statistics and feedback obtained from influencers, more attractive and effective video clips should be designed and disseminated on ATRANS' social media channels.

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