Investigation of Source of Distraction among the intrastate bus driver: Focus Group Interview

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Abstract. Driver distraction have found as one of the main cause of accident all around the world. The driver distraction represents a significant problem to the personal transportation as well as the public transportation sector. However, factors of distraction especially in the context of public transport still has not widely explored. Thus, the aim of this research is to investigate the sources of distraction among the intrastate bus driver. This study will undergo focus group interview in order to achieve the objective of this research. 16 participants which are 8 participants from expert management and 8 participants from expert practitioner are involved in the focus group interview. From this research, there are 26 sources of distraction found in the focus group interview that overlap between both focus group. The result from this research can be used as guideline for improvement for the management of the intrastate bus services company and also for the future researcher as an aid to design the solution to overcome the sources of distraction.

1. Introduction
Distracted driving behaviour has been cited as one of the most dangerous error that can a driver make while driving a vehicle [1]. Many researchers had agreed that the driver distraction become the main cause of traffic accident all around the world [2]. Through the analysis from the United State Department of Transportation, it is found that the significant cause of total motor vehicle crashes is the driver distraction [3]. Besides, the Fatality Analysis Reporting System (FARS) in 2008, the driver distraction was identified as the factor of crashed at about 16% of all fatal crashes. Driver distraction also have been estimated at about 80% as the factors of traffic crashes which directly or indirectly contributed by the driver [4]. The report from The National Highway Traffic Safety Administration (NHTSA) state that the driver distraction contributes approximately 424,000 injuries which is 18% of total injury crashes and 3,154 crashes related with fatalities which at about 10% of all fatal crashes [5].
One of the main public transport chosen by the people in this country is the intrastate bus services. There are various factors of distraction of an intrastate bus driver which will have impact to the driver such as the number of hours driven, gender, experience and age [6]. An intrastate bus driver needs to drive the intrastate bus along a route which located in a high density-populated area, they will be facing a great number of external source of distraction as there will be more passengers riding the bus which resulting more frequent stops. Furthermore, there are over that 70% of distraction to be voluntary actions such as the use of mobile phone, adjusting the in-vehicle system as well as interacting with the passenger while driving the vehicle. In particular, only a few researches that had been discussed one the distraction of a bus driver and most of them were focused on the usage of mobile phone by the bus drivers [7]. Therefore, this study will identify the source of distraction among the intrastate bus driver.

2. Literature Review

Source of distraction are categorizing into two main categorizes which are internal and external distraction. Internal Distraction is referring to any distraction occur from the inside of the vehicle. It will make the driver’s attention more to the activities inside the vehicle instead of focusing for the safety driving. The reaction of the driver for hazardous situation can reduce when the driver glance or the driver’s attention more inside the vehicle [8]. Besides, the moments when the driver return their eyes from the glancing inside the vehicle to the roadway also will affect the reaction of the driver to the hazardous situation [9]. The glance of the driver away from the roadway must be less than two seconds in order to performing a safety driving procedure [9]. The longer the time for the drivers’ eye off the road, the greater the risk of crash to the drivers [10]. Therefore, while undergo the task as intrastate bus driver, there have many factors inside the vehicle that are believed can be as distraction to the driver.

Firstly, technology as the factor of distraction. Technology is something that can always help human but sometimes technologies itself can be as distraction to the human. One of the common technology equipment own by the intrastate bus driver is mobile phone. The usage of mobile phone while driving can distract the intrastate bus driver and increase the risk of involving in accident [11]. In United States, mobile phone distraction resulted in 5% of injury and 18% of fatal crashed based on the police crash report [12]. The usage of mobile phone reported that it can reduce the awareness of the driver to the safety driving, increase the behaviour that is not safe, and increase the risk of accident for the pedestrian [13]. Besides, the handheld text message sending and receiving found that it required high mental demand, more frequent and longer glances away from the roadside which it can degraded the performance of the driver [14]. The driver sensitivity toward the upcoming events and associated perception and awareness of the road environment can be degraded when the driver simultaneously using hands-free mobile phone while driving [7]. The safety of the driver will be decreasing when they are texting while driving and having a negative impact on traffic operation [15]. The entertainment system in the vehicle also can give greatest negative impact on the driver performance [16].

Some of the intrastate bus driver in this country need to issue ticket to the passenger at the bus stop before the passenger enter the bus. It increases the workload of the intrastate bus driver and issuing ticket by the bus driver is classified as high risk as it is one of the distracting activities based on the previous research [17]. Besides, passenger also can be the source of distraction to the driver. Based on previous research, at about 10.9% of the distraction comes from the other occupants in the vehicles [18]. Besides, it is reported that talking to the passenger were found as one of the source of distraction towards the driver while driving the vehicles [19]. Interaction to the passenger also found as the source of distraction to the driver [20]. The other source of distraction found in the vehicle is adjusting the setting in the vehicle [21]. Eating and drinking inside the vehicle while driving also can be consider as
one of the source of distraction to the driver [22]. So, it can be said that while the driver is undergoing
the driving task, doing the secondary task can distract them [21]. Other than that, the personal of the
driver also can be source of distraction to the driver for example health of the driver. Source of
distraction that referring to the personal of the driver based on the salmon 2010 are fatigue, sickness
and medication [23].

Distraction can occur from the activities not only inside the vehicle, also can happened from the
outside of the intrastate bus driver [24]. The weather can distract the intrastate bus driver especially
during the bright sunlight and heavy rain [23]. Besides, the infrastructure along the road need to be
focus as it related with the driver distraction. One of the example of infrastructure is roadside
advertisement and it is found that roadside advertisement can distract the intrastate bus driver [25].
Salmon 2011 also said that of the source of distraction related with the infrastructure is roadside
advertising [23]. Lastly, the condition of the road can become one of the source of distraction to the
driver.

3. Methodology

The collection data process for this research is focus group interview. The focus group interview is
focusing to the expert which related with the research area. The main objective of this focus group
interviews is to identify the source of distraction among the intrastate bus driver. For this research,
there will be two focus group that which are participated by two group of experts which are
management and practitioner. The management group is a group of experts who involve in the
management team from the prominent intrastate bus company. Most of them are managers, depot
managers, executive and also trainers from the bus training department. Besides, the practitioner’s
focus group is a group expertise which are the intrastate bus driver who experienced driving the
intrastate bus for more than ten thousand hours or equal to 5 years’ experience. The participant for the
practitioner’s focus group are chosen randomly by the prominent intrastate bus company in which the
minimum required is their involvement driving the bus at least 5 years’ experience. For this focus
group interview, purposive sampling is used. Purposive sampling can be described as a selection of a
group of individuals which have a basic basis information related with the research area. All the
participants are chosen based on their expertise whether from the management or practitioner of an
intrastate bus.

For this focus group interview, the participant for both group will give their opinion about the sources
of distraction that distract the intrastate bus driver. The similar interview protocol is prepared for both
group in order to ensure the reliability and consistency for both focus group interview. The participants are needed to brainstorm every source that distract the intrastate bus driver weather from
inside and outside the intrastate bus. Two research assistants will be in each focus group interview
who will be as moderator and another one will setup the recording equipment and also will write all
the main point from the interview.

The focus group for both group are running simultaneously and are recorded audio and video for
analysis purpose with permission from the participant. All the participants are informed about the
recording and sign the consent letter before any discussion starts. Both group of participants were
assisted by the interviewer about the general of this research all about before splitting into two
different discussion room based on their expertise. At the end of this focus group interview, there will
be a recorded audio and video and also a list of written of the main point about the sources that distract
the intrastate bus driver from each group of the focus group interview. The recorded audio and video is
transcribed into a written form and undergo content analysis. All the participants are coded during this
focus group interview to ensure the confidentially of the information from the participants.
For data analysis, the interviews were transcribed into written form. The data from the interviews that is already transcribed is analyzing by using content analysis techniques. Content analysis techniques can be defining as a technique that is abstracting and also categorizing information from the text. This technique is one of the research tool that are used to identify the information or certain point within a set of texts.

The analysis starts with two researchers who involve in this research read all the transcript several times to get familiar and understand the overall content of the interview data. Then, both researchers get a sense of the similar idea and noted the ideas into a preliminary codebook. This preliminary coding is done as to break the entire transcript into several meaningful segments. The two researchers then got together and compare their codebook as they create the preliminary codebook independently. To improve the reliability, both researchers review both their preliminary codebook and reach a consensus on creating a new codebook which containing the matched themes from their preliminary codebook. Several meetings between them which conducting the data rearrangement and mind mapping in order to create the most suitable themes from the matched themes of their preliminary codebook. In the analysis, there are 26 activities that related to the distraction among the intrastate bus driver and overlap between both group of experts.

4. Result and Discussion

This research is to investigate the source of distraction among the intrastate bus driver via the focus group interview. The participants of the interview are the managers, executive, trainers and experienced bus driver who already drove the bus at least 5 years’ experience. The participants are divided into 2 group based on their expertise which are expert managements and expert practitioner. Both group of interviews are recorded audio and video for further analysis. After being transcribe and analysis, there are 26 sources of distraction that are overlap between each group.

4.1. Advertising video on the screen in the bus

This is the new source found as the source of distraction among the intrastate bus driver. Based on the respondent EM 7, he said that the distraction comes from the voice and sound from the advertising video that can distract the bus driver. Respondent EP 7 also said that sound from the video can distract the bus driver.

4.2. Technology devices for recording

The technology devices that being used for recording such as CCTV in the bus can distract the bus driver. Respondent EM 1 said that the CCTV in the bus is beneficial to record any accident happening in the bus but the driver tends to scared when they know that the CCTV is recording everything in the bus. The driver will be more cautious and always look at the CCTV. This source of distraction agreed by all other respondent in the Expert Management group. Based on the findings from the expert practitioner, the respondent EP 4 said that one the source of distraction is CCTV in the bus the respondent said that when there is CCTV recording all the activities, it is very helpful as it will make working as no one will stop working.

4.3. Technology equipment

This type of source of distraction include the uses of mobile phone, personal gadget and entertainment devices while driving the bus. EM 8 said that, the main source of distraction is the usage of the mobile phone while driving the bus. In addition, EM 6 said that the distraction involves the usage of communication device, power bank and personal gadget. Respondent EP 1 in expert practitioner said
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that, the usage of application such as WhatsApp and Instagram while driving can distract the bus driver.

4.4. Traffic congestion

Traffic congestion found as one of source of distraction to the intrastate bus driver. EM 4 said that, traffic congestion is one of source of distraction. Besides, EM 1 said that because of the traffic congestion, the intrastate bus driver might miss the bus stop especially during the peak hour. In addition, because of the traffic congestion, the trip sometimes can be up to 2-3 hours longer than usual duration which can lead to other problem which can distract the intrastate bus driver. EP 7 and EP 1 said that, when there are lots of other road users on the road which make the traffic congested, it will distract the intrastate bus driver.

4.5. Others road user

Other road user can be one of the source of distraction to the intrastate bus driver. EM 1 said that the other vehicles sometimes block the bus to reach the bus stop which make the intrastate bus driver stop the bus outside the specific point to drop and pick up the passenger. EP 7 also said that other road user can distract the intrastate bus driver. Besides, EP 1 said that the other road user will make the traffic slow as they are using application such as WhatsApp and Instagram while driving.

4.6. Identifying bus stop

Identifying bus stop can distract the bus driver. This situation happened based on a few situations. EM 1 said that the intrastate bus driver got distract to identify the bus stop when the passenger pressing bell repeatedly to stop although the distance to reach the next bus stop still 1 km away. EM 1 said that normally the next bus stop is about 250m, but when this situation occurs, the driver got distract when the driver stops the bus at the next bus stop, the passengers are still in the bus as their targeted bus stop is the next bus stop. Meanwhile based on EP 8 the intrastate bus driver need to identify random location to stop the bus as requested by the passenger although it is not the verified bus stop.

4.7. The effectiveness of the working schedule

Working schedule can distract the intrastate bus driver. EM 5 said that the working schedule might distract the intrastate bus driver especially during morning shift. EP 1 said that the working schedule can distract the intrastate bus driver. EP 1 also said that, the working schedule is distract the driver especially during the peak hours because of not enough staff. Besides, during the peak hour, the timing is too tight which make the driver has no rest. EP 4 said that, peak hour is usually in the morning during the office breaks and during evening after the working hours. EP 1 add, the peak hour also can be during the school break during the afternoon.

4.8. Changing the route

Changing the route can distract the intrastate bus driver. EM 1 said that it can be distract to the driver but it depends on the purpose and condition. EM 6 said that, the route for each driver to drive the bus is changing according to the situation and rotation. EP 2 said that the changing of route makes the intrastate bus driver distracted.

4.9. Personal issue

Personal issues are one of the source of distraction to the bus driver. It is referring to the job empowerment, internal stress, family problem, colleague and others. EM 5 said that, the distraction
can occur to the bus driver because of the driver’s personal issues that occur related to the family matters. EP 5 also said that, the personal issue that can distract the driver is about the far distant between their accommodation to the workplace.

4.10. Driver behavior

The driver’s behaviour also can distract them while driving the bus. It includes the eating, drinking and smoking while driving. Besides, the personality of the driver such as hot-tempered person also can distract themselves while driving the bus. EM 1 said that, when the driver is angry because of the passenger behaviour, the driver tends to make emergency break in intention to make the passenger fall. Besides, EM 1 said that a trip usually around 30-40km and the driver have problem such as couldn’t go to the toilet during the journey. This is due to the heavy traffic and it is not appropriate for him to stop the bus randomly along the road while there are so many passengers in the bus. EM 7 add that it will make the driver angry and get distract because of this situation. EM 4 said that, eating and drinking while driving can distract the intrastate bus driver. Finding from expert practitioner group, EP 1 said that sometimes there are overacting passengers who challenge the driver for multiple time which ended with the fighting between the driver and the passenger.

4.11. Less experienced driver

EM 1 said that, sometime the distance and the condition of the road might be varies every route. When a less experienced driver goes through a new route, it is difficult for them and it can distract them from performing safety driving procedure while driving the bus. Besides, EP 4 said that, if the driver is not familiar with the condition of the bus that they drove, it can distract them. EP 3 said that, issues happen when the management change the bus due to the medical leave of another driver and need another driver to replace. EP 3 add that when the driver less experience, there will be higher tendency for accidents.

4.12. Driver’s salary

The driver’s salary might distract the driver. EM 1 said that, the salary of the driver is low compared to the workloads. The EM 1 also said that the bus driver classified as unskilled work. That is why they have low salary. EM 1 inform that, nowadays the management try to increasing the salary of the bus driver by improve the level of skill from unskilled into semi-skill. Based on the expert practitioner group, EP 7 said that he realises that accidents usually happen after they got their salary. He said that, the accidents occur because of the driver need more money for their daily expense. Since the salary is low, then they need to think about doing some part time to get extra income to cover their daily expense. In addition, EP 7 said that this problem especially happened to the new driver as their salary is still low compared to the experienced driver who already have increment salary after working as bus driver for certain time.

4.13. Driver’s welfare

Driver’s welfare focusing on the temporary resting place. EM 1 said that, the management provide the temporary for the driver to rest. The use of the temporary resting place based on the EM 1, is a place that the driver can sleep when the finished working quite late or the driver’s house is very far work the work place. EM 1 add, problem comes and might distract the bus driver is when the some of the depot don’t have temporary resting place and some of the them misused which is a place to store things beside a place for the driver to rest. Based on EP 3, the company provided temporary resting place but it is not comfortable to stay as it is not suitable with the surrounding. EP 8 have opposition opinion with EP 3 which EP 8 said that the temporary resting place provide by the management is satisfying
enough. This contradict opinion is accepted as the EP 8 and EP 3 are from different depot which each depot has their own temporary resting place based on the surrounding.

4.14. Driver’s health

EM 2 said that the health of the driver might distract the intrastate bus driver. This issue arises when there are not enough drivers. The company having this problem because the drivers is not interested with the scheme provided by the company. When there is not enough driver, the existing driver need to work overtime. When the driver didn’t have a good rest, the driver will be tired and sleepy. It spoiled the mood of the driver when coming to the work which can affect their performance. EP 8 said that the concentration and performance might be distracted because of the driver’s health. The driver sleeps late last night and need to come back work early in the morning which will make the driver fatigue. EP 3 said because of this situation, the driver always sick and unwell when come to work. EP 5 said that when driver has not enough rest, it will affect their emotion.

4.15. Open trunked radio

EM 4 said that the trunked radio used to communicate with Bus Control Centre (BCC). The issues come when any communication between driver and BCC, all other driver will hear and it lead to questions and distract the driver. EM 1 said that because of the situation, driver tend to turn down the volume. Although the communication from BCC is not frequent unless if there are emergency cases, it is not good for the driver to turn down the driver, as the drivers are not getting any important information from BCC. Besides, based on EM 2, when the BCC is not communicate using trunked radio, the drivers are misuse the radio by interaction between them with jokes which will distract other driver who not related with the interaction. EP 3 said that the driver tends to turn down the volume because it found that the radio is distracting them while driving.

4.16. Comfortability of the driver’s seat

EM 3 said that the driver’s seat does not suit the height of the driver. Although the driver’s seat can adjust based on the comfortability of the driver, but it still can distract the driver while driving the bus. EP 7 said that the driver’s seat is not same every bus. Sometimes the driver familiar with their current bus, but when they need to change the bus, the seat is not suitable for them for example, the driver need to brake the bus by using the end of the toes although after adjusting the seat.

4.17. Condition of the bus

EM 6 said that based on his opinion, the speed brake sometimes is not well functioning. EM 1 response that nowadays the model from this company are more up-to-date hence generally they are all fine. EP 4 said that some of the bus is no comfortable to drive. When driving the bus, the driver knows the problem because the bus is not well maintained. It will distract the driving of the driver. EP 5 said that although the report has been made, the problem is still there. When the bus is not well managed, the duration of the bus will take some extra time. EP 1 said that, some of the depot have brand new buses, shiny and clean but some of the depot are not.

4.18. Systematicity of the management system

This source of distraction is the interaction between the management and the bus driver. EM 4 said that when the bus driver come in the morning, the management scold the driver on what had the driver done the day before. It will distract the mood of the bus driver along the day. EP 8 said that, every accident happened, the management will scold the driver and sometimes the bus driver face heavy punishment. EP 3 said that, sometime when the bus driver give opinion about the operation of the bus,
it is not usually accepted. EP 7 said that, the managers don’t usually willing to change what they have decided. Besides, EM 2 said that, the bus driver might distract because of the bus driver need to be multitasking hence increasing the tendency of accidents happening. This happen because of the management of the company decide to minimize their running budget by eliminate the conductors which the driver need to issuing the ticket also instead of only drive the bus.

4.19. Advertising along the roadside

The advertising along the roadside found as one of the source of distraction (Salmon et al., 2011). In this research, EM 4 said that the advertising billboard along the roadside distract the driver and all the participants in the expert management agree with the statement. In the expert practitioner group, majority of the participant agree that advertising along the roadside distract the driver and some of them have contradict opinion from majority. Majority said that if the billboard is interesting, then it can distract the driver. They also said that, if the advertisement shows car or woman, it can possibly distract the driver. EP 3 said that, the advertising especially the digital billboard is not distracting because the advertisement plays too fast and the driver can’t even focus on it but EP 4 said that, the digital billboard can distract the driver especially during the night trip as the lighting from the billboard make the driver dazzle.

4.20. Special lane for bus

Special lane for the bus become one of the source of distraction among the intrastate bus driver. EM 6 said that, once there is specific lane for bus, the journey duration, and the recess time for the driver can be confirm which can prevent other source of distraction from occur. EM 1 said that, the special lane already has but not for all route. The special lane for bus supposed to be advantage to the bus company but the issues also happened because the lane is not well enforced. The lane is all occupied with car which make the bus difficult to move along the special lane for bus. EP 4 said that the operation of the bus better if there is special lane for bus. EP 3 said that, the special lane already has but only in the city not in the countryside. EP 4 add, the special lane should be empowered so that the lane only can be used for the bus driver driving the bus instead of the other vehicle.

4.21. Location of the bus stop

Location of the bus stop is found as one of the source of distraction. EM 4 said that the bus location of the bus stop can distract the bus driver and all other participants in the expert management agree with it. EP 4 said that, the company should increase the numbers of bus stop. Accident can occur by other vehicle hit back of the bus when the bus not dropping the passenger at the exact bus stop. The driver has to follow the instruction of the passenger otherwise, they will complaint to the management. EP 5 said that, the location should be in appropriate location. The EP 5 realise that the some of the location of the bus stop is not suitable. EP 1 said that, the bus stop should have enough space for the bus to stop and will not distract other road user if not, traffic congestion will be happened.

4.22. Communication between passenger and the driver

Communication between passenger and the driver found as one of the source of distraction among the intrastate bus driver. EM 1 said that, there are lots of elderly women who use the intrastate bus services. This is because, there are usually not working and they use the instate bus services to go to the market. EM 4 said that these elderly women usually very friendly and talkative. They would like to make a small talk throughout the journey. If the bus driver didn’t respond, the elderly women will start asking questions to the driver. This can cause a distraction among the intrastate bus driver. Besides, the EP 7 said that, the communication between passenger and driver can be one of the source of
distraction is because of the language barrier. Passengers of the intrastate are not only local, but also foreigner who from Indonesia, Bangladesh, Myanmar and others. Issues occur when the foreign passengers can’t speak Bahasa Malaysia and also English. It will distract the driver when the driver wants to issue the ticket as they don’t understand the destination that the foreign passenger wants to go. EM 7 said that, sometimes the foreign passengers communicate between each other very loudly which can cause distraction to the intrastate bus driver.

4.23. Distracted passenger behaviour

The intrastate bus driver facing thousands of passengers everyday with thousand variety behaviour. It is found that the passenger’s behaviour can distract the intrastate bus driver. EM 1 said that, on of the issues usually occur related to the passenger behaviour is when the driver need to face the hot-tempered passenger. This type of passenger usually likes to complaining about the ticket priced and the delayed arriving time of the bus although the delay is because of the bus problem. They will scold the bus driver and it can cause a distraction to the driver. EP 7 said that, the passenger behaviour is related with the passenger attire. There is a few cases where the passenger wear impropriate will entering the bus which can distract not only the intrastate bus driver, the other passengers also can be distracted.

4.24. Smell from the passenger

Smell from the passenger found as one of the source of distraction among the interstate bus driver. EM 7 said that the smell from the body odour of the passenger especially from the foreigner can distract the intrastate bus driver. Besides, the smell can come from the goods that passenger bring into the bus. EM 5 said that some of the passenger use the intrastate bus services to go to the fish market. When the enter the bus from the market, they bring along the good such as fish, and other smelly raw food. The smell from the raw food will distributed all inside the bus which can distract the driver and also the passengers. It comes to worse when the bus uses the air-conditioning system which the smell from the raw food is trap inside the bus. EP 7 also said that the smell from raw food such as fish can distract the intrastate bus driver.

4.25. Under-age passenger

It is found that the under-age passenger is one of the source of distraction among the intrastate bus driver. Under-age passenger is referring to the passenger who is 18 years and below. EM 1 said that, the under-age passenger can distract the bus driver when they are pressing the bell as warning to stop at the next bus stop repeatedly. Besides, EM 1 also said that the under-age passenger focusing on the school kids, they tend to make vandalism inside the bus. When the driver advises them, they will provoke and sometimes it can create fight if they are in a group. Some of the school kids will report to their parents and complaint will be made by their parent to the management of the intrastate bus service. As result, the bus driver will be punished and it can distract the performance of the bus driver. EP 3 said that under-age passenger usually uses the intrastate bus services in group. The distraction comes when they enter the bus and the driver want to issue the ticket to them.

4.26. Troublesome passenger

Troublesome passenger can distract the intrastate bus driver. EM 1 said that, some of the cases when the passenger uses the bus service when they come to KL to attend some events and they get drunk. Then they will disturb other passenger and some of them even peeing in the bus, showing their private part to another passenger. This situation sometimes happened every day. EM 1 also said that there are many cases involving pick pocketer every day and some of them are threatening the driver. EM 4 said
that, sexual harassments also always happened in the bus which can distract the bus driver. EM 1 add that there are passengers who paid invalid ticket as they paid for 2 zones but the passenger uses the bus until more than that. When the bus driver realizes, the bus driver stops the bus and call the passenger to pay for the next destination in which it will cause argument and can distract the bus driver. EP 1 also said that the drunk passenger will distract the bus driver. The driver only realizes the passengers in drunk when they enter bus and start disturbing another passenger.

5. Conclusion

As conclusion, this research found 26 sources of distraction that are very important for the management of the intrastate bus services company to be noticed in order to minimize the risk on the accident to occur especially related with the intrastate bus driver. Besides, the 26 sources of distraction also can be used as guideline for the future researcher who will continues the research related with this area.

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