Comparative Analysis of Written Investigations from Korea, Germany, and Spain of Traffic Accidents in Terms of Traffic Safety

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Abstract : Traffic statistics have great importance in that they are utilized as the basis resources for phenomena analyses and model building and as indicators for setting policy directions. In this work, it is focused to compare and improve the steps involved in the collection and management of the traffic accident data. So, this paper presents a partial comparison of three different traffic accident data systems (Korea, Germany, and Spain) and finally discusses the implications of the findings and improvement method.

Keywords: Accident data, traffic accident written investigation, accident database

1. INTRODUCTION

For those who write policy, traffic statistics are utilized as indicators for setting policy directions while in the research field they have great importance in that they are utilized as the basis resources for phenomena analyses and model building. In order to obtain meaningful results, feasible research and a proper decision-making process using traffic statistics are vital. Prior to this process, however, it is more important to ensure the accuracy and availability of the steps involved in the collection and management of these statistics.

This paper presents a partial comparison of three different traffic accident data systems (Korea, Germany, and Spain). Among traffic statistics, in Korea traffic accident statistics rely heavily on the Police Traffic Accident Database (Police DB) and what is referred to here as an integrated database (integrated DB), which is complementary and which is based on materials that are received and processed by insurers and mutual aid associations, among other organizations. Traffic accident statistics forms the basis of research and policymaking related to traffic safety and is the basic resource used essentially to determine the details, characteristics, and causes of traffic accidents; to identify problems in the transportation phase; and to derive improvement schemes. However, the fact that Korea's existing traffic accident statistics culminate in only simple numerical aggregation by item and lack general availability for research on traffic accident cause analysis and the formation of alternative plans have been pointed out as shortcomings.

Therefore, after comparing different systems and discussing the implications of the findings and eventually reorganizing the police-step traffic accident investigation items to gain a sense

of hierarchy, this work presents how accident data compiled from an investigation can be used widely in the field of research and policymaking and how an efficient and consistent system for investigation items can be created.

2. LITERATURE REVIEW

The existing research was reviewed in order to identify how traffic accident data is being used. Yi et al. (2009) investigated the volume of traffic, the number of lanes, and the presence or absence of traffic islands as variables that affect whether an accident occurred. In research by Won et al. (2009), as significant variables that define the severity of accidents, accidents caused by speeding, vehicle defects, vehicle-vehicle accidents, vehicle-person accidents, the volume of traffic, the radius of the curve coefficient of variation, and the vertical grade coefficient of variation were found and presented. With the empirical Bayes method, Kang et al. (2009) developed a traffic accident prediction model that reflected the severity of accidents by applying the equivalent property-damage-only (EPDO) concept to account for the number of mortality accidents, the number of injury accidents, the number of damage-only accidents, and the average daily traffic (ADT). Using intersection accident data, Park et al. (2008) carried out a comparison analysis and developed a model of characteristics classified by accident type, including head-on collisions, rear collisions, side-perpendicular collisions, light contact, moderate contact (fender-bending), and lane-change contact. The explanatory variables were the average daily traffic (ADT), incidents involving only the right turn lane, the lane width of the main road, and the presence of a heavy vehicle rate. Park et al. (2007) analyzed of the severity and characteristic of traffic accidents at signalized intersections. They found that variables affecting the severity of accidents at signalized intersections were the average daily traffic, average lane width of the main road, the upward vertical grade, and the gaps between speed limits.

Through a review of the existing literature, we found the following:

(1) A large portion of the data used in studies was secondary data (i.e., obtained by reprocessing original accident data) or was gained by additional inquiries.

(2) The accident data is 'static'. However, the main characteristics of the traffic accidents are determined by the dynamic aspects of the accident.

3. COMPARATIVE STUDY

3.1 Korea

Current State of Police Traffic Accident Database Construction and Application

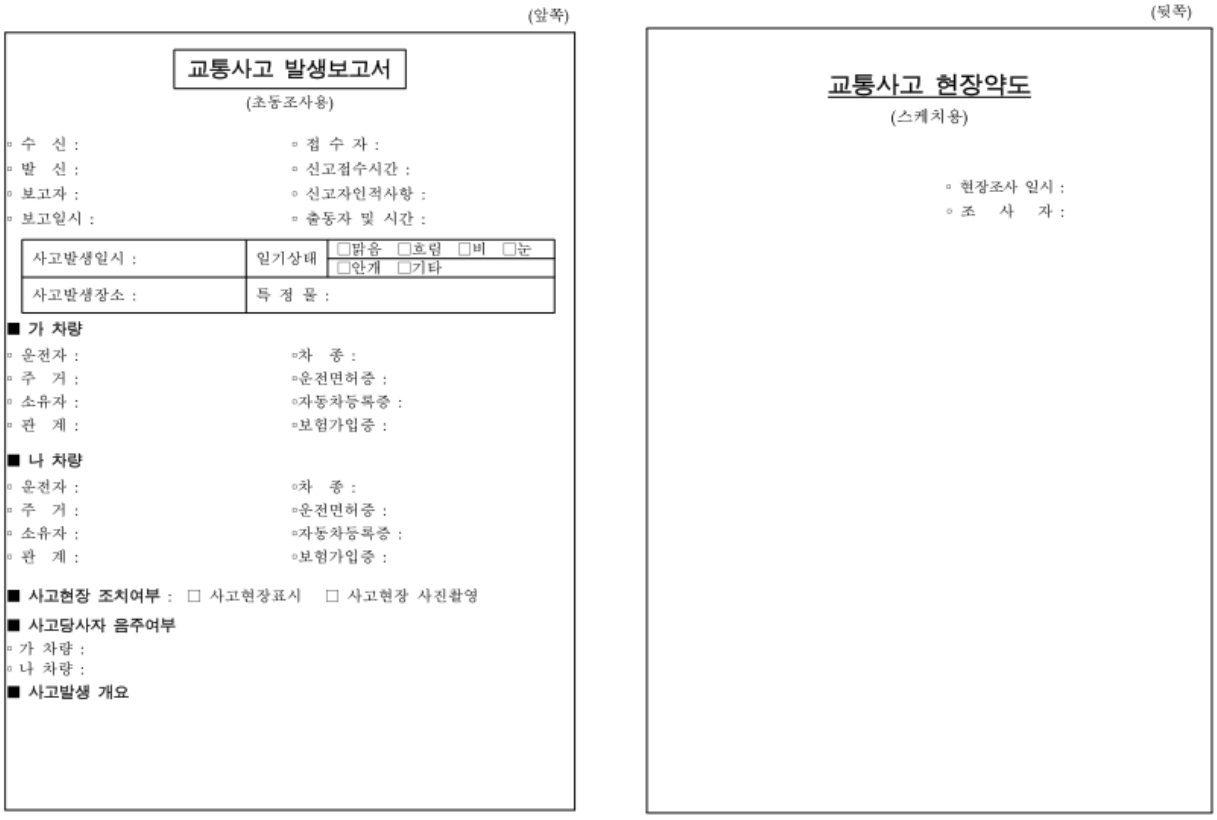
If a traffic accident occurs, the traffic accident is handled in accordance with the procedures set forth in the directive entitled ‘Directive Traffic Accident Investigation Rules’ (경찰청훈령 ‘교통사고조사규칙’), and as one outcome of these procedures, the traffic accident database is constructed. An illustration of the

procedure is given below.

Figure 1. Traffic accident management process

1. Traffic Accidents Occurrence
▼
2. First response by police, a traffic accident occurrence written report is created(police substation)
▼ (case takeover)
3. Traffic investigators respond and a field investigation is done (police station)
▼
4. In-depth accident investigation: identifying statements, forensics, etc.
▼
5. Case handling and termination, a traffic accident written investigation is made
▼
6. Statistics input (automated), DB building

Figure 2. Written report of the occurrence of a traffic accident (Korea)



(앞쪽)

교통사고 발생보고서

(초동조사용)

▫ 수 신 :　　▫ 접 수 자 :
▫ 발 신 :　　▫ 신고접수시간 :
▫ 보고자 :　　▫ 신고자인적사항 :
▫ 보고일시 :　　▫ 출동자 및 시간 :

사고발생일시 :	일기상태	□맑음 □흐림 □비 □눈 □안개 □기타
사고발생장소 :	특 정 물 :	

■ 가 차량
▫ 운전자 :　　▫차 종 :
▫ 주 거 :　　▫운전면허증 :
▫ 소유자 :　　▫자동차등록증 :
▫ 관 계 :　　▫보험가입증 :

■ 나 차량
▫ 운전자 :　　▫차 종 :
▫ 주 거 :　　▫운전면허증 :
▫ 소유자 :　　▫자동차등록증 :
▫ 관 계 :　　▫보험가입증 :

■ 사고현장 조치여부 : □ 사고현장표시 □ 사고현장 사진촬영
■ 사고당사자 음주여부
▫ 가 차량 :
▫ 나 차량 :
■ 사고발생 개요

(뒷쪽)

교통사고 현장약도

(스케치용)

▫ 현장조사 일시 :
▫ 조 사 자 :

If a traffic accident occurs, first responders (the nearest police patrol officers) are dispatched to the scene. First, after controlling the traffic situation, they undertake casualty-relief measures and then preserve the scene and obtaining evidence.

After completing these on-site processes, they take a statement about the accident situation

from those involved in the accident, including the perpetrators, victims and witnesses, afterwards taking all of the statements and data pertaining to the case to the police department of transportation units to write a traffic accident occurrence written report. Through this procedure, the first response is complete. The traffic accident occurrence written report for the first response requires the recording of the pertinent information regarding the accident, including personal information, whether anyone was drinking, the vehicle directions, and other data.

Next, in the transportation department of the police station, according to the characteristics of the case, the subsequent in-depth accident investigation procedures, including an examination of the evidence, confirmations of statements, a site reaffirmation, a forensic science investigation and a commissioned professional investigation, are done based on the content of the first response. As a result of the in-depth accident investigation, the traffic accident written investigation and the inputting of statistics are completed.

Finally, the traffic accident investigation is finished and the police traffic accident database is thus constructed from this investigation process. This database is utilized by those who establish transportation policies such as improvement projects for locations with high accident-frequency rates.

Considering this procedure, the present study focuses on the structure of traffic accident written investigations.

Traffic Accident Written Investigations and Statistics

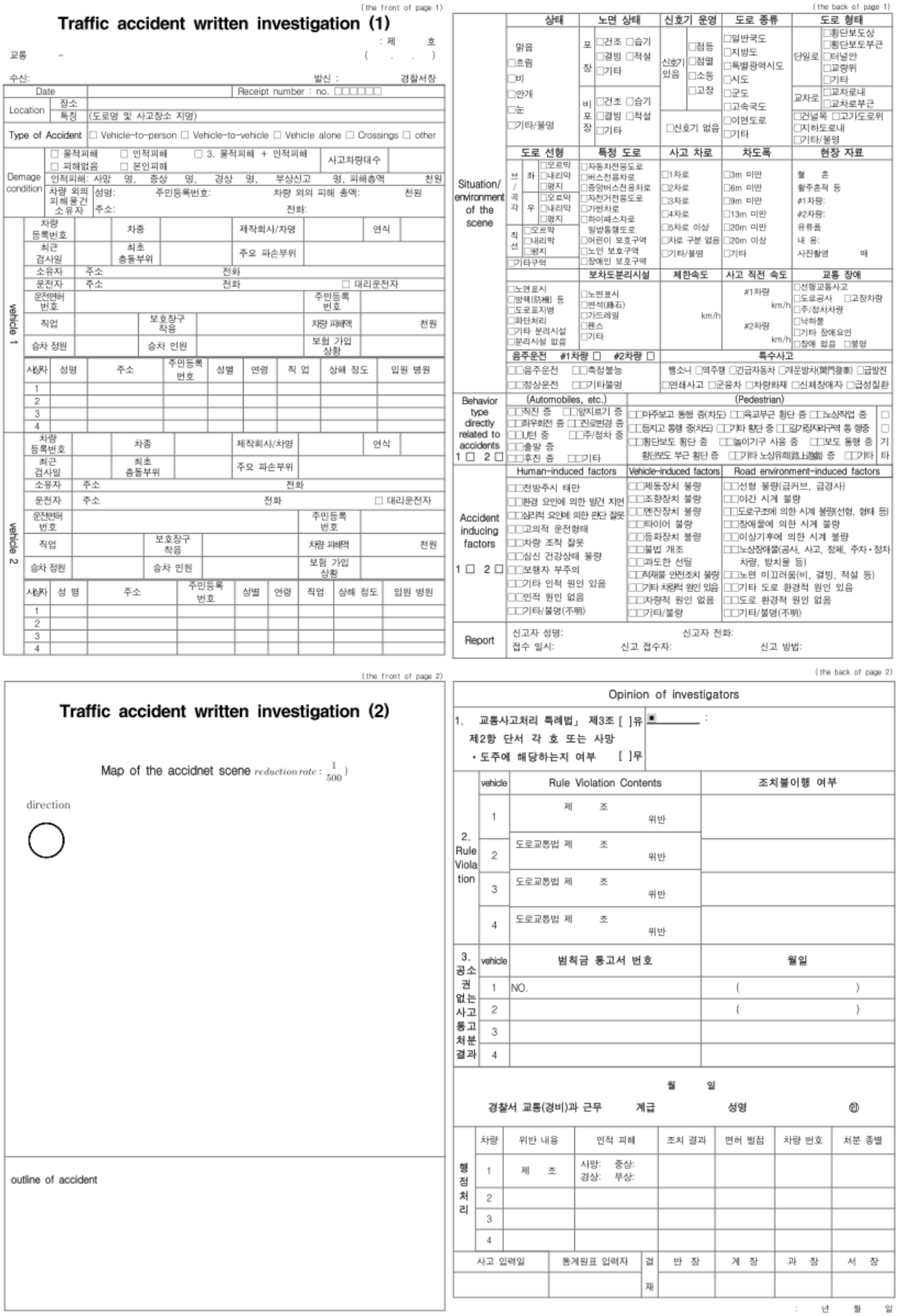
A traffic accident written investigation is conducted through an in-depth investigation which is carried out by transportation department of a police station. On the front of page 1, the basic items of the accident investigation (e.g., date, time, location, and acceptance number) and the type of accident, scale of the damage, identification of the accident-relevant vehicles are identified.

In Korea, there are five types of accidents: vehicle-to-person, vehicle-to-vehicle, vehicle alone, crossings, and ‘other’. With regard of the items used to identify accident-relevant vehicles/persons and the scale of the damage, it the resolution of the accident and the law enforcement response to the accident are mainly emphasized.

The back of page 1 consists of the field situation (e.g., weather conditions, road conditions, operating signals, road type, road alignment, specific roads, lane number in which the accident occurred, the roadway width, field data, central separation facilities, road-sidewalk separation facilities, the speed limit, speed just before the accident, traffic interruption facts, whether anyone was driving under the influence of alcohol, and information about a special accident). The form also includes behaviors directly related to the accident (e.g., automobiles and pedestrians), the causes of the accident (e.g., human-induced factors, vehicle-induced factors, and road-environment-induced factors) as well as the situation in which the police were notified. Thus, the information which can be used for research and policymaking related to traffic safety are located on the back of page 1.

On the front of page 2, a map of the accident location is drawn and an outline of accident is

Figure 3. Traffic Accident Written Investigation(Korea, translated only to needed part)



(the front of page 1)

Traffic accident written investigation (1)

: 제 호

교통 - (. .)

수신: 발신 : 경찰서장

Date		Receipt number : no. □□□□□□
Location	장소	
	특징	(도로명 및 사고장소 지명)
Type of Accident	□ Vehicle-to-person □ Vehicle-to-vehicle □ Vehicle alone □ Crossings □ other	

Damage condition	□ 물적피해 □ 인적피해 □ 3. 물적피해 + 인적피해 □ 피해없음 □ 본인피해	사고차량대수	
	인적피해: 사망 명, 중상 명, 경상 명, 부상신고 명, 피해총액 천원		
	차량 외의 피해물건 소유자	성명: 주민등록번호: 주소: 전화:	차량 외의 피해 총액: 천원

vehicle 1

차량 등록번호		차종		제작회사/차명		연식	
최근 검사일		최초 충돌부위		주요 파손부위			
소유자	주소		전화				
운전자	주소		전화		□ 대리운전자		
운전면허 번호				주민등록 번호			
직업		보호장구 착용		차량 파손액		천원	
승차 정원		승차 인원		보험 가입 상황			

사람	성명	주소	주민등록 번호	성별	연령	직 업	상해 정도	입원 병원
1								
2								
3								
4								

vehicle 2

차량 등록번호		차종		제작회사/차명		연식	
최근 검사일		최초 충돌부위		주요 파손부위			
소유자	주소		전화				
운전자	주소		전화		□ 대리운전자		
운전면허 번호				주민등록 번호			
직업		보호장구 착용		차량 파손액		천원	
승차 정원		승차 인원		보험 가입 상황			

사람	성 명	주소	주민등록 번호	성별	연령	직업	상해 정도	입원 병원
1								
2								
3								
4								

(the back of page 1)

Situation/ environment of the scene

상태	노면 상태	신호기 운영	도로 종류	도로 형태
맑음 □흐림 □비 □안개 □눈 □기타/불명	포장 □건조 □습기 □결빙 □적설 □기타 / 비포장 □건조 □습기 □결빙 □적설 □기타	신호기 있음 □점등 □점멸 □소등 □고장 / □신호기 없음	□일반국도 □지방도 □특별광역시도 □시도 □군도 □고속국도 □이면도로 □기타	단일로 □횡단보도상 □횡단보도부근 □터널안 □교량위 □기타 / 교차로 □교차로내 □교차로부근 / □건널목 □고가도로위 □지하도로내 □기타/불명

도로 선형	특정 도로	사고 차로	차도폭	현장 자료
브/곡각 좌 □오르막 □내리막 □평지 / 우 □오르막 □내리막 □평지 / 직선 □오르막 □내리막 □평지 / □기타구역	□자동차전용도로 □버스전용차로 □중앙버스전용차로 □자전거전용도로 □가변차로 □하이패스차로 □일방통행도로 □어린이 보호구역 □노인 보호구역 □장애인 보호구역	□1차로 □2차로 □3차로 □4차로 □5차로 이상 □차로 구분 없음 □기타/불명	□3m 미만 □6m 미만 □9m 미만 □13m 미만 □20m 미만 □20m 이상 □기타	혈 흔 할주흔적 등 #1차량: #2차량: 유류품 내 용: 사진촬영 매

보차도분리시설	제한속도	사고 직전 속도	교통 장애
□노면표시 □방책(防柵) 등 □도로표지병 □화단처리 □기타 분리시설 □분리시설 없음	□노면표시 □면석(緣石) □가드레일 □펜스 □기타	km/h	#1차량 km/h / #2차량 km/h	□선행교통사고 □도로공사 □고장차량 □주/정차차량 □낙하물 □기타 장애요인 □장애 없음 □불명

음주운전 #1차량 □ #2차량 □	특수사고
□음주운전 □측정불능 □정상운전 □기타불명	뺑소니 □역주행 □건급자동차 □개문발차(開門發車) □급발진 □연쇄사고 □군용차 □차량화재 □신체장애자 □급성질환

Behavior type directly related to accidents 1 □ 2 □

(Automobiles, etc.)	(Pedestrian)
□직진 중 □앞지르기 중 □좌우회전 중 □긴급번경 중 □나란 중 □주/정차 중 □출발 중 □후진 중 □기타	□마주보고 통행 중(차도) □육교부근 횡단 중 □노상작업 중 □ □등지고 통행 중(차도) □기타 횡단 중 □길가장자리구역 통행중 □ □횡단보도 횡단 중 □놀이기구 사용 중 □보도 통행 중 □ 기타 횡단보도 부근 횡단 중 □기타 노상유희(路上遊戲) 중 □기타

Accident inducing factors 1 □ 2 □

Human-induced factors	Vehicle-induced factors	Road environment-induced factors
□전방주시 태만 □환경 요인에 의한 발견 지연 □심리적 요인에 의한 판단 잘못 □고의적 운전형태 □차량 조작 잘못 □심신 건강상태 불량 □보행자 부주의 □기타 인적 원인 있음 □인적 원인 없음 □기타/불명(不明)	□제동장치 불량 □조향장치 불량 □연진장치 불량 □타이어 불량 □등화장치 불량 □불법 개조 □과도한 선팅 □적재물 안전조치 불량 □기타 차량적 원인 있음 □차량적 원인 없음 □기타/불명	□선형 불량(급커브, 급경사) □야간 시계 불량 □도로구조에 의한 시계 불량(선형, 형태 등) □장애물에 의한 시계 불량 □이상기후에 의한 시계 불량 □노상장애물(공사, 사고, 정체, 주차·정차 차량, 방치물 등) □노면 미끄러움(비, 결빙, 적설 등) □기타 도로 환경적 원인 있음 □도로 환경적 원인 없음 □기타/불명(不明)

Report

신고자 성명: 신고자 전화:
접수 일시: 신고 접수자: 신고 방법:

(the front of page 2)

Traffic accident written investigation (2)

Map of the accidnet scene (reduction rate : $\frac{1}{500}$)

direction

outline of accident

(the back of page 2)

Opinion of investigators

1. 교통사고처리 특례법」 제3조 [ ]유
제2항 단서 각 호 또는 사망
·도주에 해당하는지 여부 [ ]무

■ :

2. Rule Violation	vehicle	Rule Violation Contents	조치불이행 여부
	1	제 조 위반	
	2	도로교통법 제 조 위반	
	3	도로교통법 제 조 위반	
	4	도로교통법 제 조 위반	

3. 공소권 없는 사고 통고처분 결과	vehicle	범칙금 통고서 번호	월일
	1	NO.	( )
	2		( )
	3		
	4		

월 일

경찰서 교통(경비)과 근무 계급 성명 ㊞

행정처리	차량	위반 내용	인적 피해	조치 결과	면허 벌점	차량 번호	처분 종별
	1	제 조	사망: 중상: 경상: 부상:				
	2						
	3						
	4						

사고 입력일	통계원표 입력자	결재	반 장	계 장	과 장	서 장

: 년 월 일

described. On the back of page 2, violations of laws and regulations are listed along with the opinions of investigators. For comparing to German accident data managing method, following Table 1 present the investigation items related to the type of accident.

Table 1. Items Related to the Type of Accident on a Traffic Accident Written Investigation (Korea)

<table>
<tr><td rowspan="5">Type of accident (five types)</td><td colspan="3">Vehicle-to-person</td></tr>
<tr><td colspan="3">Vehicle-to-vehicle</td></tr>
<tr><td colspan="3">Vehicle alone</td></tr>
<tr><td colspan="3">Crossings</td></tr>
<tr><td colspan="3">other</td></tr>
<tr><td rowspan="10">Behavior type directly related to accidents (Automobiles, etc.)</td><td>While going straight</td><td rowspan="10">Behavior type directly related to accidents (Pedestrian)</td><td>While passing across a driveway</td></tr>
<tr><td>While passing</td><td>While passing down a driveway</td></tr>
<tr><td>While turning left/right</td><td>While crossing a crosswalk</td></tr>
<tr><td>While changing course</td><td>While crossing a crosswalk-neighboring part</td></tr>
<tr><td>While making a U-turn</td><td>While crossing an overpass-neighboring part</td></tr>
<tr><td>While parking</td><td>While crossing, etc.</td></tr>
<tr><td>While departing</td><td>While using the playing equipment</td></tr>
<tr><td>While reversing</td><td>While playing on the road, etc.</td></tr>
<tr><td rowspan="4">Other</td><td>While working on the road</td></tr>
<tr><td>While passing a roadside zone</td></tr>
<tr><td>While passing a sidewalk</td></tr>
<tr><td>Other</td></tr>
<tr><td>Human-induced factors</td><td colspan="3">Forward-looking neglect, delayed discovery due to environmental factors, incorrect judgment due to psychological factors, deliberately driving behavior, manipulating vehicles incorrectly, poor status of physical and mental health, careless pedestrians, no other human causes, other/unknown</td></tr>
<tr><td>Vehicle-induced factors</td><td colspan="3">Braking system defects, steering system defects, engine device defects, tire defects, lighting system defects, illegal modifications, excessive tinting, poor safety measures to loads, other vehicles causation, no vehicle causation, other/unknown</td></tr>
<tr><td>Road environment-induced factors</td><td colspan="3">Poor linear (sharp curves, steep), poor night vision, poor visibility due to road structures (linear, forms, etc.), poor visibility due to obstacles, poor visibility due to abnormal weather, road obstacles (construction, accidents, congestion, parked/stopped vehicles, abandoned items, etc.), slippery road surface (rain, frozenness, snow, etc.), other road environmental causation, no road environmental causation, other/unknown</td></tr>
</table>

3.2 Germany

German accident data managing method

Kim (2008) investigated the German method of accident typology and applied that typology

to a practical accident data set. By applying the German typology method to Korean traffic accident data, she re-arranged traffic accident types depending on the actual conditions of our country. Then, she chose study areas and, based on actual data, distinguished the type of each accident using the German valuation method, finally creating an accident display map using the German display style.

The core of the German method involves its use of seven 'sub-specialized accident types' for categorizing accidents regarding the cause of the accident and the attributes of the accident location/situation to be included in each type. The seven sub-specialized accident types are road accidents, rotation accidents, rotation/cross accidents, pedestrian accidents, accidents with parked vehicles, accidents in the same direction, and other accidents. Therefore, this method has the advantage of being useful for analyzing and implementing an improvement plan depending on the specific type of accident or the cause of the accident. Moreover, it is easy for a person who looks up the data to understand the overall flow, as it is possible to consider intuitive logical linkages from higher types to detailed types.

Another point is that there is consistency between collecting and classifying the accident data frame and utilizing the accident data frame.

Collecting/classifying accident data: an accident investigation step and an accident data classification step (for each type)

Utilizing the accident data: creating an accident display map, creating an accident systemic analysis graph, and creating an accident diagram

Figure 4.Division and Expression Method Related to the Type of Accident(Germany)

Number	Type of accident	Contents
1	Driving accidents (Green)	Caused by losing the vehicle control ability
2	Rotation accidents (Red)	Collision between rotating vehicle and same/opposite directional vehicle
3	Rotation/cross accidents (Yellow)	Collision with vehicle which has duty to yield when rotating/crossing
4	Pedestrian accidents (White)	Collision between vehicle and pedestrian
5	Accidents involving a parked vehicle (Blue)	Collision caused by parked vehicle
6	Straight line accidents (Orange)	Collision with same/opposite directional vehicle in Straight line
7	Etc. (Black)	The other accident

1. Classification of Accident Type

Type of accident	Color	Type of accident	Color
Driving accidents		Cross accidents	
Rotation accidents		Pedestrian accidents	
Accidents involving a parked vehicle		Straight line accidents	
Etc.			

2. Classification of Accident Severity

Mortality accidents White : 8mm Rectangle : 10mm	Serious injury accidents 8mm	Minor injury accidents 6mm	Damage only accidents 4mm

3. Classification of Accident Situation

Accident Situation	
Pedestrian(red)	Alcohol(bright blue)
Bicycle(bright green)	Passing(purple)
Motorcycle(Yellow)	Animal(brown)
Tree(dark green)	Height 15mm Bottom 6mm

Table 2. Items Related to the Type of Accident on a Traffic Accident Written Investigation (Germany)

Illustration (Example)	Type of accident (7)	Detailed type
	Driving accidents	Curved sections, main road: left turn, entering an intersection or a sub-road, linear variation, effect by vertical grade or cross grade

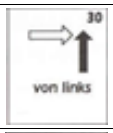
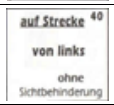
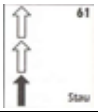
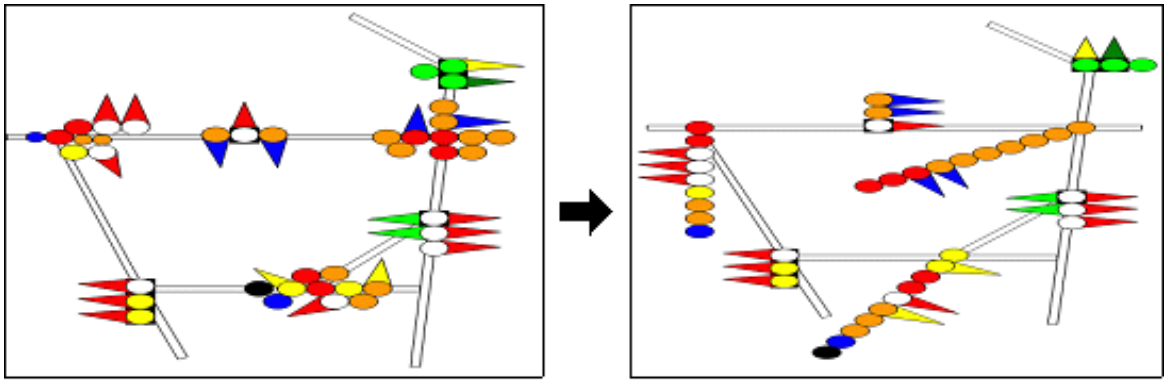
	Rotation accidents	Collision with a vehicle coming in the same direction while turning; collision with a vehicle coming in the opposite direction while turning; collision with a pedestrian (same/opposite direction) while turning
	Rotation/cross accidents	Collision between vehicle on the left side and a stopped vehicle, collision between a vehicle overtaking on the left side and a yielding vehicle
	Pedestrian accidents	Left-side vehicle collision with a pedestrian (bike) with sight restrictions
	Accidents involving a parked vehicle	Rear vehicle collision with a parked vehicle; collision between vehicles avoiding a parked vehicle and a vehicle in another lane
	Straight line accidents	Rear vehicle collision with a vehicle in front, rear vehicle collision in vehicle traffic congestion
	Etc.	Accident while parking, accident while reversing vehicle, accident involving a vehicle making a U-turn

Figure 5.Expression examples



3.3 Spain

Method of Spain: MATRAS

In a study by Tormo et al. (2009) in Spain, METRAS (the Measuring and Recording Traffic Accident Sequence) is presented as a key element of the traffic accident data collecting process. The core contents of the METRAS method are as follows: first, accident data is gathered in two parts. In the first part (the 'prior' stage, before the collision), all of the statistical information pertaining to the accident (e.g., the accident location, related parties, behaviors before the accident, violations, defects of the vehicle, and the psychophysical states of those involved) is described. In the second part (the 'conflict' stage, collision step), the

accident occurrence situation is presented in three to four divided steps and the detailed process and cause/effect are explained so that an intuitive understanding is possible.

Second, to link the separate steps of the second part (the conflict stage, collision step) and the information associated with the accident occurrence itself in the first part (the prior stage) is created. This can be done using code numbers for each individual step in the second part.

Lastly, I found that the scheme of coding used in the MATRAS method includes codes for accident type and accident cause. Therefore, is easy and intuitive to use (i.e., for searches or analyses).

Implications

The findings presented above have important implications for those who seek to improve the domestic methodology. Domestic accident data recording is somewhat similar in that the method of Korea is also a two-level system involving Traffic Accident Written Investigation (1), which describes all of the static information prior to the accident, and Traffic Accident Written Investigation (2), which presents a map of the accident location. Regarding the dynamic information pertaining to the occurrence of an accident, after the creation of the accident location map, an accident outline is given as a narration of the occurrence outlines in the traffic accident written investigation (step 2). However, in the 'conflict' stage of the METRAS method, as previously explained, by dividing the accident sequence into detailed steps, it is possible to analyze the specific process, with a linkage made by recording a code pertaining to each detailed step with the information of the 'prior' stage. This style is beneficial because it offers a rapid and intuitively understanding of the accident and a means with which to study or analyze the accident.

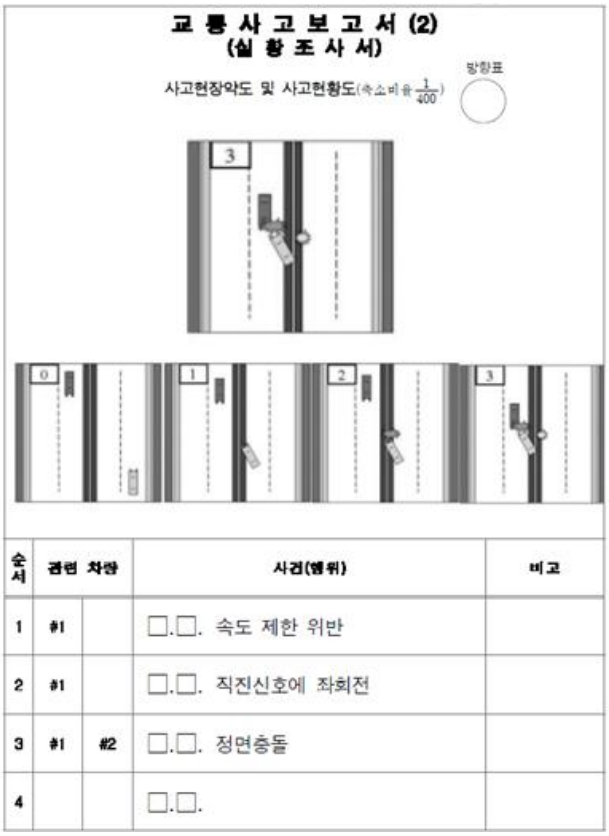
Consequently, the METRAS method gives us an idea regarding integrating or connecting traffic accident written investigations (similar to steps 1 and 2 above). In other words, if, as part of the accident location map during the traffic accident written investigation (step 2), a detailed accident process by steps is presented, as in the 'conflict' stage of METRAS, if the information about the accident-relevant information of the traffic accident written investigation (step 1) is described, and lastly if all of the static information about the accident is listed, such a process will make the traffic accident written investigation coherent to those who must use accident situations in their work.

4. IMPROVMENT METHOD

Based on the contents of the previous chapter, this chapter suggests a way to improve the overall data management system.

1. To reflect the dynamic aspects of the accident, traffic accident reports (2) should be improved as follows:

Figure 6. Example : Improvement Method



순서	관련 차량		사건(행위)	비고
1	#1		□.□. 속도 제한 위반	
2	#1		□.□. 직진신호에 좌회전	
3	#1	#2	□.□. 정면충돌	
4			□.□.	

2. Reorganize items on the traffic accident written investigation depending on the type of accident into seven types:

Sub-specialized seven accident types:

Road accidents, rotation accidents, rotation/cross accidents, pedestrian accidents, accidents with parked vehicles, accidents in the same direction, other accidents

This gives us the advantage of being useful for analyzing and implementing an improvement plan depending on the specific type of accident or the cause of the accident. Moreover, it is easy for a person who looks up the data to understand the overall flow, as it is possible to consider intuitive logical linkages from higher types to detailed types.

3. Use a display technique of traffic accident management guidelines to draw a diagram of the scene of the accident.

5. CONCLUSION

This work presents an initial analysis of the current state of police traffic accident data management and studies related literature to find what is being well done and what are problems to be improved. Through a comparative analysis of existing domestic law and policy and foreign data management approaches (Germany, Spain), specific points which can

be improved are found. Lastly, A broad and rough improvement method is presented.

Furthermore, through user (researcher) / administrator (practitioner) interviews or surveys regarding improvements and additional items, an alternative to meet current needs should be offered. By applying these ideas to the set of actual accident cases and through feedback, the adequacy of the improvements can be reviewed and enhanced if necessary.

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