

Safety of Coach Based School Transport in the UK: A Study of Safety Compliance of Coach Operators and Trust of Stakeholders

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Abstract: Coaches are considered as the safest mode of transport for children, but coach crashes result in a high number of fatalities per crash. In the United Kingdom (UK) alone 1218 children were injured in 381 coach crashes between 2005 and 2016. Schools in the UK rely on coach operators to provide vehicles for school trips. Between 2016 and 2017 alone, 78 coach operators' licenses have been revoked without public inquiries in the UK due to operator's non-compliance. There are only limited studies available, which examined the safety of children travelling by hired coaches in the UK. The safety of children travelling using hired coaches in the UK is investigated to identify the safety related issues. This is achieved through the analysis of existing literature, the national crash statistics, traffic commissioner reports and the views of relevant stakeholders. Sequential mixed-method exploratory research was used for data gathering and analysis. The results show that there is a critical knowledge gap within the stakeholders. The most significant safety issue identified is the stakeholders' unawareness of drivers and coaches safety condition before and during school trips. This requires immediate attention before more children lives are put at risk.

I. INTRODUCTION

Transport has become an essential part of any society and its economy for its sustainable function. Safety in transport is concerned with the protection of life by regulating, managing and developing technology for all forms of transport. People use transport for day-to-day activities such as school, work and business movements or social and leisure purposes. An average of 973 trips is made per person, out of which 105 are on school runs [1]. Safety in school transport systems is a critical issue which involves children who are the most vulnerable users [1]. Statistics show that in the United Kingdom (UK) which includes England, Scotland, Wales and Northern Ireland, 1218 children were injured in 381 coach crashes between 2005 and 2016, which is equivalent to an average of 101 children getting injured every year [2]. Driver errors and technical faults in vehicles were the most commonly reported factors contributing to coach crashes [3]. Although coach journeys are considered the safest mode of transport for children, coach crashes are the ones which result in many fatalities per crash as coaches carry a large number of children compared to any other means of road transport [2,4,5]. England alone has more than 24000 schools and each school at least makes two trips per year, which is equivalent to

48000+ local journeys made every year [6]. School transport using coaches can be classified into two types, Home to School Services (HSS) and Occasional Coach Hires (OCH) (field trips, sport matches, etc.). In HSS, the coach operators usually advertise the service and routes. Parents who find it suitable for their children adopt the service. As it is a routine journey and carried out in the same route most of the time, home to school services are mostly safe [7]. Occasional coach hires involve transporting children from one council to another or from one region to another or from one country to another. These kinds of journeys usually involve high risk compared to home to school transport because of the non-routine routes[7]. Schools rely on coach operators to provide vehicles for school trips and school/home services [8]. In the UK, there are strict rules on operator's compliance with the government regulations. In 2017 alone, 78 coach operators' licenses have been revoked without public inquiries in the UK due to operator's non-compliance [9]. There is no specific safety model available to ensure safety of children travelling by coaches [10]. This raises a research question, "Is school transport through private coach hires in the UK really safe?". Only a limited number of researchers have examined safety aspect of coach operators, the condition of vehicles used and also the drivers in the UK [11]. The purpose of this study is to analyse the safety of children travelling through coaches in the UK and to identify the safety related issues and requirements of stakeholders associated with it. This is achieved through analysis of existing literature, crash statistics obtained from STATS19 database [2], traffic commissioner's reports [9], as well as the outcome of the sequential mixed-method exploratory research. As part of the mixed method research design, a qualitative survey was conducted using semi-structured interviews in Luton Borough Council. Based on the qualitative results, a quantitative survey was conducted across the UK. The results of the analysis are presented in the following section 3. This will lead to the development of a safety model which should validate the coach operators, their coaches and drivers before a journey in terms of their compliance with government safety regulations.

II. LITERATURE REVIEW

Fatal British coach crashes [12–14] carrying school children within and outside the UK have alarmed the safety professionals and the UK government. The UK government

has been trying to improve safety in school transport through research-based policy updates [15]. In 2010, the Scottish government commissioned Transport Research Laboratory (TRL) to develop guidelines, policies and procedures for safety in school transport [16]. In-depth case studies were carried out with Scottish local authorities to develop safety guidelines and policies. Subsequent after applying and using the guidelines and policies for two years, TRL reviewed their effectiveness and explored ways in which they could be improved [17]. In Sweden, door-to-door safety of schoolchildren was investigated in 2012 in a project named *safe2school* [18]. The study focused on route planning for school vehicles, real-time route guidance, intelligent bus stops, location tracking, school vehicle monitoring, warning system around school buses, training schemes for stakeholders [19,20]. Qatar government conducted a study on school transport in 2012 to improve the safety of children in their country. The main aims of the study were, assessing the stakeholder's perspective on school transport, identifying their vision and goals for the safety of school transport, reviewing international norms for school transport and comparing it with their existing norms. However, information about the safety of children on school trips was not included in the study [21]. Edmonston and Sheehan (2001) reviewed the school transport safety in New Zealand and proposed safety recommendations to the government. This resulted in the development of a tool named "School transport safety matrix", which was built using Haddon's matrix [23]. In 2014, the English government launched a new home to school travel and transport guidance for local authorities, parents and other interested parties [15]. Criteria for selecting coach operators for school trips were not included in the guidance.

There is currently no specific model available to ensure the safety of children travelling by coaches [10]. Only limited studies have been conducted in the UK to investigate the safety of children travelling by coaches [11]. The existing literatures so far focused on different safety aspects of the coach based school transport. But, there has been no comprehensive research on safety issues associated with hired coaches transporting schoolchildren in the UK. It is evident from the literature that there is no specific safety model available to ensure the safety of children travelling by hired coaches in the UK and there is a need for a further in-depth investigation.

III. METHODOLOGY

The objective of this paper is to explore the safety level of coach-based school transport. Therefore the literature on the safety aspects of coach-based school transport was reviewed. Going by the lack of literature in this field, investigation on the existing safety aspects of children travelling by hired coaches in the UK was necessary. A concise analysis of coach crash statistics involving children using the UK traffic commissioner reports, the national crash

statistics (STATS19 database). Subsequently, a sequential exploratory mixed method research [24–26] using two questionnaires was implemented and the results presented.

3.1 Crash Analysis

In the UK, road vehicle crashes are well documented in an official database called STATS19 - [2] which contains reported crashes. The STATS19 database has three different datasets named crash data, collision data and causality data. The data is collected based on the regions in the UK (South East, London, North West, East of England, West Midlands, South West, Yorkshire & the Humber, East Midlands, North East, Scotland's government regions and Wales' government regions). The data from the STATS19 database was used to analyse coach crashes involving children. The following logical criteria were used for extracting information from the STATS19 database using the MAST analysis tool [27]. Criteria - crashes involved a coach which was undertaking a journey with the specific purpose of taking pupils to or from school (HSS) during Monday to Friday, either 7AM to 9AM or 3PM to 5PM OR outside weekday normal hours OR 12 AM to 11.59 PM in weekends (such as to or from extra-curricular activities – Excursion trips OCH) AND at least one passenger on that coach suffered an injury. Table 1 illustrates the outcome of the analysis of crashes occurred between 2005 and 2016. There were 381 crashes in total and 618 vehicles were involved which resulted in 1218 child casualties. Crash severity was recorded based on the scale 1 – Fatal, 2 – Serious and 3 – Slight. Although the number of crashes and casualties are slowly decreasing as shown in Figure 1, there are still a considerable number of coach crashes which are occurring. According to the Department for Transport (DfT) in the UK, driver errors or technical faults in the vehicle were the most commonly reported factors contributing in all coach crashes [3]. The government has requested strict regulations to be applied, particularly by the Private Sector Vehicles (PSV) and ordered Driver and Vehicle Standard Agency (DVSA) to inspect the coach operators regularly for their compliance with the government regulations.

Table 1 Coach Crashes in the UK (2005-2016)

Year	Number of Crashes	Number of Vehicles Involved	Number of Casualties	Crash Severity
2005	58	89	144	1, 2 and 3
2006	54	92	168	2 and 3
2007	36	66	138	2 and 3
2008	42	69	105	2 and 3
2009	39	62	110	2 and 3
2010	32	48	132	1, 2 and 3
2011	31	51	110	2 and 3
2012	27	42	83	2 and 3
2013	13	21	53	2 and 3
2014	21	31	102	2 and 3
2015	18	32	46	2 and 3
2016	10	15	28	2 and 3
Total	381	618	1218	

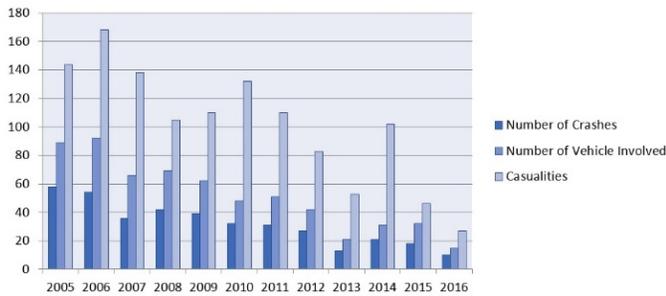


Fig. 1.Coach Crashes in the UK (2005-2016)

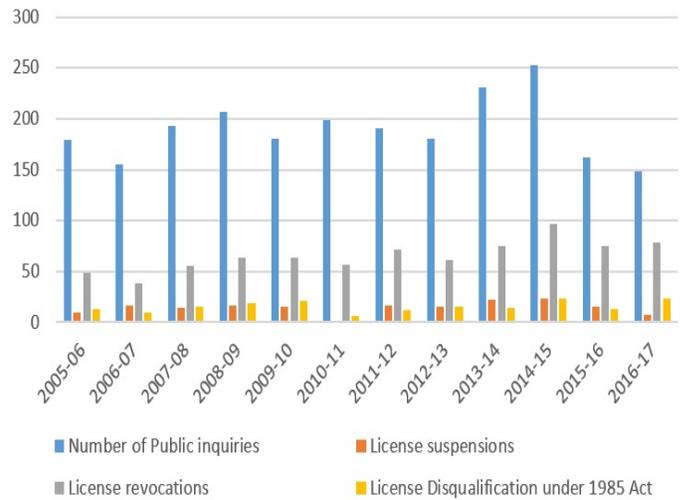


Fig. 2. Traffic Commissioners' Reports (2005-2017)

3.2 Traffic Commissioners' Report Analysis

Traffic commissioners are responsible for licensing, inspecting and verifying operators of Heavy Goods Vehicles (HGVs) and Public Service Vehicles (PSVs) in the UK. Regulatory actions may be taken against operators such as revoking, suspending or curtailing the operator's license [28]. Thus, during the period 2005 to 2017, 783 operators' licenses have been revoked without a public inquiry [29]. Every year, traffic commissioners publish a report [9]. Table 2 shows the summary of traffic commissioners' report for 2005 to 2017. Inspectors from Vehicle and Operator Service Agency (VOSA) examine vehicles at random places or by surprise visits to coach companies. (VOSA was replaced by Driver and Vehicle Standards Agency DVSA in April 2014) [30]. They have the right to take any vehicle off the road if they suspect that the vehicle is not fit for the purpose or if there is anything wrong with the driver [28]. As inspecting all the coach operators is not feasible, it is difficult to assume that coaches used for school transport are always safe.

Table 2 Traffic Commissioners' Reports (2005-2017)

Year	Number of Public inquiries	License suspensions	License revocations	License Disqualification under 1985 Act
2005-06	179	10	49	13
2006-07	155	16	38	10
2007-08	193	14	55	15
2008-09	207	17	64	19
2009-10	180	15	63	21
2010-11	199	2	57	6
2011-12	191	17	71	12
2012-13	180	15	61	15
2013-14	231	22	75	14
2014-15	252	23	97	24
2015-16	162	15	75	13
2016-17	148	7	78	23
Total	2277	173	783	185

3.3 Sequential Exploratory Research Design

The research consisted of two phases. The first phase was to collect qualitative data followed by analysis and in the second phase, quantitative data was collected and analysed. Figure 3 shows these phases. Detailed explanation is provided in sections 3.3.1 and 3.3.2.

3.3.1. Phase 1 – Qualitative Survey: The objective of this survey was to understand the phenomena and problems related to hiring coaches for transporting schoolchildren and to identify safety-related issues. Luton Borough Council in East of England was selected as a geographical area for the survey that was conducted for a period of 6 months (March 2016 - September 2016 – time taken to complete the required number of interviews). East of England has had more coach crashes and operator license revokes, compared to most of the other regions. Stakeholders were selected based on their experience in handling schoolchildren and also the coach transport industry. In total, 270 invitations were sent for to different stakeholders and 57 agreed to participate in the survey. 57 in-depth interviews were conducted with stakeholders (coach operators – 12, coach drivers – 13, parents – 17, school headmasters – 12, Luton Borough council transport officer and road safety analysts – 3). To avoid any possible ethical issue, approval was received on the intended process from Bournemouth University's Ethics committee. Before the interview, participants were provided with a short introduction about the research. Interviews were audio recorded. To analyse the interviews and transcribed data, the thematic analysis methodology [31,32] was followed using Nvivo.

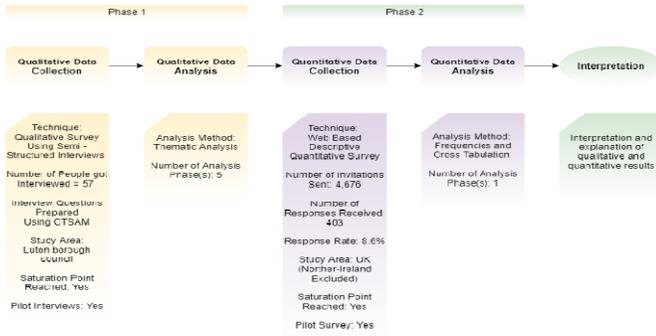


Fig.3. Sequential Exploratory Mixed-Method

3.3.1.1 *Interview topics:* To support the semi-structured interviews, a holistic interview topic matrix based on Haddon Matrix [23] which is named “Coach Travel Safety Analysis Matrix (CTSAM)” was developed. CTSAM is used as a tool for creating questions for qualitative interviews. Each coach trip is classified into three phases, Pre – journey (before the trip), journey (during the trip) and post – journey (after the trip). The trips were categorised into these based on the three factors Human/Host, Agent/Vehicle and Physical Environment. Within the CTSAM, various issues relating to school transport with respect to journey-phases are listed. Table 3 shows the categories which are based on the current coach-based school transport in the UK.

Table 3 Coach Travel Safety Analysis Matrix (Interview Topics)

Journey sequence	Human/Host	Agent/Vehicle	Physical Environment
Pre Journey	<ul style="list-style-type: none"> Crash Awareness Safety Measures Driver Check Children Safety 	<ul style="list-style-type: none"> Vehicle Safety Safety Measures Children Safety 	<ul style="list-style-type: none"> Coach Operating Environment and Procedures Route Safety Children Safety
Journey	<ul style="list-style-type: none"> Children Safety Children Behaviour Issues Stakeholder Communication Children Safety Communication Problems 	<ul style="list-style-type: none"> Problems During Travel Vehicle Issues 	<ul style="list-style-type: none"> Environment and Other Problems
Post Journey	<ul style="list-style-type: none"> Preventions, Suggestions & Future Enhancements 	<ul style="list-style-type: none"> Emergency Procedures 	<ul style="list-style-type: none"> Pickup/Drop Coach Stop Issues

3.3.1.2 *Interviews Outcome (Qualitative Results):* The key issues expressed by parents and school headmasters were “unawareness of the vehicle’s and driver’s conditions” throughout the journey. In response to questions, how they were sure about the safety of coaches for trips, parents pointed

out that “they trust the schools and the coach operators”. Similarly, schools put their trust on the operators. However, based on the traffic commissioners’ reports, a minimum of 2 to 3 operator’s licenses are revoked every week in the UK due to operator’s non-compliance. “Children’s behaviour at coach stops and inside the coach” is the second major issue reported by the stakeholders. Children who left unsupervised at coach stops and inside the coach may create unnecessary problems like bullying, fighting with each other, throwing items at each other etc. Most of the drivers reported that they were “distracted by the children” while driving the coach. In extreme cases, drivers had to stop the vehicle and resolve issues between the children inside the coach before continuing their journey. The next issue is “lack of training of drivers” in handling schoolchildren, which can lead to “driver’s misbehaviour” like yelling at children and being tense while driving which puts them at risk. Another issue is the “use of inexperienced drivers” who are responsible for most of the crashes. Drivers are required by law to go through a Disclosure and Barring Services (DBS) check before transporting schoolchildren. However, there are no guidelines in respect of the experience of driver regarding school transport. However, after going through the DBS check and by holding a proper license, a driver can drive coaches for school trips. Some drivers reported that due to improper maintenance “vehicles being out of control” which is a common reason for crashes. Coach operators must do a daily walk around check, six-week maintenance check and yearly Ministry of Transport (MOT) test, as required by the UK law. Normally, drivers carry out the walk around check. The Six-week maintenance check and MOT are normally carried out in Certified Service Centres. It is necessary to keep the vehicle fit for purpose and the frequency of the checks varies depending upon the operator and the size of the fleet. If an operator is found failing to do any of these checks it may lead to 2-weeks suspension or license revoked. A typical reason for a 2-week suspension is the “failure of drivers to carry out a daily walk around checks”. “Driver fatigue” is a commonly reported reason for coach crashes from the view of all the stakeholders. Allocating a driver who has not taken enough rest leads to driver fatigue, which puts children at risk. However, the “real rest taken by the driver” may not be known until the driver admits it. It is mandatory for drivers to use Tachograph a device that stores the speed, distance travelled and driving hours of the driver. Drivers must strictly follow the driving hours as required by law. Based on the type of trips the driving hours may vary. The maximum driving hours allocated for a driver is 9 hours per day in which drivers should take a compulsory break after driving continuously for 4.5 hours. After completing the 9 hours duty, drivers have to take a compulsory 11 hours break before starting the next day service [33]. It is illegal to drive without a Tachograph. “Driving hours’ violation” is a serious issue with coach drivers, which must be addressed. In some crashes, coach drivers are not the one who commits mistakes. If a coach is

carrying children, the coach should display the school bus sign on at the front and rear of the vehicle. "Behaviour of other drivers around the coach" is also reported as one possible reason for coach crashes. Sometimes recklessness drivers around school coaches lead to crashes. Some issues are specific to trip types. OCH may involve higher risks compared to HSS. The major reported issue with the long-haul trips is the "21 hours double manned (drivers) trips". If two drivers are assigned for a long trip, they can drive for 21 hours continuously with the same legal rest time in between the 21 hours [33]. When one driver is driving, the other one is expected to rest on the seat, which may not be comfortable. In most cases, the second driver cannot sleep and end up driving without having an appropriate rest. Another issue mentioned by most of the drivers interviewed is the place where they stay during the trips. Drivers reported that they were "not given proper accommodation" during the trips. Sometimes the drivers are left without accommodation and expected them to sleep inside the coach. Even when accommodation is provided, it might be close to the area where students are staying and drivers are continuously disturbed by students whilst sleeping. In respect of the HSS transport, the major issue reported by the stakeholders was "lateness". Table 4 shows the top 10 issues identified during the interviews. Unawareness of the driver & vehicle condition, children behaviour at coach stops & inside the coach and lateness are the top 3 commonly identified issues among the stakeholders. However, the order of priority changes depending on the stakeholder. For an example, unaware of the driver and vehicle condition is the top issue with parents and headmasters, but for drivers, children behaviour inside the coach is the primary issue. On the other hand, the order of priority of coach operators relate to issues which affect the service they provide. Most of the issues identified with drivers involve children and themselves. Some unique issues like difficulties in 21 hours double team journey and night stay during the trips are identified. Both head-masters and parents are concerned about children safety. Town council transport officer and road safety analysts expressed that coach booking for the school trips is done based on trust by the schools. Comparing the top issues of all stakeholders, it is evident that unaware of driver and vehicle condition are major issues identified. Coach operators have also indicated that schools or parents never requested them to provide information on the vehicle's and driver's condition in their many years of experience. These are the main issues identified in this study. Issues 1, 4, 5, 6 and 7 are the most significant in respect of children safety which require an urgent attention. Not verifying the driver and vehicle status puts the children at risk. By validating the vehicle and the driver status, along with vehicle and student tracking, it is possible to reduce the safety risks.

Table 4 Top 10 Safety Issues

No	Identified Issues	Trip Type
1	Unawareness of driver and vehicle condition	HSS&OCH
2	Children behaviour (coach stop, inside the coach)	HSS&OCH
3	Time delays by parents-drivers (lateness)	HSS
4	Inexperienced driver (driver error)	HSS&OCH
5	The driver got distracted by pupils in the coach	HSS&OCH
6	Vehicle out of control (vehicle error)	HSS&OCH
7	Driver Fatigue	HSS&OCH
8	Other vehicle behaviour around the coach (External Factors)	HSS&OCH
9	21 hours double team journey	OCH
10	Driving hours (real rest time)	HSS&OCH

Home to School Services (HSS) and Occasional Coach Hires (OCH)

3.3.1.3 Limitations of the qualitative survey: Luton Borough Council in East of England was selected as the study area and the results discussed are based on this area. However, it is important to broaden the research and further investigate the identified issues across the UK. The coach operators who participated in the interviews were fully complying with the government guidelines. The operators whose licenses had been revoked did not wish to participate in the survey. School children were not included in this survey as the intention was to identify issues which relate to the operators and coach-based school transport. Future research could, include the views of children in the investigation.

3.3.2. Phase 2 – Quantitative Survey: The objective of this quantitative survey was to extend the research to a broader geographical area. People who fitted in the categories of the stakeholders in the previous survey (Parents, Teachers, School Headmasters, Coach Operators, Drivers, Council Transport Officers and Road Safety Analysts) were invited to participate. Table 5 shows the information which is obtained from the government databases [34][9,35][36,37]. A Questionnaire for the quantitative survey was prepared based on the outcome of the previous (qualitative) survey. The questionnaire was uploaded to google forms, which provides a user-friendly interface for form creation and basic analytic tools. Research description was shown to the participant prior to completing the questionnaire. Table 6 shows the minimum required sample size what is calculated based on the recommendation of [38,39]. In total 4,676 invitations were sent out in which 403 responses were received which gives an overall response

rate of 8.6%. Figure 4 shows the analysis of the responses received from different stakeholders.

Table 5 Total Population Size

	Parents	School	Operator	Driver	Council
England	8,560,000	24,288	7,503		353
Scotland	684,415	2,524	971	393,382	32
Wales	104,959	1,574	858		22
Total	9,349,374	28,386	9,332	392,382	407

Table 6 Minimum Required Sample Size and Response rates

	Parents	School	Operator	Driver	Council
England	62	58	54		51
Scotland	5	6	7	68	4
Wales	1	4	6		3
Required Sample Total	68	68	67	68	58
Invitations Sent:	2500	500	1269	1269	407
Responses Received:	109 (4.3%)	73 (14.6%)	72 (5.6%)	80 (6.3%)	69 (16.9%)
Total:			403 (8.6%)		

Which Category relates you the Most?

403 responses

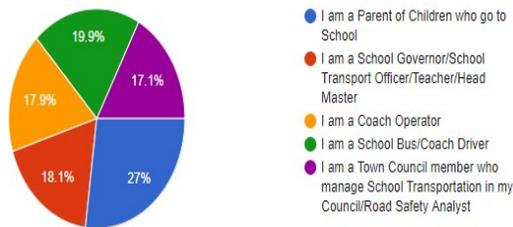


Fig. 4. Responses received from different stakeholders

3.3.2.1 Survey Outcome (Quantitative Results): Once the survey was over, the data from google forms was exported into the .xls format. The Cross-tabulation method was used to analyse the relationship between the stakeholders' answers [40]. From the section 3.2, we understood that contributory factors for 49% of the coach crashes were only reported to the government and recorded. The remaining 51% of the contributory factors for coach crashes were unknown or not reported. Therefore, during the two surveys, the stakeholders were asked for their views on the cause for coach crashes when carrying children. Most of the replies related the cause to vehicle errors and driver errors for coach crashes. This correlates with the information that coach exist in the DfT-Ras database [3]. Table 4.3 and Figure 4.15 show the contributory factors for coach crashes as mentioned by the stakeholders of coach-based school transport. The table

indicates the number of responses by the stakeholders. According to the department of transport UK, contributory factors for 49% of the crashes is only reported and remaining 51% is unknown [3]. Table 7 and Figure 5 show the contributory factors for coach crashes as mentioned by the stakeholders of coach-based school transport. Table 7 also indicates the number of responses received and the stakeholders.

Table 7 Possible contributory factors for coach crashes – number of responses by stakeholders

Issues	Parents	School Headmasters	Operators	Drivers	Town Council	Total number of responses
Vehicle error	77	55	32	39	31	234
Driver error	55	41	38	42	32	208
Inexperienced driver	37	26	22	18	18	121
Driver got disturbed by the pupils	16	14	22	25	17	94
Other vehicles around the coach	26	27	26	26	43	148
21 hours journey	-	-	26	24	8	58

Parents were questioned on how they ensure that their children are travelling safely with respect to the safety compliance procedures of coach operators, vehicle and driver, on coaches arranged by schools. In response, 87.2% of the parents answered that they trust the school and believe that they follow all the safety procedures to ensure the safety of children. Further, 8.3% of the parents indicated that they trust the school, and also they often became involved with the coach booking process ensuring the school uses safe coach operators. The remaining parents expressed their concerns about the safety of their children travelling on hired coaches as shown in Figure 6. It shows that the majority of the parents involved in the surveys do not investigate the safety level of hired coaches used for children. They believe that schools take care of the safety of their children. Very few parents are involved in arranging hired coaches for school trips.

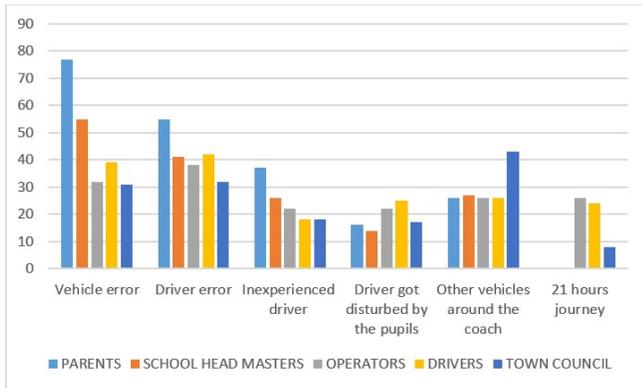


Fig. 5. Possible Contributory Factors for Coach Crashes

Further questions were asked from parents who are involved in arranging coaches. They were asked “how do they select their coach operators for a journey?” In total, 50% of the parents responded that they conduct an internet search to find operators with good reviews and low prices. Further, 30% of them indicated that they request recommendations from their councils. The remainder, 20% responded that they use experienced operators that they have been using for a long time and had no issues with them. Interestingly, 90% of the parents surveyed indicated that they trust coach operators and they do not check operators for compliant with the government safety regulations. This shows that parents who are involved in booking coaches for school trips were also unaware of the condition of coaches and drivers in respect of safety compliance history. The Headmasters were asked how they select their coach operators for a journey. As shown in the Figure 7, 47.9% of them responded, by stating that they use experienced operators that they have been using for a long time and never had any issues with them. A further 31% of them indicated that they sought recommendations from their County Councils for selecting coach operators. Finally, 9.9% indicated that they conduct an internet search to find operators with good reviews and low prices. These show that no pre-check safety criteria is applied for the identification of safe coach operators apart from seeking suggestions from the local Council [15]. To check how schools validate the safety of coaches and drivers chosen for school trips, they were asked, “how do you ensure that the coach operator is compliant with the government safety regulations?” In total 87.3% of the Headmasters replied that they do not perform checks on operators in respect of their compliance with the government safety regulations”. However, 5.6% indicated that they check the operators’ OCRS scores and driver(s)’ license points”, as shown in Figure 8. This clearly shows that schools are not aware of the safety status of coach operators, their coaches and drivers. Coach operators and drivers were asked, “in your experience in coach industry, have you ever been asked by schools to provide information on your OCRS scores?”. In total 87.3% coach operators and 83.5% of drivers indicated, “No, they had never were been asked”. However, 11.3%

coach operators and 15.2% of coach drivers indicated that they were rarely asked. Only, 1.4% of coach operators and 1.3% of drivers answered, “Yes, they had been asked for it all the time. Figure 9 and Figure 10 show the coach operators’ and drivers’ responses. The majority of the coach operators and drivers confirmed that schools never enquired information about their safety levels. This further compliments the responses of the parents and schools.

1. How do you ensure that your children are travelling safe on coach arranged by schools with respect to the safety compliance procedures of the coach operator, vehicle and the driver?

109 responses

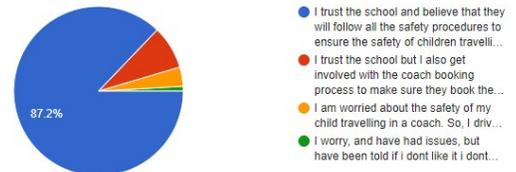


Fig. 6. Parents' responses

1. How do you select your coach operator for a school journey?

71 responses

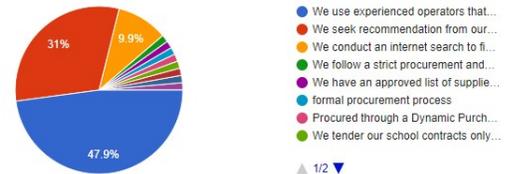


Fig. 7. Responses of the Headmasters to the first question

To further whether schools don't enquire about the safety details of vehicles, town council transport officers were questioned, “do you think schools check coach operator’s OCRS scores, vehicle safety checks and drivers’ license points before their children commencing a coach journey?”. In total 63.6% of county councils transport officers responded, “No they do not”. A further 10.6% answered “yes, but they rarely check them and 4.5% replied, “yes, they check it all the time”. This confirms that most of the schools do not check the safety level of coaches selected for school trips. In response to the question “do you think parents check coach operators’ OCRS scores, vehicle safety checks and drivers’ license points before the children commencing a coach journey?”. In total 85.1% of the officers said “No, they don't” and 1.5% of them said, “Yes, but they rarely check it”. Figure 11 and 12 show the responses of the transport officers. The results confirm that an inappropriate approach is used in booking coaches without checking compliance of coach companies. In addition, as it was mentioned in Section 3.3.1.2, the results prove deficiencies in the practice across the UK and the

knowledge gap, which exists amongst the stakeholders. This issue has not been addressed in the literature [20,41–43].

2. How do you ensure that a coach operator is compliant with the government safety regulations? (e.g. do you check operator's OCRS scores and driver license points)?

71 responses

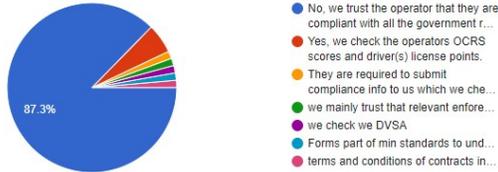


Fig. 8. Response of the Headmaster to the second question

1. In your experience in coach industry, have you ever been asked by schools to provide information on your OCRS scores, vehicle safety checks and drivers' license points?

71 responses

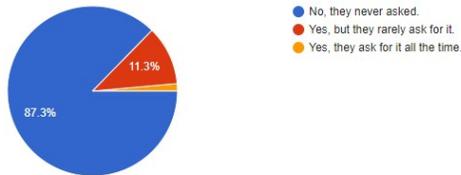


Fig.9. Questions and the response of coach operators

1. In your experience as a driver in coach industry, have you ever been asked by schools for information regarding your OCRS scores, vehicle safety checks and drivers' license points?

79 responses

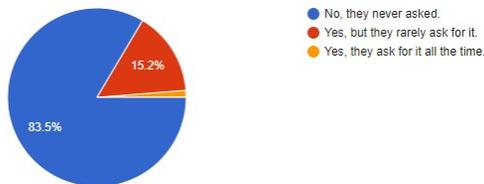


Fig. 10. Question and response of coach drivers

1. Do you think schools check coach operator's OCRS scores, vehicle safety checks and drivers' license points before their children commencing a coach journey?

66 responses

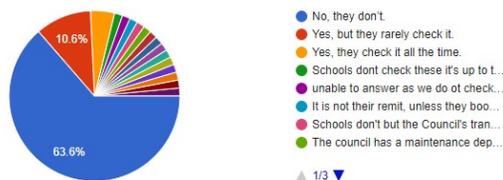


Fig. 11. Town Councils response 1

2. Do you think parents check coach operator's OCRS scores, vehicle safety checks and drivers' license points before their children commencing a coach journey?

67 responses

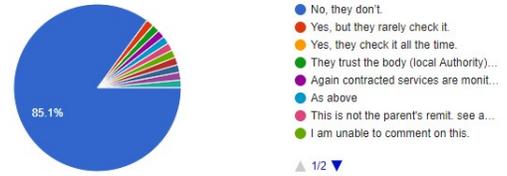


Fig. 12. Town Councils response 2

IV. DISCUSSION

When planning any activities, schools are required to demonstrate that they have conducted risk assessments for a daily home to school transport or the occasional trips which are considered as high-risk [15]. This is even more crucial if the transport is made through private coach hire, where a third-party operator is involved who does not normally operate under the school management. Typically, schools complete their risk assessments paperwork before each trip. However, this process does not require checking coach operators' OCRS scores, or safety compliance. Therefore, it is possible that coaches are used which are not -roadworthy or drivers which have many points on their license. The analysis of the survey (see Section 3.3) shows that critical issues still exist in school transport using hired coaches. The results also show that critical knowledge gap exist within the stakeholders.

The contributory factors for coach crashes mentioned by the stakeholders match the contributory factors reported by the government. The surveys also show it is unlikely that schools would check the coach operator's safety records for compliance with the government's procedures and regulations. With 48,000+ school trips made every year, it is important that schools are able to access and select the right coach operator their trips. However, it seems that schools do not have access to relevant databases or do not have sufficient knowledge about the coach industry. There is a misconception amongst the schools that if the coach operator has a licence to operate, they fully comply with all the government regulations. However, in reality, coach operators are not compliant all the time and the traffic commissioners' reports confirm this. It is evident that there is a serious knowledge gap present between the stakeholders. This should be given immediate attention before children lives are put at risk.

V. CONCLUSION

Safety of school transport is a critical issue which should be addressed quickly and effectively. Safety in hired coach transport by schools in the UK is a less investigated area, compared to the other modes of transport to school. The cause of coach crashes for the period 2005 and 2016 was analysed using the data obtained from the STATS19 database. The

traffic commissioner's reports for the period 2006 and 2017 were analysed. Two surveys were conducted to investigate safety in respect of hired coaches for school trips and critical issues were identified. The most significant safety issue identified is the stakeholders' unawareness of the driver and vehicle condition before and during school trips. When schools request coaches for field trips, the safety and operation conditions of vehicles and drivers are not checked by the schools. Requests are made based on trusting coach operators and their compliance with all the safety guidelines, regulations and standards. However, according to the traffic commissioner's reports, it is hard to assume that all the coach operators are complying with the safety guidelines and standards. This requires an urgent action before more children lives are put at risk. As our future work, a coach operator validation model will consist of information about coach operators (OCR scores, safety checks details etc.) and their drivers (licence points, resting hours etc.) with safety-critical guidelines will be developed. The model will not only validate the coach operators but also, provide safety recommendations to improve their fleet safety based on analysing their past incidents/records. The contribution of this paper is the analysis of the exploratory study along with the analysis of national crash statistics and the traffic commissioner reports.

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