



Transportation of cats and dogs on motorcycles/mopeds and its effect on animal welfare

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Independent project • 30 credits
Swedish University of Agricultural Sciences, SLU
Department of Applied Animal Science and Welfare
Animal Science – Master's programme
Uppsala 2026



Transportation of cats and dogs on motorcycles/mopeds and its effect on animal welfare

Transport av katter och hundar på motorcyklar/mopeder, välfärdsrelaterade aspekter

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Credits:	30 credits
Level:	Second cycle, A2E
Course title:	Independent project in Animal Science, A2E
Course code:	EX0870
Programme/education:	Animal Science – Master's programme
Course coordinating dept:	Department of Animal Breeding and Genetics
Place of publication:	Uppsala
Year of publication:	2026
Cover picture:	Matthias Carizzoni on Unsplash
Copyright:	Featured images are used with permission from the copyright owner.
Keywords:	transport, motorcycle, moped, animal welfare, attitude, safety, legislation

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Abstract

In recent years, the use of two-wheeled vehicles such as motorcycles and mopeds for animal transport has increased. It is well known that motorcycling involves several safety hazards compared with other modes of transportation, such as rider-related factors like alcohol use, behaviour, skill, use of protective gear and other risks related to road and weather conditions. Moreover, the transport offers economic and environmental benefits as it generates lower gas emissions, requires less fossil fuel and occupies less space. However, the rider's attitude plays a crucial role in whether it is performed in a safe manner or not. Riders transporting animals do not only have to comply to the road traffic legislation but also the animal welfare legislation. Neither European nor Swedish animal welfare legislation specifically addresses transport on two-wheeled vehicles. In addition, there is limited research on animal transport on two-wheeled vehicles, especially around its effect on animal welfare. The purpose of this study was to investigate riders' perceptions of animal responses, in connection to the transport, in order to identify potential animal welfare risks. In addition, the study aimed to investigate riders' attitudes to transporting animals on two-wheeled vehicles, and whether attitudes differed between riders who had transported an animal and riders who had not. It was also investigated how the Swedish animal welfare legislation could be improved to safeguard animal welfare.

The data collection was conducted by publishing an online survey on multiple channels, e.g. through two large organisations connected to motorcycles and social media, as well as in magazines, websites and newsletters for members within one of these organisations. Data were also collected through semi-structured interviews with four individuals possessing expertise in different motorcycle-related areas. According to the findings, most of the riders had not transported an animal themselves but had observed other riders transporting animals. Among respondents who had experience of transporting an animal, many riders reported transporting dogs on motorcycles using custom-/self-made solutions, transport cages, or with other alternatives. These respondents also stated that they considered factors such as weather conditions, cage size, and protective equipment. Overall, riders reported relatively few observable changes in the animal's response. However, the limited number of reported changes may reflect difficulties in detecting signs due to the manner of transport. Several riders did report that their animal appeared excited prior to transport. It was also found that the majority of these riders had a positive attitude toward transporting animals, whereas attitudes among riders without personal experience of transporting animals were more varied, although still predominantly positive. Several riders expressed concerns but stated that they would view the practice as either neutral or positive, provided that the animal's welfare was considered and the transport was conducted safely. Based on the findings, Swedish legislation and inspection procedures were examined to identify ways of safeguarding animal welfare during transport on motorcycles and mopeds. Regarding animal welfare legislation, it was suggested that motorcycles and mopeds should be specifically addressed to clarify how animals may be transported on these vehicles. Regarding enforcement and inspection procedures, it was suggested that a dedicated inspection for animal transport on two-wheeled vehicles should be implemented.

Keywords: transport, motorcycle, moped, animal welfare, attitude, safety, legislation

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Abbreviations

Abbreviation	Description
AWA	Animal Welfare Act (SFS 2018:1192)
AWO	Animal Welfare Ordinance (SFS 2019:66)
CABs	County Administrative Boards
dB	Decibels
EU	European Union
FB	Facebook
FEMA	Federation of European Motorcyclists' Associations
L5	Swedish Board of Agriculture's regulations and general advice (SJVFS 2019:7) on the transport of live animals, Saknr L5
L44	Swedish Board of Agriculture's regulations on official controls in the field of animal welfare (SJVFS 2022:13), Saknr L44
N	The final sample
RTDA	Road Traffic Definitions Act (SFS 2001:559)
RTO	Road Traffic Ordinance (SFS 1998:1276)
SLU	Swedish University of Agricultural Sciences
SMC	Sveriges MotorCyklister

1. Introduction

1.1 Background

Motorcycles and mopeds, which are two-wheeled vehicles, are commonly used as a means of transportation, either as a personal choice or as a necessity (Simpson et al. 2015). Although two-wheeled drivers must keep control of the vehicle, manage traction and maintain balance (Vlahogianni et al. 2012), compared to cars, two-wheeled vehicles in traffic are usually connected to greater risks (Simpson et al. 2015). Many riders perceive the mode of transport as enjoyable, practical, economically and environmentally advantageous, as they generate lower gas emissions, require less fossil fuel, occupy less space, meaning riders may therefore consider the benefits to outweigh the risks (Simpson et al. 2015). Risks do not only relate to inattentive four-wheeled drivers (Mannering & Grodsky 1995; Simpson et al. 2015), but also to rider-related factors such as reflex or physical limitations, lack of training, alcohol use or medication (Mannering & Grodsky 1995). Other risks are related to road and weather conditions, riders' skills, behaviour, and use of protective gear. Based on the number of vehicles used in traffic in Sweden in 2024, the mortality rate associated with two-wheeled vehicle use, including motorcycle and moped class one, was approximately four times higher than that associated with car use (Transport Analysis 2025; 2026). In addition, passengers may be a source of disturbance (Doherty et al. 1998), and the risks that may follow can depend on the rider's characteristics, experience and the specific transport situation (Preusser et al. 1998). For example, with many passengers, animals, or heavy loads, the rider can be forced to a forward position which makes it difficult to manoeuvre the motorcycle (Starkey 2016). In addition, the animal's position could also pose a safety and welfare risk.

Many people perceive motorcycle noise as more irritating than noise from other road vehicles (Lechner et al. 2020). Chang et al. (2012) found that a motorcycle idling could reach up to 70 decibels (dB) and around 84 dB at 60 km/hr, although acceleration and motorcycles above 125 cubic centimetres were excluded, which may produce different noise levels. Exceeding 100 dB can cause direct auditory harm whereas up to 85 dB could be somewhat safe (Turner et al. 2005). Dogs and cats can hear higher frequencies than humans (Barber et al. 2020; Tavernier et al. 2020), yet the auditory system has similarities between the species, and hearing thresholds may vary slightly among dog breeds (Shiu et al. 1997). In animals, noise exposure can cause hearing damage, behavioural and metabolic changes, elevated blood pressure, oxidative stress, stress hormones, and inflammation (Turner et al. 2005; Uran et al. 2012; Münzel et al. 2017; Morakinyo et al. 2019). However, current knowledge is limited regarding actual noise exposure and its

auditory effects on animals transported on motorcycles. In addition, motorcycle exhaust gas may cause respiratory allergic reactions in animals (Lee et al. 2008).

According to a Swedish insurance company, options that could work for transporting animals were a flatbed moped or in a sidecar with a seat belt, a caravan, a trailer with a transport cage, a transport cage or a special dog seat on the motorcycle (Trygg-Hansa 2025). Moreover, there are available transport options on the market (BikeNord w.y.; XLmoto w.y.; Customhoj 2026). Although animal transport on two-wheeled vehicles has become more visible in social media in recent years, there is limited research available on welfare aspects. This study therefore focuses on motorcyclists' and moped riders' attitudes towards transporting animals on motorcycles and mopeds, the possible animal welfare risks involved and how Swedish animal welfare legislation could be improved to better safeguard animal welfare. Related to this, the concept of animal welfare, the legislations and the official controls will be described below.

1.1.1 The concept of animal welfare

The concept of animal welfare is a complex matter which has long been debated, with different views regarding what is believed to be important for animals to have a good life (Fraser 2008). This study adopts the affective states approach, in which welfare is understood in terms of the individual's subjective experiences, including emotions and feelings perceived as positive or negative (Fraser 2008). Although the communication of animals and humans differs, animals communicate using species-specific signals expressed by their emotional states (Ujhelyi 1996) and these signals can be used to evaluate their welfare (Giangaspero & Turno 2024). Despite the multifactorial nature of animal welfare, proper welfare assessments are necessary to promote animal health and prevent unnecessary suffering (Giangaspero & Turno 2024). In addition, animal welfare scientists have worked toward defining objective and quantifiable parameters for assessing animal welfare (Ohl & van der Staay 2012). Earlier approaches to welfare were often based on the absence of injury or negative experiences (Ohl & van der Staay 2012), but today animal welfare is viewed as more than that (Miller et al. 2022).

1.1.2 Legislation and control

There is one from the European Union (EU) called Council Regulation (EC) No 1/2005 of 22 December 2004 on the protection of animals during transport and related operations. It highlights that, for cats and dogs, specific provisions will be set out in future proposals when the European Food Safety Authority has relevant opinions (Council Regulation 1/2005). There is an ongoing EU proposal called Proposal for a REGULATION OF THE EUROPEAN PARLIAMENT AND OF

THE COUNCIL on the protection of animals during transport and related operations. However, both the Council Regulation (1/2005) and the Proposal (2023/0448) apply to economic activities. Still EU regulations are fundamental for all EU member states (European Union w.y.).

Among Sweden's animal welfare legislation, the Animal Welfare Act (SFS 2018:1192), (AWA), the Animal Welfare Ordinance (SFS 2019:66), (AWO) and the Swedish Board of Agriculture's regulations and general advice (SJVFS 2019:7) on the transport of live animals, Saknr L5, (L5), apply to this subject. The purpose of the AWA is to ensure good animal welfare and promote good animal well-being and respect for animals (1 chap. 1 sec. AWA). Moreover, animals shall be treated well and shall be protected from unnecessary suffering and disease (2 chap. 1 sec. AWA). Animals shall be transported by means of transport that are suitable for the purpose and give every animal protection from heat and cold as well as from bumping, chafes and the like (2 chap. 13 sec. AWA). In addition, a person transporting animals shall attend to the animals and take the measures needed to ensure that the animals are not injured or caused suffering during loading, transport and unloading (2 chap. 13 sec. AWA). The transport of animals shall also be carried out in the manner described in L5. Moreover, Sweden has the Road Traffic Ordinance (SFS 1998:1276), (RTO), which contains provisions regarding road and off-road traffic (1 chap. 1 sec. RTO). Additionally, some terms used in the RTO and the L5 have the same meaning as those used, for example, in the Road Traffic Definitions Act (SFS 2001:559), (RTDA). Furthermore, some of the transport options that Trygg-Hansa (2025) stated as functional for animal transport may be regarded as cargo. In such cases, the cargo must meet certain criteria and be transported in accordance with the RTO. Different authorities may control a vehicle's cargo depending on its purpose and the circumstances (Vehicles Act 2002:574).

Regarding official controls concerning animals, an EU regulation is applicable to ensure compliance with the provisions on animal welfare and animal health (Regulation (EU) 2017/625 of the European Parliament and of the Council of 15 March 2017 on official controls and other official activities performed to ensure the application of food and feed law, rules on animal health and welfare, plant health and plant protection products). Each country must also apply its own national legislation (N-Lex w.y.; 2024). The official animal welfare inspections in Sweden shall also be carried out in the manner described in the Swedish Board of Agriculture's regulations on official controls in the field of animal welfare (SJVFS 2022:13), Saknr L44, (L44). For Sweden, the County Administrative Boards (CABs) are responsible for the official animal welfare inspections (8 chap. 1 sec. AWA). The CAB, after an animal welfare inspection, prepares a report that contain, e.g. the assessment and any corrective measures required (10 sec. L44).

2. Purpose

The aim was to identify possible risk factors for animals transported on motorcycles and mopeds, as well as to investigate motorcyclists' and moped riders' perceptions of their animals' welfare during transport. Another aim was to investigate how Swedish animal welfare legislation could be improved to safeguard animal welfare.

2.1 Research questions

- What are the possible welfare risks for the animals (cats and dogs) when transported on a motorcycle or moped?
- What are the attitudes of motorcycle and moped riders in Sweden and internationally towards the transport of cats and dogs on motorcycles and mopeds?
- How can the Swedish animal welfare legislation be improved to better safeguard the welfare of cats and dogs transported on motorcycles or mopeds?

3. Material and method

3.1 Online survey

The first phase included an English online survey, from which the results served as a foundation for the study (see appendix 1). The target group was motorcyclists and moped riders above the age of 18 years. The survey was created via Netigate, a web-based survey generator through the Swedish University of Agricultural Sciences (SLU) which allows users to design surveys for investigations and collect data. The survey was available between 2025-06-16 and 2025-10-16.

One method of distribution was through eight pre-selected groups on the social media platform Facebook (FB), which were identified using the search term “Motorcycle EU (Public)”. The groups were called *Motorcyclist Map*, *All Riders & Friends*, *MOTORBIKE EUROPE*, *Motorcycle Enthusiasts UK*, *New motorcycle riders*, *Motorcycle World Travellers - Stories and People*, *Motorcycle lovers* and *Motorcycle Travel*. The author posted a survey link in each group together with information about the purpose of the study, her connection to motorcycles, and the estimated time required to complete the survey. Information regarding the handling of survey answers, as well as the terms and consent procedures, was provided on the first page of the survey. Three survey reminders were posted, adjusted to respondent activity, on 2025-07-09, 2025-08-15 and 2025-09-22.

The other distribution method involved multiple channels in which the survey was published in. It was published on the website, FB and LinkedIn of Sveriges MotorCyklister (SMC), a Swedish non-profit organisation for motorcyclists (Sveriges MotorCyklister w.y.b). In addition, the survey was also sent out to SMC’s members through its email newsletter and magazine called “MC-Folket”, in both print and digital formats. It was also published on the FB of Federation of European Motorcyclists’ Associations (FEMA), a non-Swedish umbrella organisation for motorcyclists (The Federation of European Motorcyclists’ Associations 2026). In addition, the survey was published on SMC’s website, FB, and LinkedIn, as well as on FEMA’s FB, on 2025-06-26. Thereafter, survey reminders were distributed through SMC’s newsletter and magazine on 2025-08-27 and through SMC’s FB on 2025-09-12. Depending on the distribution channel, the survey information was published in either English or Swedish. Further details can be found in Appendix 2.

3.1.1 Survey design

The survey was designed in the web-based survey platform Netigate. Information about personal data processing at SLU was provided on the first page of the

survey and corresponded to the text presented in Appendix 3. The questions in the survey were in English and considered the rider's experiences, perceptions and attitudes to transporting animals on two-wheeled vehicles, regardless of whether they did it themselves or not. Questions were developed based on existing literature, the author's own experience and discussions among the author and supervisors. The survey included demographics and background of the rider (e.g. gender, age, country of origin, number of years they had been driving a two-wheeled vehicle and if they had ever transported an animal) (see appendix 1, specifically questions 1 to 5). Thereafter, the survey was divided into two tracks based on whether the rider had transported an animal or not.

Track one (had transported an animal themselves) included questions about for example the type of vehicle and animal species, means of transport and animal training. Additional questions involved for example the longest time they had travelled with the animal, considerations made and the use of protective gear. Also, the respondents were asked how they perceived the animal's responses before, during and after the drive (see appendix 1, specifically questions 6, 7, 10, 11, 13, 15, 16 and 19). Track two (had not transported an animal themselves) included questions about their views on animal transport on two-wheeled vehicles in relation to animal welfare, road safety and whether they had observed others transporting an animal (see appendix 1, specifically questions 8, 12, 14 and 20). Across both tracks, the survey included questions addressing the respondents' perspectives on animal welfare, road safety, as well as their personal perspective, and respondents assessed their own general knowledge on animal welfare and animal welfare legislation (see appendix 1, specifically questions 9, 17, 18 and 21).

In total, track one contained 10 questions, track two contained 4 questions and across both tracks, the survey contained 12 questions (including follow-up questions in questions 9 and 19). All of the questions were mandatory apart from the last question, which was voluntary and addressed to both tracks. In one question, there was a possibility to answer in free text under "*Other animal*", in one other question "*Custom/self-made solution or other alternative*" and in one other question "*Other alternative*". Thereafter, there were two other questions with a possibility to answer in free text under "*Explain why*" and in four other questions "*Other thoughts*". Four other questions included a Likert-scale answer alternative. Other questions could only be answered with the alternatives presented. In addition, the survey included the following definition: Animal welfare means the animal's subjective experience of the situation. Further details can be found in Appendix 1.

3.1.2 Processing of survey responses

Raw data was exported from Netigate to Microsoft Excel. The survey response data were compiled, and percentages were rounded to the nearest whole number. The free-text responses were reviewed several times in a Microsoft Word document to create an overview of the responses. Insights from these responses contributed to the development of the interview questions.

Survey response data excluded were from respondents who transported deceased animals, did not complete the survey, or did not provide consent for their responses to be included in the study. On questions 1, 2, 4, 5, 8, 13, 17 and 18 respondents were instructed not to choose more than one answer alternative, and respondents that selected more than one or answered questions not related to their assigned track were considered inconsistent. Inconsistent answers were checked against each respondent's survey answers to determine which of the answers were valid and which should be excluded. For example, respondents' reported ages were compared with their answers regarding the number of years they had driven a two-wheeled vehicle. If the number of years exceeded the respondent's stated age, the response was considered inconsistent.

3.2 Semi-structured interviews

The second phase, consisting of semi-structured interviews, was conducted with four people selected for their different expertise related to motorcycles. Questions were developed based on the free-text responses in the survey, and discussions among the author and the main supervisor. The interviewees were selected via contacts from SMC, who helped identify individuals with relevant expertise. The interviews were conducted in February on the following dates: 2026-02-04, 2026-02-06 and 2026-02-12. Interviewees were allowed to choose whether they preferred to be interviewed physically or digitally. The digital interviews were conducted via Microsoft Teams, while the physical interviews were conducted at the interviewees' locations. First, interviewees were asked which language, English or Swedish, they preferred and a consent form was provided by the author (see appendix 4, English version). The consent form included information about personal data processing and the purpose of the interview, which was also explained verbally by the author (see appendix 5, English version). After interviewees provided their consent, the author started the voice-recording application "Windows Röstinspelaren" and began the interview (see appendix 6, English version).

3.2.1 Interview design

The questions used for the interviews were designed in a Word document (see appendix 6, English version). The interview included a few selected questions from the online survey, but most of the questions were developed based on the survey's free-text responses. Moreover, the interview format allowed for an opportunity to explore topics in areas of particular expertise in greater detail (e.g. a representative of a non-profit organisation on motorcycle traffic policy, of a motorcycle club founder, of an organisation for motorcycle suppliers, and of a traffic teacher). Original questions from the survey were related to interviewees' experiences of transporting an animal and their attitudes toward animal transport on two-wheeled vehicles (see appendix 6, English version). Questions developed based on the free-text responses addressed topics such as safety, statistical knowledge, legislation, motorcycle manufacturing, the transport method's limitations and potential, future research needs, and attitudes toward animal transport (see appendix 6, English version). The interview consisted of 16 main questions, and follow-up questions were asked when needed.

3.2.2 Processing of interview responses

After the interviews were conducted, the recorded voice files were saved as M4A-files and processed in a separate Word document. The files were uploaded to Word's transcription function "Transkribera" which produced a written transcript of the recorded voice files. The written version of each interview was manually compared with the voice file to ensure an accurate representation of each interviewee's response. Inaccuracies, such as altered phrases and omitted passages, were identified and corrected. Names and other information that could reveal the identities of the interviewees were removed, as were identifying statements made by the author during the interviews. For each interview question, a summary was developed based on the interviewees' answers, and a direct quotation was included to support the summary and provide illustrative evidence. All interviews were conducted in Swedish; therefore, the summaries and direct quotes were manually translated into English as closely as possible to the interviewee's original wording. For the quotations, repeated words, off-topic statements, and unclear passages were replaced with ("..."). Words not explicitly stated by the interviewee, but inferred from the context, were added within square brackets ("[]").

4. Results

4.1 Survey responses

Eighty-two percent of the 852 respondents who entered the survey completed it. The point at which respondents stopped answering varied, although the largest proportion stopped at question 8. Five complete responses were excluded because four motorcyclists/moped riders had answered “No” to submitting their responses, and another answered that they had transported deceased animals only. Consequently, the final sample (N) consisted of 697 respondents.

4.1.1 The respondents

Among the motorcyclists/moped riders who responded to the survey (N = 697), the majority of these were males (78%, n = 543), while 22% (n = 151) were females, and 0% (n = 3) identified themselves as other than male and female.

Of the respondents, most belonged to the age group of 51 - 60 years (fig. 1).

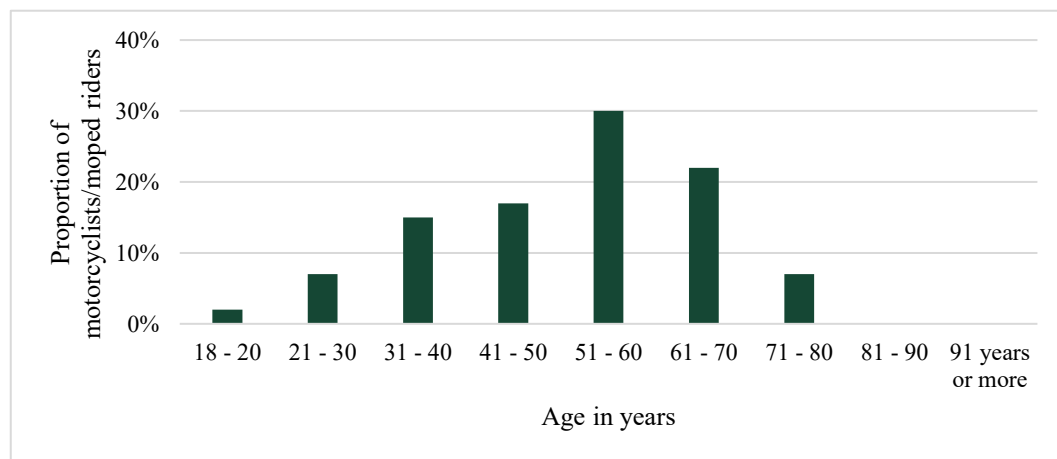


Figure 1. Distribution of the respondents according to age category (N = 697).

Most respondents lived in Sweden (n = 663), followed by living in the United Kingdom (n = 6), Norway (n = 5), Finland (n = 3), Belgium, France, Portugal, and the Netherlands (n = 2; each), and Austria, Croatia, Cyprus, Denmark, Germany, Greece, Malta, the Philippines, Spain, Tanzania, the United States of America, and Uruguay (n = 1; each).

Many respondents had driven a motorcycle/moped between 0 - 10 years, and 33% (n = 226) had driven for more than 30 years (fig. 2).

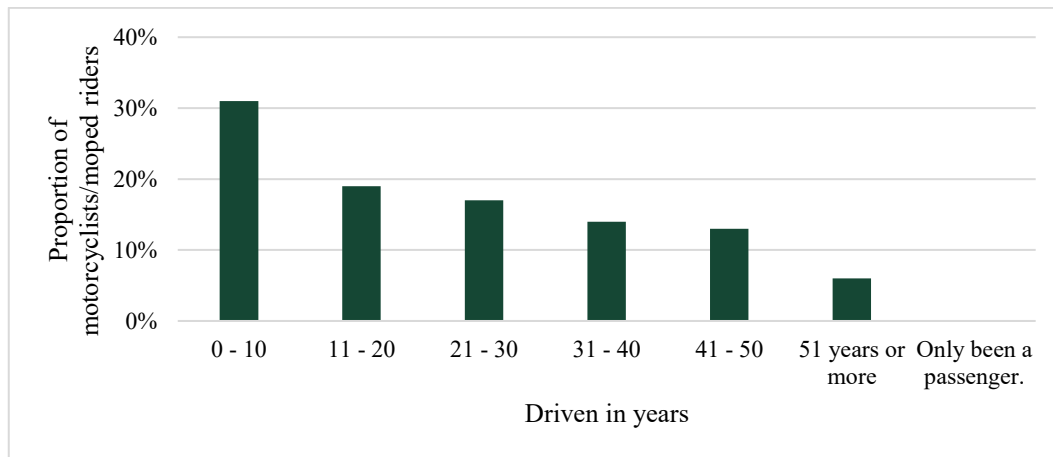


Figure 2. Distribution of how long the respondents had driven a motorcycle/moped ($N = 697$).

The majority of respondents had not transported an animal on their motorcycle/moped themselves (80%, $n = 560$), while 20% ($n = 137$) had done so.

Among respondents who had experience of transporting an animal themselves ($n = 137$), the majority of these had used a motorcycle (93%, $n = 128$), while 16% ($n = 22$) had used a moped. Respondents could select multiple answer alternatives.

Regarding the type of animal transported, the majority of respondents reported that they had transported a dog (fig. 3). Five respondents reported “Other animal” and submitted a free-text response. Ferret, rabbit, insect and reptile were mentioned.

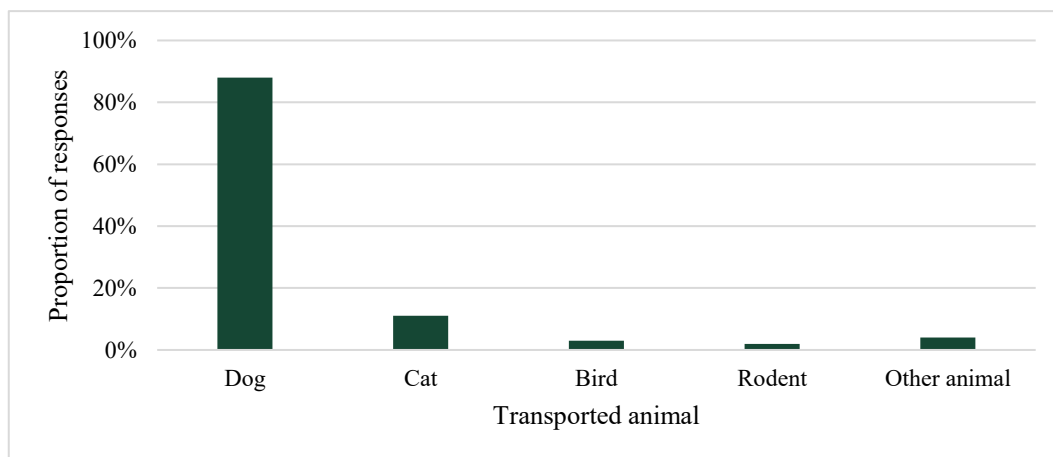


Figure 3. Distribution of what kind of animal had been transported among the respondents who had experience of transporting an animal ($n = 137$). Respondents could select multiple answer alternatives.

Among respondents who had no experience of transporting an animal themselves (n = 560), the majority of these had seen others drive with an animal (78%, n = 435), while 19% (n = 105) had not, and 3% (n = 20) were unsure.

4.1.2 Motorcyclists'/moped riders' management of animal transport and how it is perceived

Among respondents who had experience of transporting an animal themselves (n = 137), most had used custom-/self-made solutions or other alternatives, followed by commercial transport cages (fig. 4).

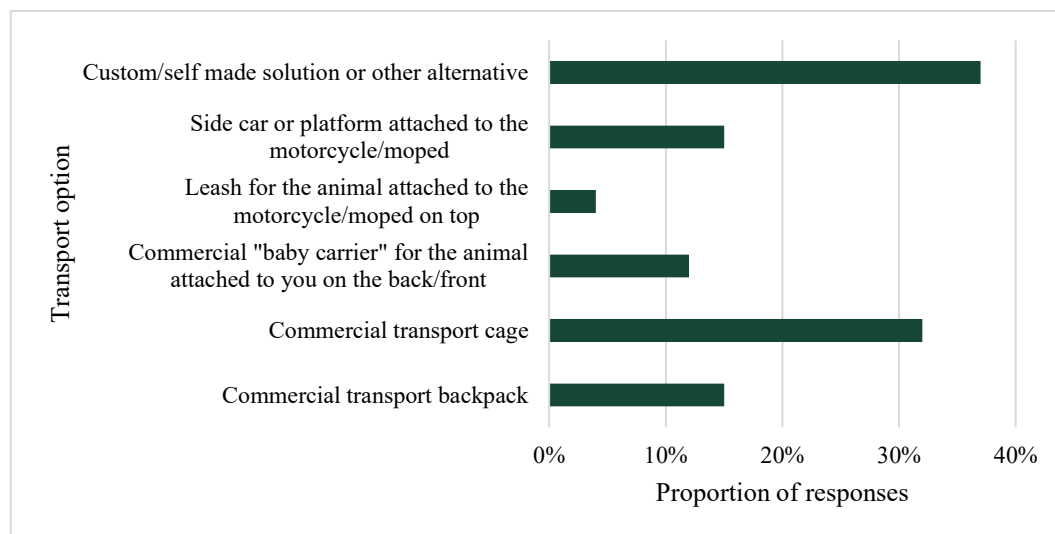


Figure 4. Distribution of how the respondents had transported the animal, answered by respondents with experience of transporting an animal (n = 137). Respondents could select multiple answer alternatives.

Respondents choosing “*Custom/self-made solution or other alternative*” had the opportunity to give more details via the free-text response, which around half of the respondents did (n = 57). These respondents mentioned, e.g. a commercial tank bag, putting the animal inside their jacket, using a trailer, a regular backpack, placing the animal on the passenger seat, or attaching it to the rider. These respondents also brought up, e.g. a modified top box or a modified commercial transport cage, a home-made trailer, or mentioned the same as one of the available answer alternatives in the list.

Nearly half of the respondents answered that they had not trained the animal to be on the vehicle, while almost as many reported that they had trained in a stepwise manner (fig. 5).

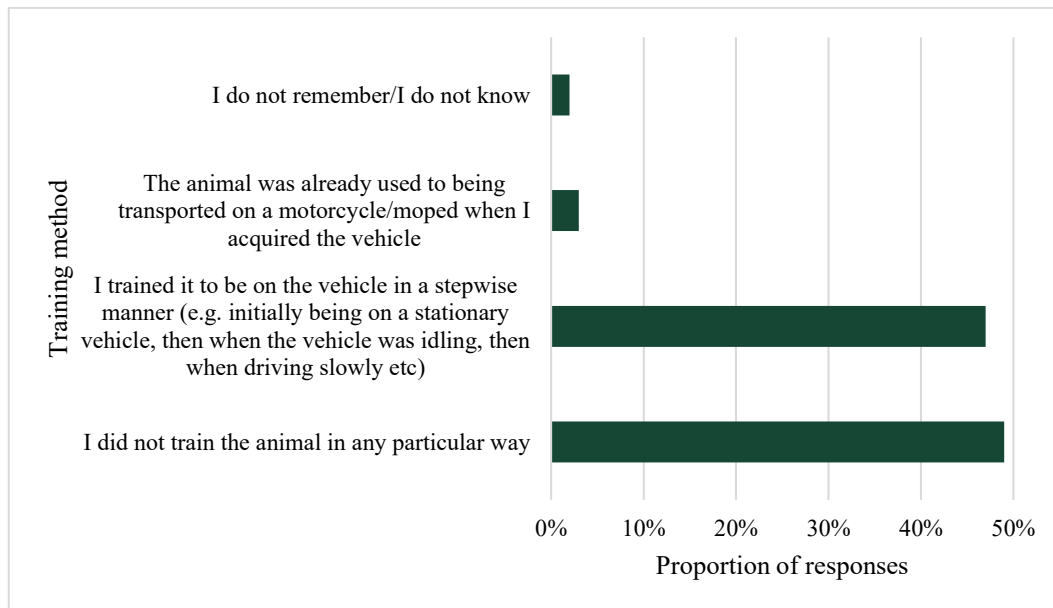


Figure 5. Distribution of respondents regarding how they had trained the animal to be transported on a motorcycle/moped, answered by respondents who had experience of transporting an animal ($n = 137$). Respondents could select multiple answer alternatives.

Most respondents stated that they travelled for a maximum of two hours with an animal (74%, $n = 101$), whereas 2% ($n = 3$) had travelled for ten hours or more (fig. 6).

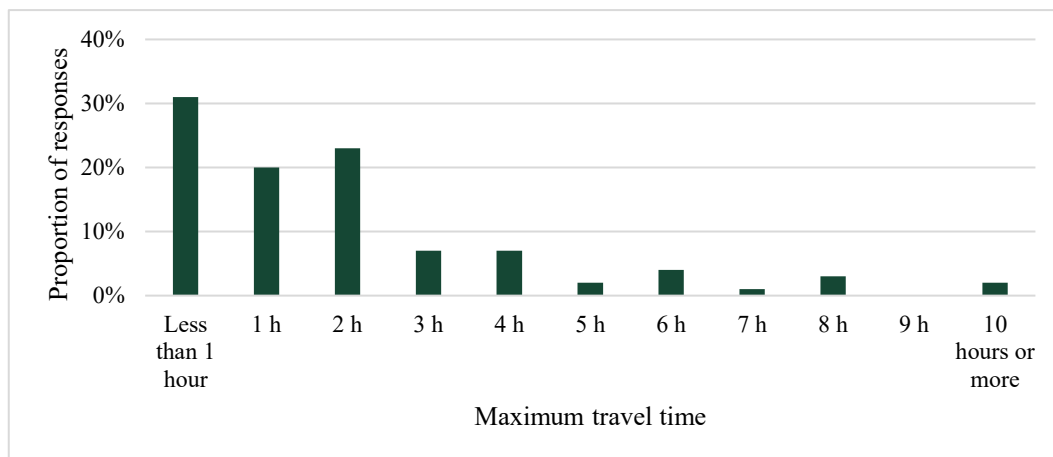


Figure 6. Distribution of respondents regarding the maximum travel time that they had transported the animal, answered by respondents who had experience of transporting an animal ($n = 137$).

The majority of the respondents took precautions for the weather condition, used protective gear, and considered the size of the transportation cage/area (fig. 7).

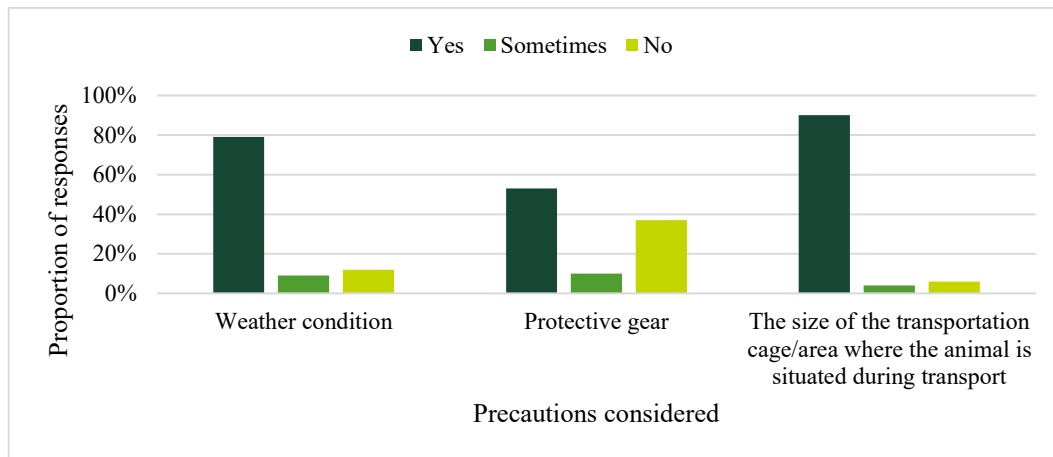


Figure 7. Distribution of what precautions the respondents had considered for the animal, answered by respondents who had experience of transporting an animal ($n = 137$).

Regarding the use of protective gear, about half of the respondents used a transport cage, followed by eye goggles, and another alternative (fig. 8).

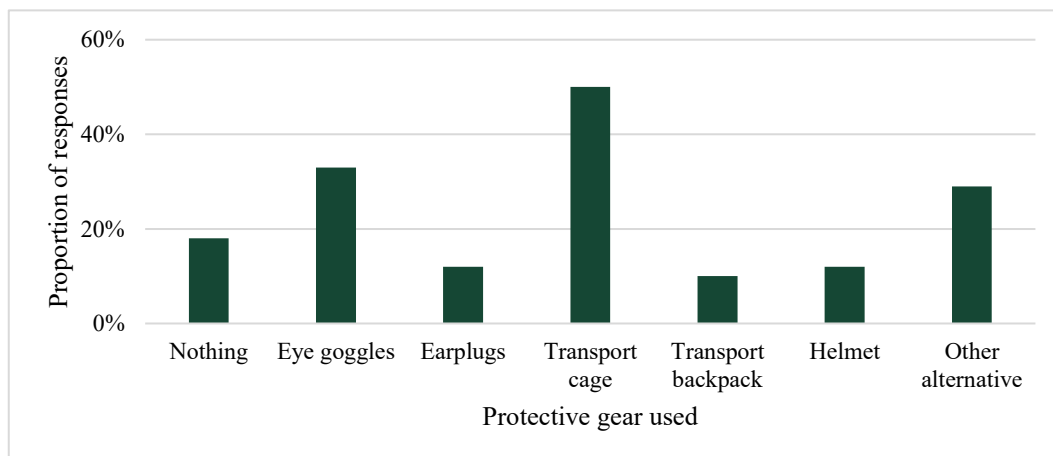


Figure 8. Distribution of what kind of protective gear the respondents provided for the animal, answered by respondents who had experience of transporting an animal ($n = 137$). Respondents could select multiple answer alternatives.

Respondents choosing “Other alternative” had the opportunity to give more details via the free-text response, which around a third of the respondents did ($n = 40$). These respondents mentioned, e.g. a harness or a seat belt in connection with another transport option like a transport cage or sidecar, blankets as a soft surface, wind protection, a hood to prevent the ears from flopping, extra clothing, or the riders’ own jacket as a baby holder. These respondents also brought up, e.g. a sidecar, tank bag, baby seat, or no answer.

The majority reported “No noticeable change” for all of the listed animal welfare or stress responses before, during and after the ride (fig. 9). Of those who did

notice changes in the animal's response, most respondents reported increased "Breathing rate" and "Vocalizations" when they approached the vehicle, whereas "Attempts to escape" was reported as decreased. They also reported that they did not know whether "Hearing loss" and "Signs of nausea" changed, including "Size of the pupils" in connection to the transport. They also reported "Thirst" as increased immediately after the drive.

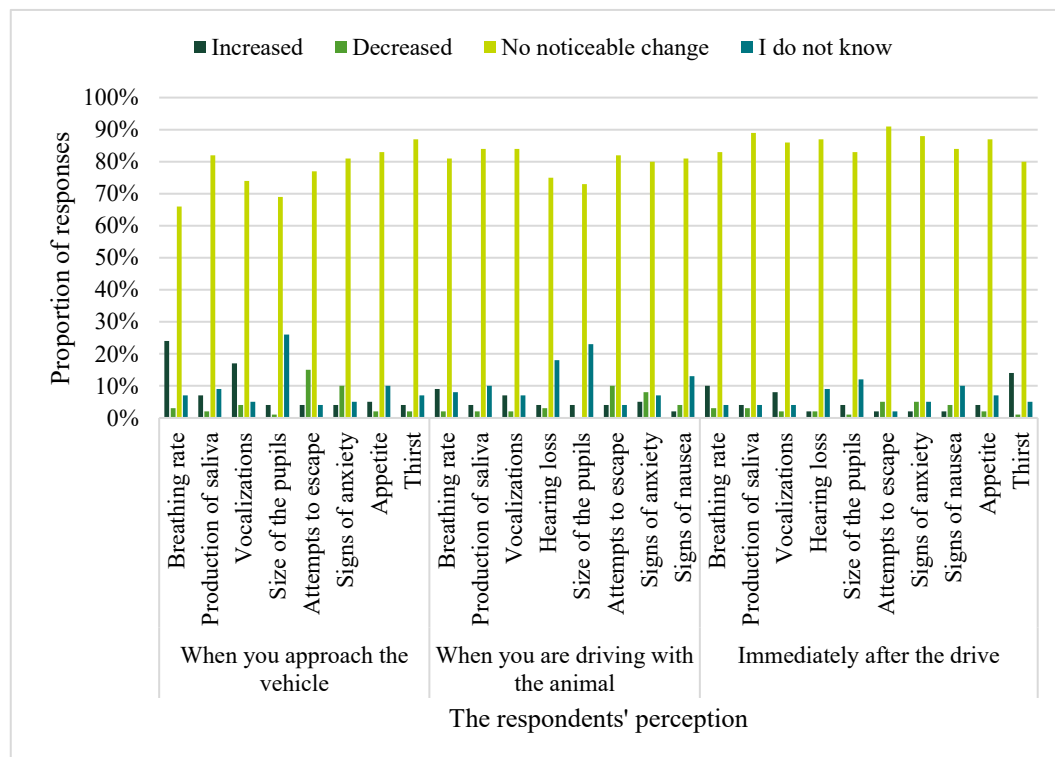


Figure 9. Compiled answers of the respondents' perceptions of changes in the animal's responses before, during and after the drive, answered by respondents who had experience of transporting an animal ($n = 137$).

Among respondents who had no experience of transporting an animal themselves ($n = 560$), most felt that other riders took the animal's welfare into consideration (59%, $n = 330$), while 14% ($n = 80$) did not and 28% ($n = 154$) were unsure. Respondents could select multiple answer alternatives.

Regarding whether a four-wheeled vehicle was considered an appropriate mode of transportation of animals, respondents were almost equally 'against' (40%, $n = 224$) as 'for' (39%, $n = 221$) motorcycles/mopeds being used for animal transport, and 18% ($n = 102$) were unsure. Respondents could select multiple answer alternatives.

4.1.3 Attitudes towards transporting cats and dogs on motorcycles and mopeds among motorcyclists and moped riders

Among the respondents who had experience of transporting an animal themselves ($n = 137$), 121 was from Sweden and 16 from other countries. Among the respondents who had no experience ($n = 560$), 542 was from Sweden and 18 from other countries. The intended division of respondents between countries, in this section, aimed to investigate whether respondents' attitudes differed between countries were not possible due to the numbers from other countries were small. Regardless of whether they had transported an animal or not, most respondents viewed that the animal would experience the two-wheeled vehicle transport as positive, mostly selecting "*They enjoy the transportation*" (fig. 10). In contrast, respondents with no experience of transporting an animal expressed more varied views than those with experience.

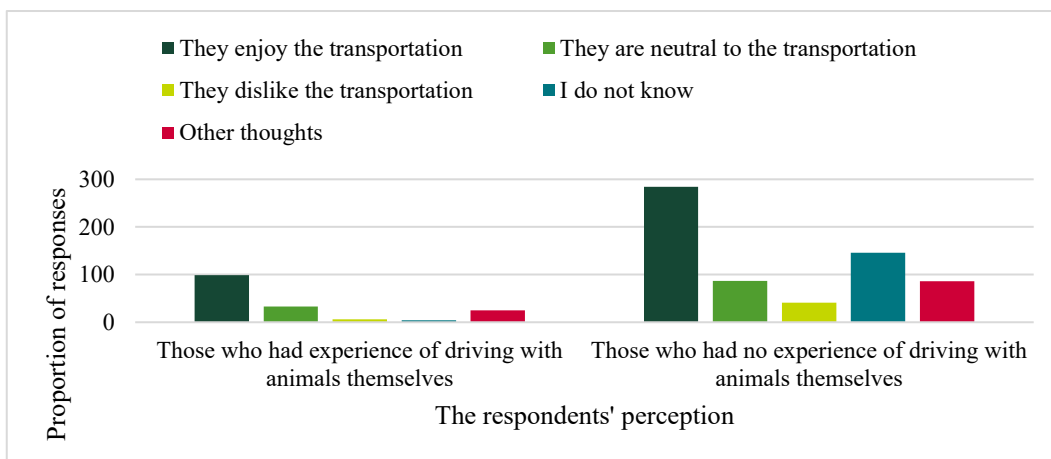


Figure 10. Distribution of the respondents' perceptions of how the animal views the transport on motorcycles/mopeds, answered by respondents who had experience of transporting an animal ($n = 137$) and by respondents without experience ($n = 560$). Respondents could select multiple answer alternatives.

Regarding other road users' perspectives, regardless of whether they had transported an animal or not, most respondents believed that other road users would view animal transport as positive, mostly selecting "*They find it adorable*" (fig. 11). In contrast, respondents with no experience of transporting an animal expressed more varied views than those with experience.

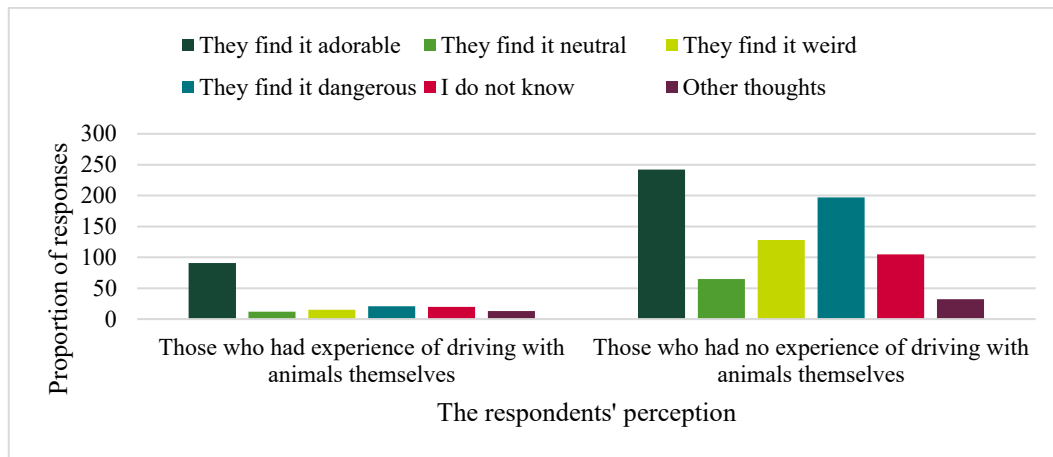


Figure 11. Distribution of the respondents' perceptions of how other road users view the animal transport on motorcycles/mopeds, answered by respondents who had experience of transporting an animal ($n = 137$) and by respondents without experience ($n = 560$). Respondents could select multiple answer alternatives.

Regarding personal perspectives, regardless of whether they had transported an animal or not, most of the respondents answered “Adorable” (fig. 12). In contrast, respondents with no experience of transporting an animal expressed more varied views than those with experience.

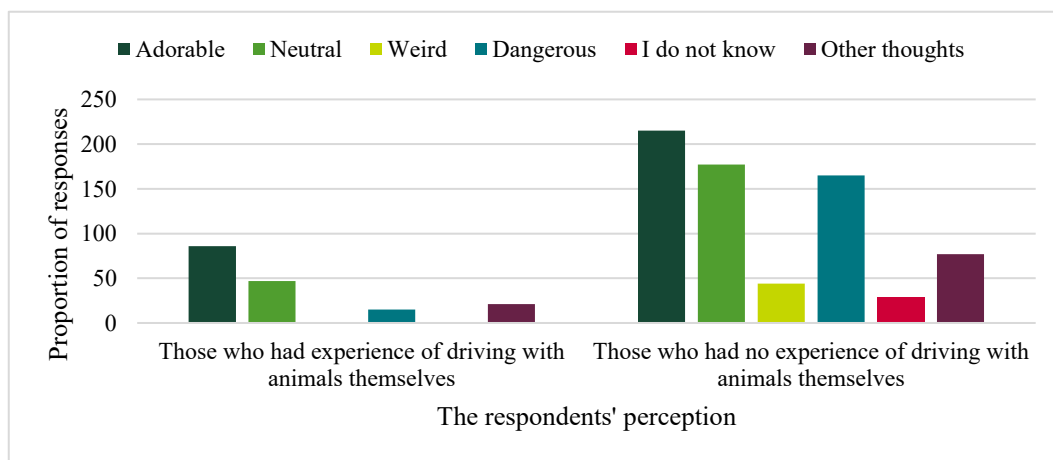


Figure 12. Distribution of the respondents' perceptions of how they view the animal transport on motorcycles/mopeds, answered by respondents who had experience of transporting an animal ($n = 137$) and by respondents without experience ($n = 560$). Respondents could select multiple answer alternatives.

Regarding safety perspectives, regardless of whether they had transported an animal or not, the majority answered that it “Depends on how the animal is transported” (fig. 13). In contrast, respondents with no experience of transporting an animal expressed more varied views than those with experience.

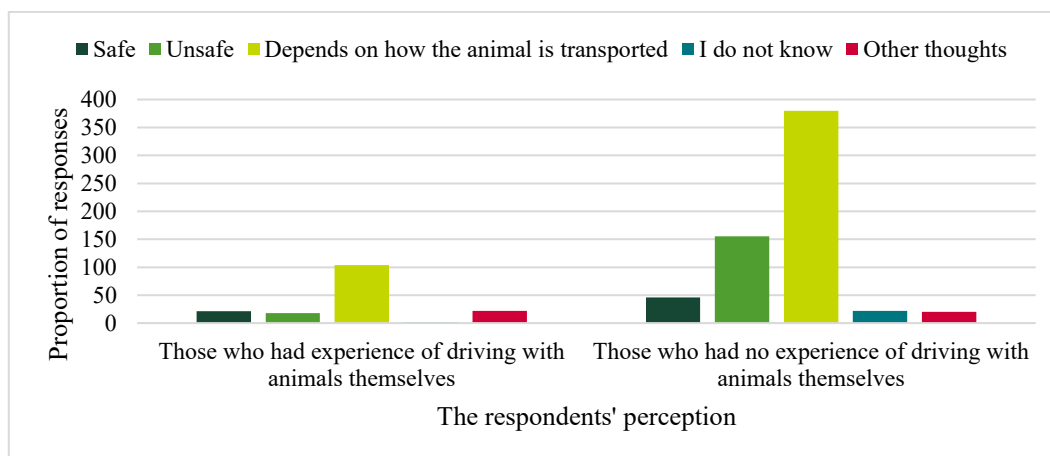


Figure 13. Distribution of the respondents' perceptions of their safety perspective on animal transport on motorcycles/mopeds, answered by respondents who had experience of transporting an animal (n = 137) and by respondents without experience (n = 560). Respondents could select multiple answer alternatives.

A separate, voluntary question at the end of the survey allowed respondents to leave additional comments related to the subject investigated, and 108 respondents did so. The respondents who had experience of transporting an animal themselves (n = 54) mentioned, e.g. that their animal enjoys going on the ride, to follow their owner, or that their animal gets excited when they see their owner getting dressed for the drive, see their own transport option, when they hear or see the owner coming home with the bike. Some clarified that they take breaks regularly, few included water, food or walks, and some had seen the animal be calm, look around or lie down during the drive. Few mentioned that their animal prefer bikes over cars as cars make them nervous or anxious, explained the animal's transport option, had been questioned by others, does not recommend the transport unless an emergency, or would like more tested options. The respondents who had no experience of transporting an animal themselves (n = 54) mentioned, e.g. that they are positive towards the animal transport as long as it is done in a safe way with right equipment or that the animal should not be forced. Some mentioned that they would love to bring their own animal but the lack of transport options was an obstacle, or how the animal is treated by the rider dictates how they will perceive the transport. Few mentioned that they wished for more commercial transport alternatives available or guidelines, that animals do not belong on a motorcycle/moped, concerns for the animal's safety or that it is better to be safe than sorry.

4.1.4 Respondents' knowledge of animal welfare and legislation

Most of the respondents answered that they knew “A lot” about animal welfare, whereas a smaller proportion answered the same for legislation (fig. 14).

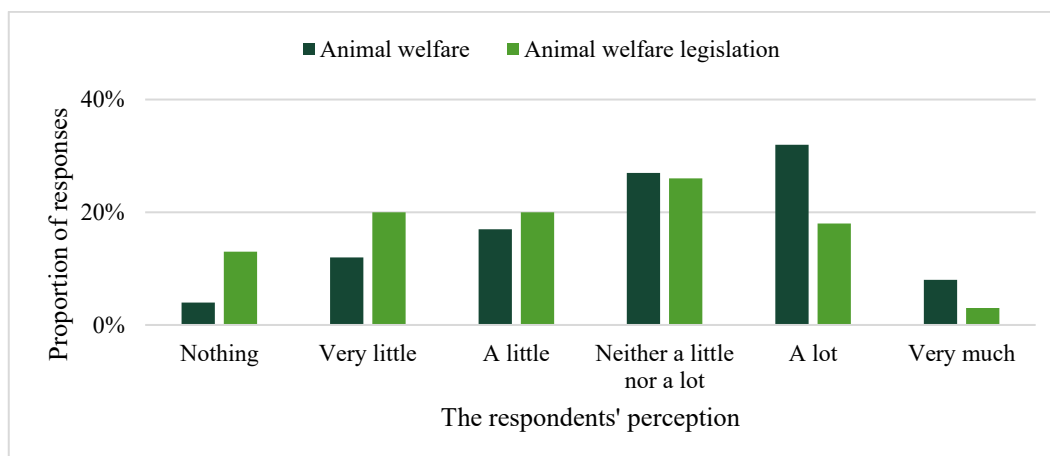


Figure 14. Compiled answers of the respondents' own perceived knowledge on animal welfare and animal welfare legislation, answered by respondents who had experience of transporting an animal ($n = 137$) and by respondents without experience ($n = 560$).

4.2 Interview responses

Four out of five invited interviewees consented to participate in an interview with the author. The information transcribed from the interview with the interviewees reflects their thoughts, experiences, knowledge and views on possible challenges. Three interviewees had seen others drive with an animal on a motorcycle/moped and two had transported an animal on a motorcycle/moped themselves (for all direct quotations, see appendix 7, questions 1 and 2).

4.2.1 Motorcyclists'/moped riders' management of animal transport and how it is perceived

The interviewees expressed that transporting an animal on a motorcycle or moped may not be appropriate for the animal, partly due to the limited availability of transport options on the market. Others emphasized that the rider's competence, behaviour, and awareness of the animal are key factors. One highlighted the importance of training, while another pointed out that two-wheeled vehicles may be necessary for people who cannot afford a car (see appendix 7, question 4).

"Appropriate, I probably wouldn't say it's. ... But ... there is a need for it, because not everyone can afford a car. A motorcycle is cheaper to transport yourself with ... the supply, I think, is pretty bad generally for different types of animals." (Interviewee D¹).

When reflecting on different transport options, interviewees generally preferred options that had been tested and designed for animals. Interviewees also noted that the transport option itself may influence the driving characteristics of the vehicle (see appendix 7, question 9).

¹ Personal Communication, 2026-02-12, A representative of a traffic teacher

“It like [should] be as good as possible for the animal but also as good as [possible for] me who will drive the motorcycle, so that it doesn't start like flutter around and like bounce and stuff, since I only have two wheels, it must be ... balanced and like follow the motorcycle.” (Interviewee D).

Two interviewees believed that riders' limited use of additional protective gear for their animals may reflect a lack of knowledge or a limited supply of suitable alternatives. One interviewee believed that people might be wise enough to solve whatever problem they face on their own (see appendix 7, question 11).

“... it would be better if there were well-proven methods than for people ... to take chances and believe. But at the same time, I also think that ... you shouldn't forget that animal owners want their animal the absolute best, as a rule, so that you're probably very, very aware of how you drive and choose the opportunity and ... the road and other things, based on that, to create as little discomfort as possible. But I think that this is so unusual that the knowledge probably isn't really there ...” (Interviewee A²).

None of the interviewees knew whether there were any statistics on accidents where the rider had transported an animal. Two believed such statistics could be useful, whereas the other two did not (see appendix 7, question 12).

“No. I can give you a tip. ... the Swedish Transport Agency has the national traffic injury register. ... It's called Strada. ... I don't think so. ... If the bureaucrats think there could be reasons, then they do.” (Interviewee C³).

It was also not known whether any motorcycles/mopeds, specifically manufactured with consideration for transporting animals, existed. One pointed out that electric vehicles might be a better option, considering the sound levels, and another interviewee suggested that an increased demand would be needed for such vehicles to be manufactured (see appendix 7, question 13).

“That I can't imagine. That I don't think exists.” (Interviewee B⁴).

The interviewees mentioned that common sense, guidelines, further research or more available transport options for animal transport on two-wheeled vehicles would be good. These measures could help improve the animal's experience or to be able to bring the animal along on the vehicle (see appendix 7, question 10).

“... those who have animals and transport them, I think or I want to believe it anyway, that they at least try to do like their best ... should maybe be some form of ... Make sure that these criteria, like the points, that you try to fulfil them like for best animal experience sort of [guideline].” (Interviewee D).

² Personal Communication, 2026-02-04, A representative of a non-profit organisation on motorcycle traffic policy

³ Personal Communication, 2026-02-06, A representative of an organisation for motorcycle suppliers

⁴ Personal Communication, 2026-02-06, A representative of a motorcycle club founder

4.2.2 Attitudes towards transporting cats and dogs on motorcycles and mopeds among motorcyclists and moped riders

The safety was considered as the most important factor among the interviewees. Two interviewees also mentioned the vehicle type, the animal's size, the transport option used for the animal, and the animal's experience as factors relevant to consider when transporting an animal on a two-wheeled vehicle. One interviewee highlighted that riders should meet the provisions and have responsibility (see appendix 7, question 3).

"It's partly about safety for the rider, that is that the transport of the animal, I think, should not involve risk for the rider. ... next aspect then, that the transport of the animal should not involve unnecessary suffering for the animal in a possible incident. ... I don't think, today, that there are any really good solutions where you can transport animals in a way that is safe, the motorcycle ... is a vehicle where you are, to be considered as, quite unprotected ..." (Interviewee A).

The interviewees expressed mixed feelings towards animal transport on motorcycles and mopeds, and these views could be either positive or negative depending on how the animal was transported and the overall safety (see appendix 7, question 5).

"... I don't feel anything ... Sometimes a bit nice to see ... but at the same time if there's a big problem with accidents ... then maybe ... I, myself, wouldn't probably dare do it, because things can happen with animals that get scared ..." (Interviewee C).

The interviewees stated that it was important for riders to assess the individual animal's response to the transport in order to determine whether the animal perceives the transport as positive or negative. One interviewee mentioned that training can influence the animal's experience (see appendix 7, question 6).

"... I think that you, to the greatest extent possible, should base it from the individual. I think that it's not natural, neither for dogs nor cats ... we as animal owners are obligated to ensure that our animals are not harmed." (Interviewee A).

Two interviewees believed that a non-motorcyclist could be more negative towards animal transport, due to ignorance or perceiving two-wheeled vehicles as dangerous which could affect their view on what is considered safe. One noted that people may have different opinions, and another suggested that a person's first impression may influence their acceptance of such transport (see appendix 7, question 7).

"Those who have chosen to take a motorcycle license, they know more about it, have chosen it and made a choice already. ... they, always, will think that it's less dangerous than those who don't have a motorcycle license and don't know motorcycles." (Interviewee B).

Two interviewees highlighted that two-wheeled vehicles cannot be viewed as safe as cars. The other two mentioned that it is more about how the driver performs the transport, regardless of vehicle type (see appendix 7, question 8).

“As a transport in itself, then there is, well, no difference. ... it's, well, more about what's appropriate ... there's a difference safety-wise and sound-wise, and air, weather, wind, [external influence]. ... I would say that a car is safer than a motorcycle or moped, if you transport the dog or cat in a good way in the car.” (Interviewee D).

The interviewees identified a potential risk that the animal could physically affect or distract the rider while travelling on the road. One explained that risks should not be taken as transporting an animal was viewed as similar to when travelling with a child (see appendix 7, question 14).

“Partly it depends of course on how the animal, which still can be considered either as a passenger or some form of cargo, how you have secured the cargo ... so that the animal can't physically affect the rider. ... I guess that it's a quiet valuable cargo, so already there I think that it could create a somewhat elevated stress level in the rider.” (Interviewee A).

4.2.3 Interviewees' knowledge of legislation

The interviewees' knowledge of the provisions applicable to animal transport or cargo on motorcycles and mopeds varied, and they believed that most people are unfamiliar with these provisions (see appendix 7, question 15).

“... seat belt or transport cage, like that's what's universal for vehicles, but I haven't seen that there is something specific for particularly motorcycle or moped ... Road traffic legislation. You can get it if you want later. ... No. ... I think that many, regardless of vehicle, can't drive as well as they think that they can, and they don't have the information and knowledge that they think that they have. ... you drive a car and a motorcycle, for example, then you can still think into both types of perspectives ... But just that with attaching animals and what applies to it ... I don't think that they think that it's a law ...” (Interviewee D).

At the end of the interviews, the interviewees were asked whether they had anything else to add related to the study, and two interviewees did. One highlighted that if a rider is to transport an animal, a thorough risk assessment should be conducted with consideration of the animal, the rider, and other road users. The other one emphasized that riders should be careful when transporting an animal (see appendix 7, question 16).

5. Discussion

5.1 What are the possible welfare risks for the animals (cats and dogs) when transported on a motorcycle or moped?

Respondents (who had transported an animal) reported a variety of transport options, including custom and self-made solutions. Different transport options used could affect the animal's welfare differently as material, position-requirements or exposure of external factors can vary. Interviewees expressed a preference for commercially available crash-tested options, rather than people creating their own, not only for animal welfare reasons but for safety reasons. The most common transport options reported in this study was custom-/self-made solutions, commercial transport cages, or other alternatives. Consequently, as other alternatives were included with custom-/self-made solutions, it is difficult to know for sure whether it mainly consisted of other commercial alternatives, custom-/self-made solutions or if it was an equal divide. However, Hoareau et al. (2026) reported that riders used custom and self-made solutions, e.g. riders usually had their dog in their lap, in a bag or tied the dog to the passenger seat or the designated location for top boxes using a rope or a stretchy belt. Although these solutions were mentioned in this study, the difference was that there was a wider variety of transport options reported as well as commercial options. Moreover, several respondents (who had transported an animal) expressed a need for better transport options from the market. However, interviewees highlighted limitations with the current market supply, e.g. expensive, inadequate and restricted development due to the low demand. The market's limitations were believed to be a possible factor causing riders to create their own solutions. Similar challenges with the market have been noted regarding protective gear (Simpson et al. 2015). Transporting animals without appropriate protective equipment or tying an animal to the motorcycle may expose them to severe risks, including injury, stress, fear, instability, and environmental factors such as wind and weather (Hoareau et al. 2026).

As for the animal's experience or the availability of bringing the animal along on a two-wheeled vehicle, three interviewees expressed a need for further knowledge and guidance. Several riders (who had/who had not transported an animal, as well as interviewees) identified risks, but their effects on welfare were unknown. Cars as a mode of transport were sometimes described as safer compared with motorcycles. This supports Hoareau et al. (2026), although they mentioned that car transport could also be very stressful for dogs. Several respondents (who had transported an animal) did express that their animal got nervous or anxious in car transport and preferred motorcycle transport. Mariti et al. (2012) also found that

that around one fourth of dog owners, in general, perceived that their dog showed a negative response towards car transport. This occurred more likely if the destination was always the clinic, or if the dog had not gotten used to the transport or were not provided blankets, toys, food or water (Mariti et al. 2012). This supports what two interviewees specified for a transport to be considered safe, independent of the vehicle, namely that it depends on how the driver conducts the animal transport. Moreover, the findings suggest that respondents (who had transported an animal) consider weather conditions, protective gear and the size of the transportation cage. However, different circumstances may pose different risks.

Weather is one factor that riders usually consider, as external influences such as shifts in temperature or changes in weather directly affect driving conditions. Miah et al. (2024) stated that weather conditions are one of nine factors which affect motorcycle riders' likelihood to crash. Riders had expressed that being warm causes a need to reduce the layers of protective gear and being cold compromises the management capacity (Simpson et al. 2015). Moreover, Bruchim (2012) concluded that an animal who suffers from heatstroke can get serious complications which can be life threatening. Heatstroke is caused by an elevated body temperature from excess heat by the environment or an activity, which the body cannot get rid of (Epstein & Roberts 2011). Therefore, as for riders, an animal's environmental and physiological environment can have welfare implications. In addition, nearly half of the respondents (who had transported an animal) either had or had not trained their animal. Mariti et al. (2012) had similar results concerning whether owners asked for general advice or not. An animal in an enclosed space can cause stress due to the social and space restriction (Kelling & Maiya 2025). Yet, training an animal is an effective method to increase positive or negative emotional states through reinforcements (Dawkins 2008).

Protective gear was mostly reported as the transport cage itself or eye goggles. Two interviewees believed that the limited use of protective equipment reflected a limited market supply and lack of knowledge. This supports Simpson et al. (2015), where riders had expressed that the market's supply was not enough even though it had improved. Their study also found that riders did want a mandatory standard, whereas several riders viewed protective gear as unnecessary (Simpson et al. 2015). Moreover, meeting space requirements for a transport cage may be challenging depending on the type of vehicle and possible transport option for the animal. Some vehicles have load restrictions and certain margins (MC-branschen w.y.a), and L5 affects which transport options may be used due to space requirements. Interviewees pointed out that the transport option can influence the driving characteristics of the vehicle. Therefore, a rider's lack of knowledge on

the requirements for the transport options could pose animal welfare risks and an unsuitable transport option for the vehicle could pose safety risks. Riders that had been through a motorcycle accident without a helmet, suffered the worst outcomes compared with riders that had a helmet (Rosander et al. 2023).

The majority of respondents reported that the longest time they had transported an animal was either less than an hour or up to 2 hours, whereas about 2% reported 10 hours or more. Few respondents (who had transported an animal) clarified in free text that they take breaks at regular intervals, and few were confused whether the question included breaks. This may indicate that several riders considered the animal's welfare during transport, and this is partly supported by respondents (who had not transported an animal) who expressed that they felt that the animal's welfare was considered. However, the latter respondent group was divided equally between 'against' and 'for' two-wheeled vehicles as an appropriate means of transporting animals. Moreover, interviewees questioned whether transporting animals on a motorcycle and moped is appropriate, as the available supply of transport options were considered as insufficient from an animal welfare perspective.

Furthermore, respondents (who had transported an animal) perceived the animal's response before, during and after the drive as not changing noticeably, but also expressed that they had seen the animal look around, lie down, remain calm, seemed to enjoy the transport, or follow their owner, which may indicate positive emotional states (Flint et al. 2024). Moreover, the size of the pupils was commonly reported as unknown, which was also reported for hearing loss and signs of nausea during the drive. According to Guo et al. (2024) and de Mouzon et al. (2024), people were more accurate in identifying an animal's emotional state when having visual and vocal expressions available, especially looking at the animal's entire body. The low number of noticed changes in animal response may be explained by limitations of the visual and vocal information available (the animal's position on the bike, inside a transport option, restrictions in vision and hearing caused by the helmet, and the relationship with the animal (Młyński et al. 2009; Guo et al. 2024). Moreover, Guo et al. (2024) reported that the longer a person had a relationship with an animal, the better they were at detecting subtle behavioural changes. Regardless of whether hearing loss was noticed in connection with the transport, noise exposure may still be a possible welfare risk. In animals, noise exposure can cause, e.g. hearing damage, inflammation, elevated blood pressure, stress hormones, oxidative stress, metabolic and behavioural changes (Turner et al. 2005; Uran et al. 2012; Münzel et al. 2017; Morakinyo et al. 2019).

Breathing rate and vocalisations were often perceived as increased before the drive. This could be explained by what several respondents (who had transported an animal) reported in free text that their animal seemed excited when they saw the transport option, when the owner dressed themselves for the drive, or when the owner arrived home on the motorcycle. According to Grigg et al. (2021), breathing rate and vocalisations may be associated with anxiety and fear, whereas vocalisations may also reflect arousal and excitement. Mariti et al. (2012) suggested that dogs perceived as “excited” in connection with transport may be expressing positive anticipation of an expected event, such as the owner’s arrival or the opportunity to accompany the owner on the transport. This interpretation is supported by findings that owners generally perceive their dogs’ responses to two-wheeled vehicle transport as positive (Mariti et al. 2012). Although the reported decrease in escape attempts prior to transport is difficult to interpret, several respondents (who had transported an animal) reported in free text that the animal willingly approached the two-wheeled vehicle or transport option before transport.

Furthermore, thirst was perceived to increase after the drive. According to Dawkins (1990), thirst may be associated with negative emotional states, although it also depends on how long the animal is deprived of water which may be influenced by the environmental temperature and the duration of the transport. Moreover, the findings in this study should be interpreted with caution, as the context of the transport may influence both animal welfare and the animals’ emotional states.

5.2 What are the attitudes of motorcycle and moped riders in Sweden and internationally towards the transport of cats and dogs on motorcycles and mopeds?

This study provides insights into motorcyclists’ and moped riders’ perceptions and attitudes towards animal transport on two-wheeled vehicles, as well as factors that may impact its occurrence and acceptance. Two interviewees clarified that non-riders may have a more negative opinion due to limited knowledge about two-wheeled vehicles or perceiving it as dangerous in general. This strengthens the relevance of obtaining riders’ perspectives when investigating this subject.

Nearly all respondents (who had not transported an animal) had observed others doing so, particularly with dogs, while relatively few riders had personally transported animals. This supports Mariti et al. (2012) and Hoareau et al. (2026) where approximately 10% of the dog owners had transported their dog on a two-wheeled vehicle. The findings also suggest that the occurrence may increase in the future, as several respondents (who had not transported an animal) highlighted

that they would like to be able to transport their animal. However, riders (who had/who had not transported an animal, as well as interviewees) expressed concerns regarding, for example, appropriateness, safety, animal welfare, need for guidelines or improved transport options. Three interviewees believed that most riders are unaware of the provisions, and that further research could help solve travel-related issues, which Mariti et al. (2012) also suggested.

Regardless of country of origin, respondents (who had and who had not transported an animal) reported a positive view of animal transport on two-wheeled vehicles, referring to the animal's, their own and other road user's perspective. From a safety perspective, it was more commonly reported that it depends on how the animal is transported. Swedish respondents (who had not transported an animal) seemed to have a more unsure, neutral or negative view in general. Interviewees stated from their own perspective, that the most important aspect is safety, even if they expressed different feelings towards the animal transport. There is a need for improving the safety for two-wheeled drivers (Zhao et al. 2026), and riders had expressed that they had not been equally respected when roads had been developed (Simpson et al. 2015). Drivers on two-wheeled vehicles are unprotected in comparison to drivers on four-wheeled vehicles. This may partly explain why safety concerns were frequently raised by riders in this study. However, Simpson et al. (2015) found varying perspectives on the necessity of protective gear and Zhao et al. (2026) reported differences in riders' risk-taking behaviours. This suggests that riders may have varying perceptions of safety depending on their individual perspectives. Despite the differences in views and whether they had experience of transporting an animal or not, the riders (who had/who had not transported an animal, as well as interviewees) highlighted two or more aspects important for the transport to be viewed as positive. It mainly concerned safety, the rider's awareness of the animal, the vehicle's size, the animal's position, comfort and protective gear, which Huth et al. (2014) and Simpson et al. (2015) support, although animal-related aspects were not investigated.

5.3 How can the Swedish animal welfare legislation be improved to better safeguard the welfare of cats and dogs transported on motorcycles or mopeds?

5.3.1 Animal welfare legislation aspects

Findings suggest that most of the respondents (who had and who had not transported an animal) knew a lot about animal welfare, whereas a smaller proportion answered the same regarding animal welfare legislation. It was also found that the interviewees' knowledge of the provisions applicable to animal

transport and cargo on motorcycles and mopeds varied. This was expected, as the interviewees were selected for their difference in expertise as well as that the interviews aimed to also provide insights into related areas to two-wheeled vehicles. In addition, interviewees did believe that most riders are not familiar with what is applicable and as previously mentioned, few respondents (who had and who had not transported an animal) reported that they knew a lot about animal welfare legislation. The legislation sets specific requirements that must be met and provisions and appendixes that apply depends on the animal species transported, mode of transport, transport option used for the animal, transport purpose, and situation. The different requirements, provisions and appendixes may possibly cause confusion, difficulty in knowing what applies or how it should be interpreted. Especially since the AWA, AWO and L5 do not mention any provisions or appendixes directed to motorcycles or mopeds as it does for containers used as a transport option for animals or for cars used as a mode of transport. Therefore, an improvement to Swedish animal welfare legislation would be to explicitly address the transport of animals on motorcycles and mopeds. For example, by including motorcycles and mopeds in specific provisions or to introduce specific provisions directed to motorcycles and mopeds.

Respondents (who had transported an animal) had different circumstances in which transport option, additional protective equipment, and animal varied, possibly requiring different precautions to ensure the animal's welfare. However, the findings suggest that some transport options used for animals may not fully comply with Swedish animal welfare legislation, as insufficient protection may pose risks to both animal welfare and safety. For example, custom-/self-made solutions, attaching the animal with a leash to the vehicle, "baby carrier" for the animal attached to the rider or the rider placing the animal inside their jacket. According to 2 chap. 13 sec. AWA, animals shall be transported by means of transport that are suitable for the purpose and give every animal protection from heat and cold as well as from bumping, chafes and the like. In addition, a person transporting animals shall attend to the animals and take the measures needed to ensure that the animals are not injured or caused suffering during loading, transport and unloading (2 chap. 13 sec. AWA). The L5 also has detailed provisions for how animal transport shall be carried out. In addition, Swedish road traffic legislation contains requirements and provisions that apply to cargo and passengers transported on vehicles. However, the previously mentioned examples of transport options do not appear to comply with these provisions.

The second most used transport option in this study was a transport cage. Moreover, there are published innovations of transport options for animals (Clarivate 2025), but according to Hoareau et al. (2026), a transport cage would be a more practical transport option for two-wheeled vehicles with less posed

risks. However, motorcycles and mopeds may represent a legislative grey area regarding how animals should be safely restrained during transport because some provisions specifically refer to cars. For example, 6 chap. 3 sec. L5 states that pet animals can be transported in a car's luggage compartment only if supervision is possible during transport, and if measures are taken to secure the animals when braking. Furthermore, a general advice by the same provision, is that animals should be secured through being stored in a secured transport cage or, for dogs, in a particular custom seat belt. Although the provision particularly states cars, a luggage compartment on a motorcycle is usually the transport option itself. Therefore, the provision could potentially be expanded by including motorcycles and mopeds, whereas the general advice could require, for two-wheeled vehicles, either a harness or a custom seat belt attached to the floor of the transport cage. This would be beneficial especially with the balance factor that two-wheeled vehicles have.

Moreover, several respondents (who had transported an animal) clarified that they take breaks regularly, whereas few included water, food or walks. However, dogs that did not get toys, blankets, water or food during a car transport were found to show more problems associated with the transport (Mariti et al. 2012). In addition, e.g. dogs and cats during transport shall be rested, offered water at minimum of every six hours and fed at a maximum interval of 24 hours (6 chap. 37, 39 sec. L5). However, it may be unadvisable to provide water and feed during a two-wheeled vehicle transport, as the bowl could move due to the balance. The transportation itself can also stress an animal from factors such as noise, vibration, high temperature, unusual experience, or unfamiliar environment and some animals can get motion sickness and vomit (Frank et al. 2006). Furthermore, noise can also impact the metabolism (Morakinyo et al. 2019). If the animal gets distracted or stressed during the transport and distracts the rider, there could be consequences. Therefore, a suggestion would be that the particular provision, 6 chap. 36 sec. L5, should include motorcycles and mopeds, as well as introduce a corresponding provision for cats. The provision mentions how dogs should be safely restrained during transport within a container on a platform and highlights space requirements, ventilation, exhaust gas, unfavourable weather, and a general advice. Another suggestion would be to introduce a provision requiring that dogs and cats have access to at least one toy or blanket during the transport. Additionally, it should also require a thermometer to be placed near the animal's location, as well as some form of ear protection to be provided. Another suggestion would be to include a general advice, stating that animals should be provided food, water, and walks during a break after transport.

5.3.2 Animal welfare control aspects

Concerning the Swedish animal welfare inspection, guidelines, checklists and appendixes used by the Swedish animal welfare inspectors (Swedish Board of Agriculture 2026), should include one inspection solely for two-wheeled vehicles. Two-wheeled vehicles like motorcycles or mopeds are not mentioned in the documents used by the inspectors, although the term container and flight are (Swedish Board of Agriculture 2026). A transport cage could be seen as a container, but it differentiates if it were to be placed in a car or on a motorcycle. A two-wheeled vehicle shares one similarity with aircraft, the movement where inclination is usually necessary to be able to make a turn and cars function differently. However, two-wheeled vehicles differ from aircraft and cars which have an outer shell. By improving the Swedish animal welfare inspection by adding one inspection for two-wheeled vehicles, checkpoints and guidelines will have to be added. The inspection will not suffice by only assessing the transport option. A valid inspection may be an assessment which includes focus on the vehicle, the animal, the transport option, additional protective equipment, methods used, riders' licence and papers on the most recent vehicle control.

There are several categories of two-wheeled vehicles and the MC-branschen (w.y.a) has descriptions and pictures of each. The MC-branschen (w.y.a) also states that every motorcycle or moped has a compromise between several factors, whereas size, driving position, weight and load capacity are one of them. There are also differences in gravity centre, aerodynamics, motor construction and vibration. Moreover, one two-wheeled vehicle category might not be suitable to use as a means of transport with animals. Therefore, a suggestion would be for the inspection, in the future, to include a list of what sort of motorcycle categories should not be used when transporting animals. Additionally, a transport option suitable for one type of two-wheeled vehicle may not be suitable for another two-wheeled vehicle. A suggestion would then be for the inspection to examine the weight of the animal, the allowed or estimated maximum load of the transport option and vehicle, including additional weights. The inspection is also suggested to examine the transport option's space and design. Prevention methods against factors such as weather conditions, noise, exhaust gases, vehicle balance, and the use of protective equipment as well as how frequently breaks are conducted would also be suggested to include. Lastly, a suggestion would be to require owners, who uses a custom or self-made solution as a transport option for the animal, to demonstrate the transport with the animal, to assess the animal's response. It could be conducted by the inspector placing a camera nearby the animal to examine its behaviours during a short drive, loading and unloading by the owner.

5.4 Scientific and practical context of the study

This study is, to the best of current knowledge, among the first to investigate animal transport on two-wheeled vehicles in relation to animal welfare and riders' attitudes. This study aimed to collect a broad range of data by including a survey and interviews involving individuals with different experiences and perspectives related to motorcycles or mopeds. Although direct research on animal transport using two-wheeled vehicles is limited, relevant literature exists on related topics such as vehicle-related risks, rider attitudes, and animal welfare assessment. This provided a basis for discussing potential welfare implications, risks, and benefits associated with transporting animals on motorcycles and mopeds. The study may therefore contribute to increased awareness and knowledge regarding animal welfare during such transport.

It has to be taken into account that every individual country has their own legislation, inspections and guidelines. Approaches can also vary regarding vehicle and animal regulation. Between countries there are also differences in the market, weather conditions, economy, politics, organisations, authorities, society, religion, education and public opinion.

5.5 Usability of the study and future research

In order to maintain good animal welfare on two-wheeled vehicle transport in Sweden, the animal welfare legislation may require further development. For example, the animal welfare inspection should be improved by including one inspection specifically for two-wheeled vehicles, which will result in an additional guideline, appendix and checklist for the animal welfare inspectors. It is important for the inspectors to be able to work without conflicts of interest, unbiased, uniformly and objectively. However, because Swedish animal welfare legislation does not specifically address how animals should be safely restrained on two-wheeled vehicles, the assessment of such transport may be challenging for inspectors. It may also give room for a more varied usage of transport options, especially in cases where the market's supply does not meet riders' demand, which could lead to increased pressure on the availability of suitable transport options. This could cause an increased usage of non-commercial alternatives which could press for guidelines or a mandatory standard for animal welfare and safety reasons. This study aimed to investigate riders' attitudes towards animal transport on two-wheeled vehicles as well as riders' perceptions of the animal's response to identify possible welfare risks. The findings show that riders value safety and that there is a small proportion of riders transporting animals. However, there may be potential for increased future interest, as several respondents (who had not transported an animal) mentioned that they would like

to be able to transport their animal. Moreover, riders were mostly positive towards the transport but respondents (who had not transported an animal) were more varied.

Simpson et al. (2015) stated that several riders could be in a disagreement or agreement on certain areas, which this study supports. Therefore, future research should continue to investigate animal transport on two-wheeled vehicles and its welfare implications to fill in knowledge gaps particularly expressed by riders. A wider knowledge base could prevent misconceptions, raise awareness, unify riders, increase road security, provide riders information and a sense of security by knowing how to ensure the animal's welfare. The knowledge could also be used to strengthen the legislation and documents used by animal welfare inspectors. This study provided considerable information on possible welfare risks of animal transport on two-wheeled vehicles, as well as the riders' situation and view on possible challenges. To safeguard animal welfare, examples of necessary questions for further research are:

- What kind of behaviours do the animal (cats or dogs) show in connection with a transport on a motorcycle or moped?
- What sort of external factors affects the animal (cats or dogs) during a two-wheeled vehicle transport?
- What sort of additional protective equipment affects the animal's (cats or dogs) welfare?

5.6 The study in relation to ethics and sustainability

5.6.1 Sustainability aspects

Simpson et al. (2015) pointed out that riders had challenges with finding suitable protective gear within the market's available supply at an affordable price and when the market's supply had improved, it remained insufficient. In addition, riders understood that their demand could influence the market's development, although national riders' demand alone might not be enough (Simpson et al. 2015). From an economic, social and safety perspective, it would be beneficial if the market considers national riders' demands for accessible and affordable safety protective gear. If these demands are not met, and current transport options remain expensive or associated with safety concerns, riders may instead develop custom or self-made solutions. In cases where the rider has insufficient knowledge, such solutions could compromise animal welfare and traffic safety, possibly increasing police controls on the road or financial burdens related to hospital or veterinary care.

Moreover, the Swedish Board of Agriculture (2026) has the animal welfare inspectors' checklists and guidelines which they use during an inspection and two-wheeled vehicles are not mentioned. Anneberg et al. (2013) stated that the inspectors' performance affects the public's acceptance, efficiency and perceived fairness of the system. Applying transport inspection criteria developed for four-wheeled vehicles to two-wheeled vehicles may be inappropriate, as neither Swedish animal welfare legislation nor road traffic legislation prohibits the transport of animals on two-wheeled vehicles. The transport may be at risk for social and sustainability-related conflicts, particularly given the limited research available to support decision-making. Therefore, further research would be beneficial for authorities and riders involved.

Furthermore, transporting animals on two-wheeled vehicles may offer environmental, economic, and social benefits. Two-wheeled vehicles have lower gas emissions, require less fossil fuel, and require less land use, and are in some cases the only means of transport or the mode of transport that saves the most time and money (Simpson et al. 2015). Riders did highlight that a ban against motorcycling would be seen as a violation of their rights and impractical (Simpson et al. 2015). Allowing riders to transport animals on two-wheeled vehicles could then benefit the environment and riders' economies, while also enabling riders to make decisions that benefits themselves, their animal and the environment. In contrast, prohibiting the transport could negatively affect riders' perceptions of authorities, possibly increase tensions and require additional conflict management efforts.

5.6.2 Ethical aspects

Ethical and practical considerations related to animal transport should address all aspects of welfare, including health and disease; otherwise, the animal welfare assessment may be considered incomplete (Adams & Thornber 2008). For example, other aspects of animal welfare that can reveal when the animal's welfare is at risk are behavioural, physical, nutritional, and disease-related indicators (Adams & Thornber 2008). However, from an animal welfare perspective, whether animals should be transported on two-wheeled vehicles remains unclear. Given the limited research currently available, it is difficult to determine whether a prohibition on such transport would be justified on animal welfare grounds.

Mariti et al. (2012) found that most owners who transported their dogs on two-wheeled vehicles perceived their dogs' response as positive. Similarly, most owners who transported their dogs by car reported positive responses, although these responses could become negative if the dogs had not been accustomed to the transport or if the destination was consistently a veterinary clinic (Mariti et al.

2012). Findings in this study suggest that cars, compared with two-wheeled vehicles, were perceived as safer, equally safe, or more problematic. Regardless of the mode of transport used, animal owners are responsible for their animal's welfare. Furthermore, cars have also been found to be stressful for dogs (Hoareau et al. 2026). Additionally, several riders in this study expressed concerns regarding animal safety and welfare, highlighted a need for guidelines, or wanted improved transport options. Consequently, it may be more appropriate for animal welfare legislation to specify how animals should be safely restrained and transported on such vehicles rather than a prohibition.

5.7 Advantages and disadvantages of the method

5.7.1 The online survey

First, this study population mostly consisted of men (78%) and had a slightly higher proportion of females compared to other motorcycle studies, e.g. Simpson et al. (2015) had only males and Zhao et al. (2026) had approximately 90% males. However, the statistics from the most recent years show that female riders have increased (Sveriges MotorCyklister w.y.a; Transport Analysis 2026), and male members of SMC decreased from 89% to 86% (Sveriges MotorCyklister w.y.a). It was expected that riders would be predominantly male and that the proportion of female riders would be slightly higher than in previous years due to growing interest in motorcycling among women, which is common knowledge among motorcyclists. Moreover, the largest proportion of respondents in this study were aged 51 - 60 years whereas, e.g. Zhao et al. (2026) had the largest proportion of riders aged 65 years or older. In relation to gender and age distribution, this study seems to reflect the most recent statistics more closely than the populations represented in other studies. Although the minimum age for participation was set at 18 years, this may be considered as a limitation, as in Sweden it is allowed to obtain a licence for moped class one at 15 and a motorcycle (125 cubic centimetres) at 16 (Swedish Transport Agency 2026a; 2026b). The age criteria were established to follow the Ethical Review of Research Involving Humans Act (2003:460) and to ensure that the respondents could independently decide whether to take part in the study. Otherwise, the Parental Code (1949:381) also had to be considered.

Based on the riders that answered the survey, the result indicates that riders showed both similar and different attitudes, within and between subpopulations (those who had and those who had not transported an animal). This could be explained by similarities or differences in levels of knowledge, experience of driving a two-wheeled vehicle and transporting an animal. However, by including both subpopulations the result may better represent reality as possible biases, such as respondents lacking certain knowledge or depending on whether the rider had

transported an animal themselves or not, could be reduced and allow a broader picture of the subject. Internal non-response occurred in several survey questions, particularly in question 8, and the free-text responses. However, since the free-text responses were supplementary to predefined response alternatives, this was not considered a major loss of data. Overall, 82% of the respondents completed the survey, indicating a relatively low overall non-response.

The English online survey was posted in eight pre-selected FB groups. However, there was a risk that survey posts would not be published or seen due to factors such as group policies, deletion of groups, a high number of daily posts, inactive members, suspicions regarding external links, or members' limited English proficiency. Yet, language barriers may not have been a major limitation as respondents from a variety of countries participated. To increase participation, the survey was also distributed through SMC and FEMA, which may have increased the likelihood of reaching riders from different countries. However, a limitation was that no additional organisations specifically targeting riders from other countries than Sweden were included. Still, the inclusion of FEMA was considered a strength, as it is an English umbrella organisation that collaborates with multiple motorcyclist organisations from other countries, including SMC. Including additional organisations might have had increased the international participation, but it could also have created challenges related to language.

Furthermore, the four-month data collection period enabled survey reminders to be distributed adjusted to respondent activity on 2025-07-09, 2025-08-15 and 2025-09-22. SMC also published reminders through different channels on 2025-08-27 and 2025-09-12, which may have reduced the risk of annoyance among potential respondents. However, some riders may not have participated because they perceived the survey invitation as spam or were not members of SMC, FEMA, or the selected FB groups. In addition, the channels targeting riders from countries other than Sweden were less diverse than those targeting Swedish riders, which may partly explain the lower proportion of international respondents.

During the period in which the survey was active, a few riders expressed interest in participating in an interview if it were to be relevant. This provided an opportunity to expand the method, which will be discussed further below. In addition, the survey could be accessed via computer, tablet or mobile, allowing riders to take part in the survey from any location. With the assistance of SMC, FEMA, and social media, more riders may have encountered, completed, or further shared the survey. One advantage of the survey period was that it coincided with the peak riding season in Sweden, which may have increased the likelihood of Swedish riders encountering the survey. However, this may not have applied equally to riders from other countries.

Furthermore, riders might not have been able to provide entirely correct answers because a few respondents (who had transported an animal) expressed that the survey did not account for individuals transporting multiple or different animal species. A few of those riders did also express that they were confused by whether the question concerning the maximum time travelled with the animal, included breaks. In addition, few respondents (who had and who had not transported an animal) clarified that they had transported an animal only due to an emergency or only attempted it once. Another disadvantage of the interpretation of the questions may have been the word “decreased”, which may have been interpreted as the animal’s response duration or the frequency reduced. In addition, one disadvantage concerning the question regarding transport option, was that “other alternatives” were combined with “custom-/self-made solutions”. It was not possible to determine how many respondents used custom-/self-made solutions or other alternatives.

Data collection through a web-based survey was time-efficient and made it possible to reach riders from multiple countries. Additionally, the platform used to create the survey, was user-friendly during the design, distribution, and implementation phases. However, one limitation was the platform’s “Logic” feature, which was necessary to create the survey tracks. For certain questions with certain answer functions, the feature did not restrict respondents to selecting only one answer alternative when intended. As a result, the total number of answers could exceed the number of respondents who completed the survey. Consequently, the raw data required thorough manual analysis. Inconsistent answers on questions where respondents had been instructed to select only one answer alternative were discovered and removed. In contrast, for questions that allowed respondents to select multiple answer alternatives or provide free-text response, the responses contributed to a broader understanding of the subject.

5.7.2 The semi-structured interviews

The interviews aimed to provide additional information from various perspectives to cover relevant areas, possible clarifications to specific situations, and address possible knowledge gaps, which contributed to a broader picture of the subject. Interviews, resulting in qualitative data, provide interviewees with an opportunity to give detailed answers, which can require a larger amount of time in order to arrive at a conclusion. The initial aim was to include five interviewees, only four were included but it was not considered a major limitation.

SMC provided contact information, in January and February, for individuals with relevant expertise related to motorcycles. SMC also provided contact information for one individual who had already expressed interest, during the time the online survey was available, in participating in a potential interview. Although one

interviewee had expressed interest in participating, this was not considered a major source of selection bias, as the purpose of the interviews was to obtain insights from individuals with different expertise related to two-wheeled vehicles. Moreover, through email contact with the potential interviewees, it was ensured that they were reached and given the opportunity to independently decide whether to participate before interview arrangements were made.

5.8 Advantages and disadvantages of the literature

In this study, it was referred to 40 scientific articles, 17 websites, 12 constitutions, and one scientific database. The websites included sources from the European Union, online market platforms, MC-branschen, the Swedish Transport Agency, Transport Analysis, SMC, FEMA, the Swedish Board of Agriculture and Trygg-Hansa. The constitutions included sources from the European Union and Sweden.

Articles which investigated motorcyclists' attitudes towards motorcycling (Simpson et al. 2015; Zhao et al. 2026) did not include an international comparison population of riders, such as in this study. Simpson et al. (2015) consisted of riders from New Zealand and Zhao et al. (2026) of riders from Florida. Furthermore, Simpson et al. (2015) included two-wheeled vehicles such as mopeds with 50 cubic centimetres, which according to MC-branschen (w.y.b), corresponds to moped class one in Sweden. However, Simpson et al. (2015) classified mopeds together with motorcycles and did not specifically separate moped riders from motorcyclists, while Zhao et al. (2026) did not include mopeds at all. Moreover, none of the articles that investigated riders' attitudes or animal welfare specified the number of wheels on the included motorcycles or mopeds. This is relevant as some motorcycles have three wheels (MC-branschen w.y.a), whereas this study specifically focused on two-wheeled motorcycles and mopeds. Nevertheless, a comparison between articles has to be interpreted with caution as circumstances differ, particularly between countries, e.g. legislation, market, weather condition, public opinion, policy, economy, religion and society. However, riders from different groups can share certain attitudes while differing in others, regarding risks, safety, and protective gear (Simpson et al. 2015).

A disadvantage of some of the research articles was that they focused on mice and rats, not cats or dogs. Although Mariti et al. (2012) and Hoareau et al. (2026) included only dogs, this study included both dogs and cats. Other animal articles did not focus particularly on two-wheeled vehicle transport, e.g. Mariti et al. (2012) and Hoareau et al. (2026). However, the articles included a small proportion of results related to motorcycles that could be used to discuss the findings of this study. Mariti et al. (2012) specifically focused on car transport, owners' attitudes, and perceived animal response in connection with transport,

which allowed comparisons between car transport and this study's findings on two-wheeled vehicle transport. Animal articles which focused on specifically noise and motorcycle exhaust gas (e.g. Turner et al. 2005; Lee et al. 2008; Uran et al. 2012; Münzel et al. 2017; Morakinyo et al. 2019) could be used to understand how it may affect the animal welfare, although the noise did not exactly represent motorcycle noise. An advantage with some of the human studies was that they focused on motorcycle-, rider- and environmental-related risks with two-wheeled vehicles (e.g. Mannering & Grodsky 1995; Preusser et al. 1998; Starkey 2016; Lechner et al. 2020; Rosander et al. 2023; Miah et al. 2024). This could be used to discuss the findings of this study and to understand the potential risks and benefits of two-wheeled vehicle transport, which may also affect the animal welfare. A wide understanding of possible animal welfare risks and influencing factors could strengthen the analysis, which could contribute to possibly more accurate actions aimed at safeguarding the animal welfare.

Information from legislation, market-related websites, statistics, organisations, authorities, an insurance company, and documents used by Swedish animal welfare inspectors provided insights into the limitations, risks, and potential of transporting animals on two-wheeled vehicles. It also showed areas which require further attention to safeguard animal welfare during such transport.

6. Conclusion

Although most riders in this study had *not* transported an animal on a two-wheeled vehicle themselves, most riders had observed others transporting animals. Moreover, riders expressed that the market supply prevented them from transporting an animal themselves, for safety and animal welfare reasons. Riders who had transported an animal most commonly transported the animal on a motorcycle in a custom-/self-made solution, a commercial transport cage, or another alternative for a maximum travelled time between less than an hour up to two hours. These riders did take extra precautions for weather conditions, protective gear and transportation cage/area size. Several factors can possibly influence the animal welfare, including type of vehicle, transport option used for the animal, protective gear, environmental situation, the reason behind the transport, the rider's own manner and the animal's response to the transport.

In general, riders who had transported an animal perceived their animal as excited before the transport. However, riders may have had challenges in detecting changes in the animal's response to the transport, since the riders did not report many noticeable changes. Regardless of whether the rider had transported an animal or not, several riders were concerned about noise, motorcycle exhaust gases, potential injury due to inadequate protection, and animals being forced onto the vehicle, which are possible welfare risks. Also, the balance, the animal's transport option, lack of knowledge and a rider's irresponsible manners were targets of concern. Riders who had transported an animal generally believed that the animal enjoyed being transported on the vehicle, and also that other road users (including themselves) had a positive attitude to the transport. Riders who had *not* transported an animal were more uncertain and divided between positive and negative views on transporting animals on two-wheeled vehicles. From a safety perspective, riders generally agreed that it depends on *how* the animal is transported. Despite the slight differences in attitude, the transport was seen as acceptable as long as it was performed in a safe manner and with the animal's safety and welfare considered.

Moreover, suggestions regarding Swedish animal welfare legislation and animal welfare inspection procedures were examined to identify ways of safeguarding animal welfare during transport on motorcycles and mopeds. It was suggested that Swedish animal welfare legislation should explicitly address the transport of animals on motorcycles and mopeds. Additionally, a dedicated inspection for animal transport on two-wheeled vehicles should be implemented.

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Popular science summary

Motorcyclists describe riding as both an enjoyable and practical means of transport that offers environmental and economic benefits, although it also involves risks. Two-wheeled vehicles occupy less space, require less fossil fuel, and generate lower greenhouse gas emissions. However, factors which influence transport safety are the rider's behaviour and skill, the use of protective gear, cargo, vehicle type, and environmental conditions. Moreover, motorcycle noise may be perceived as loud by humans, but research on how dogs and cats experience motorcycle noise is limited. Existing research indicates that noise can affect animal welfare, but the specific impacts of motorcycle transport on animals remain unknown. Although animal welfare is a broad concept, it can be assessed through different approaches. Understanding animals' experiences is important, as welfare today involves more than the absence of stress and includes both positive and negative experiences. In recent years, the use of two-wheeled vehicles for animal transport has increased. The European Union establishes minimum standards of animal welfare that apply to member states. In addition, Sweden has its own animal welfare legislation, which aims to ensure good animal welfare, promote good animal well-being, and respect for animals. Sweden also has road traffic legislation regulating aspects related to traffic, vehicles, cargo, and transport. However, animal transport on two-wheeled vehicles is not specifically addressed in the legislations.

The aim of this study was to investigate riders' attitudes and perceived animal responses towards two-wheeled vehicle transport, and how the Swedish animal welfare legislation may be improved to better safeguard animal welfare during such transport. Data were collected through an online survey distributed via several channels and through interviews with riders. Both riders who had experience transporting animals and those who had not were included. Most riders had not transported animals. Among those who had, dogs were the most commonly transported animals, particularly on motorcycles using custom-/self-made solutions or cages. Transport duration was generally up to a maximum of two hours, and weather conditions, protective gear, and transportation cage/area size were considered. Overall, riders predominantly expressed positive attitudes towards the practice, whereas respondents without such experience held more varied views. The transport was commonly viewed as acceptable if it was conducted safely and with consideration for the animal's welfare. Relatively little animal response was reported, but before transport, animals were mostly perceived as excited. To safeguard animal welfare, Swedish animal welfare legislation should address how animals should be restrained and one inspection specifically dedicated to two-wheeled vehicles should be implemented.

Thanks

I would like to thank my supervisors, Therese Rehn and Katja Lundqvist, as this study would not have been possible without them. Their support, through their ideas, reflections, guidance, and feedback throughout the project, has been invaluable. Dominique Faymonville from SMC, as well as the colleagues who were involved, also deserves my sincere appreciation and thanks for their support. They helped publish the survey through SMC's and FEMA's channels as well as finding interviewees to interview, and for the opportunity at the Swedish Elmia motorcycle fair 2026 where I got to present my work. All of the motorcyclists and moped riders, whether they participated in the survey or the interview, also deserve my thanks for taking the time to contribute to the study. Lastly, I would like to thank my family and friends for the support they showed in various ways throughout the project. Their support has helped relieve stress and has given me motivation, excitement, and a sense of pride while working on a subject that was not without its challenges.

Appendix 1

Survey design

On the first page of the survey, only the heading “Terms & Consent” and the text from appendix 3 were presented. Further down it said: “I accept the terms” and at the end of the page, there were two checkboxes (Yes/No) for the respondents to provide consent to the terms. Upon accepting the terms, respondents could proceed to the survey questions, which are presented on the following pages.

1.

Choose only one answer alternative.

What gender do you identify yourself as?

- ☐ Male
- ☐ Female
- ☐ Other

2.

Choose only one answer alternative.

How old are you?

- ☐ 18 - 20
- ☐ 21 - 30
- ☐ 31 - 40
- ☐ 41 - 50
- ☐ 51 - 60
- ☐ 61 - 70
- ☐ 71 - 80
- ☐ 81 - 90
- ☐ 91 years or more

3.

What country do you live in?

- ☐ Write down the country _____

4.

Choose only one answer alternative.

How many years have you been driving a motorcycle/moped?

- ☐ 0 - 10
- ☐ 11 - 20
- ☐ 21 - 30
- ☐ 31 - 40
- ☐ 41 - 50
- ☐ 51 years or more
- ☐ Only been a passenger.

5.

Choose only one answer alternative.

Have you ever driven with an animal on a motorcycle/moped?

- ☐ Yes
- ☐ No

6.

What type of vehicle have you been driving with the animal?

- ☐ Motorcycle
- ☐ Moped

7.

What kind of an animal have you been driving with?

- ☐ Dog
- ☐ Cat
- ☐ Bird
- ☐ Rodent
- ☐ Other animal _____

8.

Choose only one answer alternative.

Have you seen others drive with an animal on a motorcycle/moped?

- ☐ Yes
- ☐ No
- ☐ I do not know

9.

What are your thoughts on animals that are transported on motorcycles/mopeds, from an animal's perspective?

- ☐ They enjoy the transportation
- ☐ They are neutral to the transportation
- ☐ They dislike the transportation
- ☐ I do not know
- ☐ Other thoughts _____

What do you think other road trafficants thinks about animals being transported on motorcycles/mopeds?

- ☐ They find it adorable
- ☐ They find it neutral
- ☐ They find it weird
- ☐ They find it dangerous
- ☐ I do not know
- ☐ Other thoughts _____

What are your thoughts on animals that are transported on motorcycles/mopeds, from your own perspective?

- ☐ Adorable
- ☐ Neutral
- ☐ Weird
- ☐ Dangerous
- ☐ I do not know
- ☐ Other thoughts _____

What are your thoughts on animals that are transported on motorcycles/mopeds, from a safety perspective?

- ☐ Safe
- ☐ Unsafe
- ☐ Depends on how the animal is transported
- ☐ I do not know
- ☐ Other thoughts _____

10.

How have you been transporting the animal?

- ☐ Commercial transport backpack
- ☐ Commercial transport cage
- ☐ Commercial "baby carrier" for the animal attached to you on the back/front
- ☐ Leash for the animal attached to the motorcycle/moped on top
- ☐ "Side car" or platform attached to the motorcycle/moped
- ☐ Custom/self made solution or other alternative _____

11.

How did you train the animal to be transported on a motorcycle/moped?

- ☐ I did not train the animal in any particular way
- ☐ I trained it to be on the vehicle in a stepwise manner (e.g. initially being on a stationary vehicle, then when the vehicle was idling, then when driving slowly etc)
- ☐ The animal was already used to being transported on a motorcycle/moped when I acquired the vehicle
- ☐ I do not remember/I do not know

12.

In this survey, animal welfare means the animal's subjective experience of the situation.

Do you feel like other motorcyclists/moped riders take the animal's welfare into consideration?

- ☐ Yes
- ☐ No
- ☐ I do not know
- ☐ Explain why _____

13.

Choose only one answer alternative.

How long is the maximal drive you have been transporting the animal on the motorcycle/moped?

- ☐ Less than 1 hour
- ☐ 1 h
- ☐ 2 h
- ☐ 3 h
- ☐ 4 h
- ☐ 5 h
- ☐ 6 h
- ☐ 7 h
- ☐ 8 h
- ☐ 9 h
- ☐ 10 hours or more

14.

Do you think that motorcycles/mopeds are good/appropriate transport alternatives for companion animals?

- ☐ Yes
- ☐ No
- ☐ I do not know
- ☐ Explain why _____

15.

Have you been taking the following precautions into consideration for the animal?

	Yes	Sometimes	No
Weather	☐	☐	☐
Protective gear	☐	☐	☐
The size of the transportation cage/area where the animal is situated during transport	☐	☐	☐

16.

What kind of protective gear do you use for the animal?

- ☐ Nothing
- ☐ Eye goggles
- ☐ Earplugs
- ☐ Transport cage
- ☐ Transport backpack
- ☐ Helmet
- ☐ Other alternative _____

17.

In this survey, animal welfare means the animal's subjective experience of the situation.

Choose only one answer alternative.

What do you know about animal welfare?

- ☐ Nothing
- ☐ Very little
- ☐ A little
- ☐ Neither a little nor a lot
- ☐ A lot
- ☐ Very much

18.

Choose only one answer alternative.

What do you know about the animal welfare legislation?

- ☐ Nothing
- ☐ Very little
- ☐ A little
- ☐ Neither a little nor a lot
- ☐ A lot
- ☐ Very much

19.

How do you perceive the animal's responses when you approach the vehicle?

	Increased	Decreased	No noticeable change	I do not know
Breathing rate	☐	☐	☐	☐
Production of saliva	☐	☐	☐	☐
Vocalizations	☐	☐	☐	☐
Size of the pupils	☐	☐	☐	☐
Attempts to escape	☐	☐	☐	☐
Signs of anxiety	☐	☐	☐	☐
Appetite	☐	☐	☐	☐
Thirst	☐	☐	☐	☐

How do you perceive the animal's responses when you are driving with the animal?

	Increased	Decreased	No noticeable change	I do not know
Breathing rate	☐	☐	☐	☐
Production of saliva	☐	☐	☐	☐
Vocalizations	☐	☐	☐	☐
Hearing loss	☐	☐	☐	☐
Size of the pupils	☐	☐	☐	☐
Attempts to escape	☐	☐	☐	☐
Signs of anxiety	☐	☐	☐	☐
Signs of nausea	☐	☐	☐	☐

How do you perceive the animal's responses immediately after the drive?

	Increased	Decreased	No noticeable change	I do not know
Breathing rate	☐	☐	☐	☐
Production of saliva	☐	☐	☐	☐
Vocalizations	☐	☐	☐	☐
Hearing loss	☐	☐	☐	☐
Size of the pupils	☐	☐	☐	☐
Attempts to escape	☐	☐	☐	☐
Signs of anxiety	☐	☐	☐	☐
Signs of nausea	☐	☐	☐	☐
Appetite	☐	☐	☐	☐
Thirst	☐	☐	☐	☐

20.

(e.g. safety, traffic, transport alternative, enjoyment, fear or other aspects that can impact the animal, the driver, society or others).

How do you feel about animals being transported on motorcycles/mopeds?

☐ Write it down _____

21.

Is there anything else you want to add?

☐ Please write it down _____

22.

To send in the answers, click on "Yes".

Thank you for your participation!

☐ Yes

☐ No

Appendix 2

Distribution of the online survey

This screenshot shows how the survey post was designed for the eight selected FB groups.

Hi!

The survey is aimed at motorcyclists and moped riders that either drive with or without an animal onboard.

My name is Elvira Wallander, and I am now currently preparing my data collection for my master student work in the spring of 2026, at the Animal Science Program at Swedish University of Agricultural Sciences (SLU). With this online survey, I want to investigate motorcyclists' and moped riders' perceptions of driving with an animal on a two-wheeled vehicle and identify possible risks. I am a motorcyclist, have been travelling mostly as a passenger within Europe and about two years ago I travelled with my own motorcycle within Europe. Outside of my big passion for motorcycles, animals is another and as I personally have started to see more motorcyclists and moped riders driving with animals in many different ways, I got very interested in investigating this further.

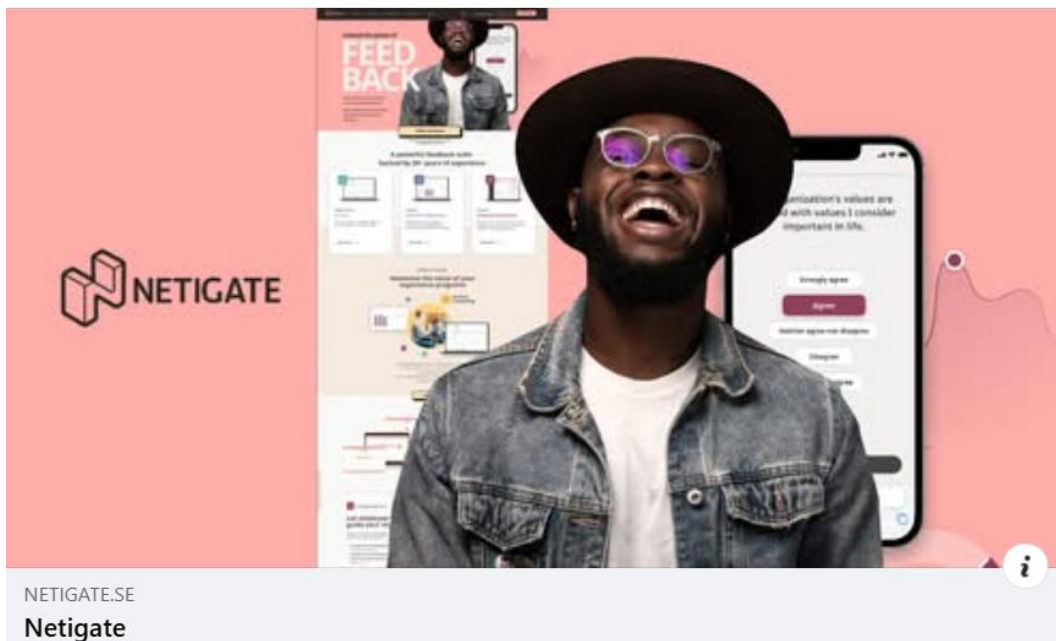
The survey takes about 3-7 minutes to fill in and is open until 2025-10-16. I am extremely thankful in case the survey is further distributed to motorcyclist and moped riders that has not encountered the survey. The survey response is processed anonymously and will be used as a basis for my student work. By accepting the terms (Terms & consent [first page in the survey]), you consent to SLU processing your personal data. You can discontinue your participation at any time. For questions, you can contact me through mail at eewr0002@stud.slu.se.

Link to online survey:

[<https://www.netigate.se/ra/s.aspx?s=1253395X496845051X96065>]

(<https://www.netigate.se/ra/s.aspx?s=1253395X496845051X96065>)

Thank you for your participation!



This screenshot shows how the survey was published through SMC on their website. The text and pictures were also published on their social media on FB and LinkedIn, in a similar structure to FEMA's post presented below.



Opinion School Sport Travel Ung MC-Livet Om SMC Våra distrikt

Medlemssidor

ELVIRA BEHÖVER DIN HJÄLP MED SIN MASTERUPPSATS!

Elvira behöver din hjälp med sin masteruppsats!

26 juni 2025

SMC har blivit kontaktad av Elvira, som behöver hjälp från motorcyklister och mopedister för sin masteruppsats vid Sveriges Lantbruksuniversitet (SLU) i Uppsala. Uppsatsen ska skrivas nästa år och handlar om transport av sällskapsdjur på motorcyklar/mopeder och välfärdsrelaterade aspekter.



För att förbereda skrivandet behöver Elvira samla in data och information. Hon kommer att undersöka lagstiftningar och identifiera eventuella välfärdsrisker för sällskapsdjuret. Dessutom behöver hon få insikt i hur vi motorcyklister gör när vi tar med våra sällskapsdjur och våra åsikter kring transport av djur på motorcyklar och mopeder, vare sig du kör med djur eller inte.

Nedan hittar du en länk till enkäten, som är på engelska. Det tar endast 3 till 7 minuter att svara på hela undersökningen och ditt svar förblir anonymt.

"Jag är själv motorcyklist och har sedan två år rest med min egen motorcykel inom Europa. Förutom min stora passion för motorcyklar har jag också ett stort intresse för djur. När jag har sett fler och fler motorcyklister transportera djur på olika sätt blev jag väldigt nyfiken på att undersöka detta närmare. Tack för din hjälp och ditt bidrag till min uppsats!" säger Elvira till SMC.

Till enkäten: <https://www.netigate.se/ra/s.aspx?c=12533955X466845051X06065>



Dela



This screenshot shows how the survey was published through FEMA on their FB page.



Federation of European Motorcyclists' Associations

26 juni 2025 · 🌐

...

Pets on motorcycles: Swedish student Elvira needs your help with her master's thesis!

Elvira is seeking assistance from motorcyclists and moped riders for her master's thesis at the Swedish University of Agricultural Sciences (SLU) in Uppsala. The thesis, which will be written next year, focuses on the transport of pets on motorcycles and mopeds, as well as welfare-related aspects.

To prepare for the writing process, Elvira needs to gather data and information. She will examine regulations and identify any potential welfare risks for pets. Additionally, she wants to gain insights into how motorcyclists transport their pets and their opinions on the subject, whether or not they personally transport animals on motorcycles or mopeds.

Here is the link to the survey, which is in English. It only takes a few minutes to complete, and your response will remain anonymous:

<https://www.netigate.se/ra/s.aspx?s=1253395X496845051X96065>

Elvira: "I am a motorcyclist myself and have been traveling across Europe on my motorcycle for the past two years. Alongside my great passion for motorcycles, I have a deep interest in animals. Seeing more and more motorcyclists transporting pets in various ways sparked my curiosity and inspired me to investigate this topic further. Thank you for your help and contribution to my thesis!"



This screenshot shows how the survey was published through SMC in their magazine called “MC-Folket”.



Länk till
enkäten

ELVIRA BEHÖVER DIN HJÄLP MED SIN MASTERUPPSATS

SMC har blivit kontaktade av Elvira, som behöver hjälp från motorcyklister och mopedister för sin masteruppsats vid Sveriges Lantbruksuniversitet (SLU) i Uppsala. Uppsatsen ska skrivas nästa år och handlar om transport av sällskapsdjur på motorcyklar/mopeder och välfärdsrelaterade aspekter.

För att förbereda skrivandet behöver Elvira samla in data och information. Hon kommer att undersöka lagstiftningar och identifiera eventuella välfärdsrisker för sällskapsdjuret. Dessutom behöver hon få insikt i hur vi motorcyklister gör när vi tar med våra sällskapsdjur och våra åsikter kring transport av djur på motorcyklar och mopeder, vare sig du kör med djur eller inte.

Här ovan hittar du en länk till enkäten, som är på engelska. Det tar endast tre till sju minuter att svara på hela undersökningen och dina svar är anonyma.

”Jag är själv motorcyklist och har sedan två år rest med min egen motorcykel inom Europa. Förutom min stora passion för motorcyklar har jag också ett stort intresse för djur. När jag har sett fler och fler motorcyklister transportera djur på olika sätt blev jag väldigt nyfiken på att undersöka detta närmare. Tack för din hjälp och ditt bidrag till min uppsats!”, säger Elvira till SMC.

This screenshot shows how the survey was distributed through SMC in an email newsletter distributed to members.

Hjälp Elvira med sin masteruppsats

SMC har blivit kontaktad av Elvira, motorcyklist och student vid Sveriges Lantbruksuniversitet (SLU), som nu behöver vår hjälp inför sin masteruppsats.

Hon vill undersöka hur motorcyklister och mopedister transporterar sina sällskapsdjur och vilka välfärdsaspekter som kan vara viktiga att tänka på.

För att samla in värdefull kunskap har Elvira skapat en enkät, och här kan vi i SMC-gemenskapen bidra. Oavsett om du själv kör med djur eller inte, är dina erfarenheter och åsikter viktiga för att få en helhetsbild.

– "Jag är själv motorcyklist och har sedan två år rest med min egen motorcykel inom Europa. När jag har sett fler och fler motorcyklister transportera djur på olika sätt blev jag väldigt nyfiken på att undersöka detta närmare. Tack för din hjälp och ditt bidrag till min uppsats!" berättar Elvira.

Enkäten är på engelska, tar bara 3–7 minuter att svara på och är helt anonym. Ditt svar gör skillnad och hjälper Elvira att genomföra sin forskning.

→ [Till enkäten](#)



Detta email har skickats till: elvira.w@slu.se

Ämnet för detta nyhetsbrev är: Nyhetsbrev. Om ämnet inte intresserar dig kan du enkelt [ändra eller avsluta dina prenumerationer här](#)



Sveriges MotorCyklister
Svårvägen 29
162 33 Danderyd
Tfn 0243-800 70

Appendix 3



Sveriges lantbruksuniversitet
Swedish University of Agricultural Sciences

Department of Applied Animal Science and Welfare
*Transportation of pet animals on
motorcycles/mopeds and its effect on animal
welfare*

2025-05-27

Information about personal data processing at SLU for participation in studies about the welfare of companion animals (cats and dogs) transported on a motorcycle or moped and the motorcyclists and moped rider's attitudes.

Responsible for Personal data

The Swedish University of Agricultural Sciences (SLU) is responsible for all processing of your personal data.

Contact persons and responsible for the study is the student Elvira Wallander (eevr0002@stud.slu.se) and the main supervisor Therese Rehn (therese.rehn@slu.se).

The Data Protection officer at SLU can be reached via dataskydd@slu.se.

Purpose

In this study, we aim to investigate motorcyclists' and moped riders' perceptions of the animal's welfare during transportation and if any other additional safety hazards are experienced with driving with an animal. This is done by filling out a questionnaire online that focuses on aspects concerning the driver's perceptions about the animal's welfare before, during and after a drive as well as the driver's, that does not drive with an animal themselves, perceptions about animals and transportation on a vehicle with two wheels.

The results from the study will not be able to be linked to individual people as the answers will be anonymous, and the results will be presented at a sub-population level.

SLU processes personal data in accordance with the EU's General Data Protection Regulation, abbreviated GDPR.

Postal address: Box 7060, 750 07 Uppsala
Visiting address: Ulls väg 26
Org nr: 202100-2817
www.slu.se

Tel: 018-67 10 00

Legal basis

The processing of your personal data in this project is based on your consent, which you approve when accepting the terms, conditions and consent page of the survey.

The principle of publicity

SLU may come to disclose your personal data to the person requesting one public document if your personal data is contained in it, in accordance with the principle of public access, unless it is to be kept confidential.

Transfer of personal data

We will not transfer personal data to any parties outside SLU. However, data will be stored at Netigate as collection takes place via their survey tool.

International transfer

We do not cooperate with any organization outside the EU/EEA, and thus no personal data will be transferred there.

Storage

No personal data (IP-address, name, email address, location) will be stored longer than necessary. In this study, the data will be stored for a maximum of 5 years.

Your personal data is also stored for as long as required by legislation on public documents and government archives.

Your rights

You have the right by law to have your data deleted, corrected, restricted and to access to the personal data that is being processed, as well as the right to object to the processing. To exercise your rights, please contact the Privacy and Data Protection function using the contact details below.

Withdrawal of consent

You always have the right to withdraw your consent to participate in the study. To withdraw your consent, you should contact someone in the project management:



Sveriges lantbruksuniversitet
Swedish University of Agricultural Sciences

Elvira Wallander (Student)

Email address:

eevr0002@stud.slu.se

Therese Rehn (Main supervisor)

Email address: therese.rehn@slu.se

Points of view

If you have any points of view on SLU's personal data processing, you can contact the Data Protection officer at dataskydd@slu.se.

If you are not satisfied with SLU's response, you can file a complaint about SLU's processing of your personal data with the Swedish Data Protection Authority via datainspektionen@datainspektionen.se.

You can read more about the Swedish Data Protection Authority's supervision at <https://www.slu.se/en/about-slu/contact-slu/personal-data/>.

Postal address: Box 7060, 750 07 Uppsala
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Org nr: 202100-2817
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Appendix 4



Consent: Interview regarding transportation of pet animals on motorcycles/mopeds and its effect on animal welfare

Introduction with purpose of the study

In recent years, more and more pets have been seen traveling on motorcycles/mopeds and then especially on social media. No studies have been conducted on animal welfare in that type of transport, therefore there is both a need and interest in investigating the area further. The purpose of this study is to investigate first and foremost motorcyclists'/moped riders' attitude towards the transport and perception of animal welfare in connection with the transport, as well as identify any risk factors. This to give us information about if motorcycle/moped are a means of transport that is an animal-friendly alternative and whether there are different attitudes based on which country you come from.

What will happen today? How will the study proceed?

The study will include different elements where motorcyclists'/moped riders' perceptions and attitudes towards pet welfare in connection with transport are investigated. You as a participant will be asked to answer some questions selected from a previously sent out survey (2025) and some questions will be based in areas which was often brought up in the open free text responses. The interview will provide an opportunity to go into detail on topics of specific interest and should not take more than 45 minutes.

Management of audio files, etc. What does the study mean to you?

To investigate different perspectives, perceptions and attitudes towards motorcycles/mopeds as a transport option for pets and how it affects their welfare, I need to ask specific questions which could possibly be perceived as personal. I do not expect however that strong emotional reactions will be experienced, but some challenge may arise for you anyway. Of course, you are completely anonymous in the study, and you can choose to discontinue your participation at any time without further explanation.

Voice recording will be conducted for the sole purpose of serving as a memory aid for me in my master's project. The recording will be saved in a file, on my password-protected computer. An anonymized written version of the interview will be created and I will delete the recorded files as soon as the written version of the interview is complete. The files will not be shared with anyone else.

Participant's consent:

I have verbally and in writing been informed about the study and have taken part in and understood the above written information. I am aware that my participation in the study is completely voluntary and that I at any time and without further explanation can discontinue my participation.

Date, place

Signature, participant

Signature, supervisor

Name clarification, participant

Further information about the above study can be provided by: Elvira Wallander, eevr0002@stud.slu.se, 0723-256515 (student), Therese Rehn, therese.rehn@slu.se, 018-672108 (supervisor).

Appendix 5

The interview is part of a master's project on welfare-related aspects of pets with a focus on means of transport such as motorcycles/mopeds and any differences in attitude regarding this between different countries. The goal today is for me to gather information on your own perception about the transport of companion animals on a two-wheeled vehicle, and your own expertise which contributes to an increased understanding in the field. We would like to know more about your experience, knowledge, any challenges and perspectives on pets transported on motorcycles/mopeds.

The interview should not take more than 45 minutes. It will consist of some questions from the survey sent out this summer (2025) and some questions will also be based on what was often brought up in the open free text responses. The interview will provide an opportunity to go into detail on topics of specific interest. You can always refrain from answering one question, and you are welcome to ask about the reason for a specific question or anything else. You can also at any time choose to discontinue your participation.

I will record our conversation via a voice recording. The recording is only intended to be a memory aid for me. The voice recording will be transferred to a file, on my password-protected computer. I will make an anonymized written version of the interview, a so-called transcription, which will be used for my master's project at the Swedish University of Agricultural Sciences. After the transcription, I will delete the recording file.

I need your informed consent from you (which I will ask for shortly). I want to clarify that this conversation is confidential and that your name and other information that can identify you will not be disclosed to anyone else. Anonymous quotes from our conversation may be used in academic presentations and scientific publications.

I would now like to ask for your consent to participate in the interview and to have it recorded [if no to any of the following, the interview will end].

- Was the description of what you consent to, clear to you?

[if no: read the description again]

- Do you consent to the interview being recorded and transcribed?

Thank you.

Appendix 6

Interview questions selected from the online survey

- “Have you seen others drive with an animal on a motorcycle/moped?”
- “Have you ever driven with an animal on a motorcycle/moped?”
- “What are your thoughts on animals that are transported on motorcycles/mopeds, from your own perspective?”
- “Do you think that motorcycles/mopeds are good/appropriate transport alternatives for companion animals?”
- “How do you feel about animals being transported on motorcycles/mopeds?” (*e.g. safety, traffic, transport alternative like transport box/tank bag etc, enjoyment, fear or other aspects that can impact the animal, the driver, society or others*)

Interview questions created based on what was often brought up in open free text responses

- Do you think, from an animal’s perspective, that it is better to consider the individual rather than the species to determine if the animal likes or dislikes this type of transport? (*please elaborate your reasoning*)
- Do you think there are different attitudes between road trafficants and what they think is safe when animals are transported on motorcycles/mopeds? (*e.g. non-motorcyclist/-moped rider vs motorcyclist/moped rider*). If so, how could these look like/be described?
- Motorcycles/mopeds is often seen as less safe in case of accidents, however not too unsafe as a means of transport, some respondents in the questionnaire also claims that there is no difference between car and two-wheeled vehicles; what are your view on it?
- Many come up with their own creative solutions on how to transport animals on motorcycles/mopeds, while some use commercial alternatives or do a combination (*e.g. tank bag, custom-made topbox for better ventilation, specific jacket, modified trailer/cart*); do you think there should be more crash tested alternatives produced or does it feel safe enough with what people come up with themselves?
- Many believe that motorcyclists/moped riders do careful assessments and makes sure that the animal is seated safely and securely, while others believe that you instead should transport animals in cars; car transport has been researched more, is there any aspect that you think needs to be investigated regarding animal transport on motorcycle/moped? (*e.g. balance, noise, behaviour, stress level, wind impact, vibration, temperature change*)
- Many use harness with transport alternatives like sidecars or cages, while a few use extra clothing or windshield; do you think this reflects a lack of protection in commercial alternatives, limited knowledge or that the transport is already well adapted to the animal?

(e.g. well adapted in terms of that the driver has taken the necessary precautions to provide the animal a safe and comfortable environment, that the driver is mindful about their driving and the weather)

- Do you know any numbers/any statistics about accidents where the driver has transported an animal on a motorcycle/moped? Where have you found any information? Do you think it would be good to have? For what reasons?
- Do you know anything about if there are specific motorcycles/mopeds that are manufactured with consideration that animals shall get to be transported on the vehicle?
- Considering traffic safety, are there any risks that you see regarding how the animal might affect the driver's attention, driving style or reaction time?
- Do you know what rules apply to; animal transport/cargo on a motorcycle/moped? Where have you found any information? Did you miss anything? Do you think that the majority of those who transport animals on motorcycle/moped are familiar with the rules?
- Is there anything important about animal welfare or road safety that we have not touched, or anything else you would like to add?

Appendix 7

Interview questions selected from the online survey

1. "Have you seen others drive with an animal on a motorcycle/moped?"

"Yes, I have. Not very often, but it has occurred." (Interviewee A¹).

"Yes, many times." (Interviewee B²).

"No. Movies, not myself" (Interviewee C³).

"Yes." (Interviewee D⁴).

2. "Have you ever driven with an animal on a motorcycle/moped?"

"No." (Interviewee A and C).

"Many times." (Interviewee B).

"Yes. ... a dog, but in a cat cage ..." (Interviewee D).

3. "What are your thoughts on animals that are transported on motorcycles/mopeds, from your own perspective?"

"It's partly about safety for the rider, that is that the transport of the animal, I think, should not involve risk for the rider. ... next aspect then, that the transport of the animal should not involve unnecessary suffering for the animal in a possible incident. ... I don't think, today, that there are any really good solutions where you can transport animals in a way that is safe, the motorcycle ... is a vehicle where you are, to be considered as, quite unprotected ..." (Interviewee A).

"Should you drive them, then you should feel that like you're doing it as safely ... as possible ... There are a lot of small dogs, since they look up, then I don't know how safe they are really." (Interviewee B).

"One is that ... you meet the provisions that exist, which I'm ... a little weak on in form of whether there are specific provisions for particularly transport ... of animals and so on ... The second is common sense, should you have responsibility for an animal, then you have to like have responsibility ... for what can happen in connection with traffic for driving with animals." (Interviewee C).

"I think it's good. If they have some place to sit in a safe way ... But there's like not so much to get hold of and those that can be obtained, they are special orders ... you have a box, in front, on the tank ... it's not very optimal if you don't have like an upright motorcycle. ... My friend has a backpack. ... but then she must have it on the back and it's good if the dog is small and doesn't weigh that much." (Interviewee D).

¹ Personal Communication, 2026-02-04, A representative of a non-profit organisation on motorcycle traffic policy

² Personal Communication, 2026-02-06, A representative of a motorcycle club founder

³ Personal Communication, 2026-02-06, A representative of an organisation for motorcycle suppliers

⁴ Personal Communication, 2026-02-12, A representative of a traffic teacher

4. "Do you think that motorcycles/mopeds are good/appropriate transport alternatives for companion animals?"

"... maybe that two-wheeled motorcycles are not entirely suitable. At least not for longer transports of animals, but it depends of course also on where you drive, how you drive, and in what context and how long the animal is exposed in traffic." (Interviewee A).

"... I think it's better for a dog in a car. ... all about environmental training. ... The most important thing then is the safety, because the dog can't influence that." (Interviewee B).

"Yes, it's as appropriate as it's appropriate in other matters. ... I don't know if it should be included ... I think, well, it requires that you know what you're doing to an even greater extent. But it's like driving another person, all of a sudden it's in the hands of the rider. It's the same principle, so it's common sense unless there's absolutely a law." (Interviewee C).

"Appropriate, I probably wouldn't say it's. ... But ... there is a need for it, because not everyone can afford a car. A motorcycle is cheaper to transport yourself with ... the supply, I think, is pretty bad generally for different types of animals." (Interviewee D).

5. "How do you feel about animals being transported on motorcycles/mopeds?" (e.g. safety, traffic, transport alternative like transport box/tank bag etc, enjoyment, fear or other aspects that can impact the animal, the driver, society or others)

"... I would also want to have with me, my dogs, when I ride ... to be able to make several trips by motorcycle where I, instead of leaving the dog to someone else, actually can take them on the trip. ... it's about the risks generally around transporting animals on a motorcycle and how it should be done in the best way to not expose yourself, others or the animal ... to discomfort or risks." (Interviewee A).

"... it depends on how they are transported. ... I think the principle must be that you should be able to fall over without the dog being injured, even if it gets scared." (Interviewee B).

"... I don't feel anything ... Sometimes a bit nice to see ... but at the same time if there's a big problem with accidents ... then maybe ... I, myself, wouldn't probably dare do it, because things can happen with animals that get scared ..." (Interviewee C).

"So, I think that the idea is good, if you can do it in a safer way. Like build some form like ... crash-proof cage, not optimal maybe on a motorcycle, but something similar ... due to the price, I think that people challenge fate a little more ..." (Interviewee D).

Interview questions created based on what was often brought up in open free text responses

6. Do you think, from an animal's perspective, that it is better to consider the individual rather than the species to determine if the animal likes or dislikes this type of transport? (please elaborate your reasoning)

"... I think that you, to the greatest extent possible, should base it from the individual. I think that it's not natural, neither for dogs nor cats ... we as animal owners are obligated to ensure that our animals are not harmed." (Interviewee A).

"It's species ... a frog, wouldn't have like cared ... I think it's about environmental training, regardless of animal really." (Interviewee B).

"No, no idea about it." (Interviewee C).

"I don't think the animals jump for joy ... I think you must take it from animal to animal. You can't just say that everyone likes it or everyone doesn't like it, but you must look at the animal's best interests and then from day to day. ... you shouldn't force it. Maybe people do that then, what do I know? I hope not." (Interviewee D).

7. Do you think there are different attitudes between road trafficants and what they think is safe when animals are transported on motorcycles/mopeds? (e.g. non-motorcyclist/-moped rider vs motorcyclist/moped rider). If so, how could these look like/be described?

"Because, very many, who don't drive a motorcycle also have the perception that it's almost life-threatening to drive a motorcycle, which we motorcyclists of course don't share because we know that it's connected to, somewhere, that you have ... a good basic education, that you have common sense, that you are aware of the risks. ... I can guess that quite many non-motorcyclists stand very hesitant to this with transporting animals on a motorcycle." (Interviewee A).

"Those who have chosen to take a motorcycle license, they know more about it, have chosen it and made a choice already. ... they, always, will think that it's less dangerous than those who don't have a motorcycle license and don't know motorcycles." (Interviewee B).

"... people have opinions of all sorts ... It's a sliding scale in the normal distribution curve ... but the vast majority, I think just, it's up to each one. As long as you like drive safely and you try to do what you can ..." (Interviewee C).

"... people who have animals themselves, then maybe they just, no I would never do that to my animal ... while those who don't have animals might just, yes but that was cute and smart. Then there could be, maybe, those who already drive a motorcycle and have animals, thinking that ... I might also want to ... But then I thought also ... type of motorcycle ... type of dog or cat ... how it sits ... how the rider drives ... such first impressions determine also if you think it's safe or not ..." (Interviewee D).

8. Motorcycles/mopeds is often seen as less safe in case of accidents, however not too unsafe as a means of transport, some respondents in the questionnaire also claims that there is no difference between car and two-wheeled vehicles; what are your view on it?

"You can never achieve the same safety on a motorcycle as in the car. ...there's not even any guarantee that you and the motorcycle even will land on the same place in an incident. There's nothing that protects more than the equipment you have ..." (Interviewee A).

"A motorcycle is always more exposed so it's not possible to compare. ... Regardless, you will never be able to see it as a dog are equally safe on a motorcycle." (Interviewee B).

"People make up all sorts of things ... it's based on how you drive and you make sure that you, well ... sobriety and ... that you don't drive too fast ... then it won't be a problem. ... a little more dangerous on a motorcycle." (Interviewee C).

"As a transport in itself, then there is, well, no difference. ... it's, well, more about what's appropriate ... there's a difference safety-wise and sound-wise, and air, weather, wind, [external influence]. ... I would say

that a car is safer than a motorcycle or moped, if you transport the dog or cat in a good way in the car."
(Interviewee D).

9. Many come up with their own creative solutions on how to transport animals on motorcycles/mopeds, while some use commercial alternatives or do a combination (e.g. *tank bag, custom-made topbox for better ventilation, specific jacket, modified trailer/cart*); do you think there should be more crash tested alternatives produced or does it feel safe enough with what people come up with themselves?

"I absolutely understand this thing with a trailer. I don't know if I'd want any of my dogs straight in the exhaust pipe all the time. Because that's where they end up. ... the vehicle is still, such, that ... there is a certain level and security and [there is no guarantee]. ... but it should be possible ... to come up with safe alternatives, at least as far as possible, and that I'd maybe rather see that than that people make their own variants." (Interviewee A).

"I wouldn't maybe spend money on it, there is an incredible amount of money in such a solution ... It's clear that it would be good, I think, because then there are more that would avoid leaving the dogs at home. But it's still not a big market." (Interviewee B).

"I don't think it's something that should be done ... if there is a need on the market, then the market will accommodate it. ... should you put a wagon extra on a motorcycle, then it will affect how you drive ..."
(Interviewee C).

"It like [should] be as good as possible for the animal but also as good as [possible for] me who will drive the motorcycle, so that it doesn't start like flutter around and like bounce and stuff, since I only have two wheels, it must be ... balanced and like follow the motorcycle." (Interviewee D).

10. Many believe that motorcyclists/moped riders do careful assessments and makes sure that the animal is seated safely and securely, while others believe that you instead should transport animals in cars; car transport has been researched more, is there any aspect that you think needs to be investigated regarding animal transport on motorcycle/moped? (e.g. *balance, noise, behaviour, stress level, wind impact, vibration, temperature change*)

"... the rider's safety and then everything is affected, as for example like the motorcycle's dynamic, centre of gravity, performance. ... partly, you place the weight probably on quite far back and quite high up, which we don't know [if it is] optimal. It's also a weight that's movable. ... What does it mean as said with noise, wind, environment at all, then stress impact, everything like that, the animal's perspective, and then we haven't even gotten to what happens in the event of a possible incident and then of course the rest of the environment. What risks could this pose? So, I see that once again, the risk assessment becomes comprehensive." (Interviewee A).

"So, I think it would be great if someone else could make one like this cage that I have made but more commercially of course. ... there was absolutely nothing sensible in the whole world. ... Now we have, thankfully, a law in Sweden that says that dogs are not allowed to be at home for how long as whatever, but the rest of the world doesn't have that. ... good for dogs if they come with to work instead" (Interviewee B).

"It's common sense ... it's not like anyone else should have an opinion on it if it's not codified in law, now it's not." (Interviewee C).

"... those who have animals and transport them, I think or I want to believe it anyway, that they at least try to do like their best ... should maybe be some form of ... Make sure that these criteria, like the points, that you try to fulfil them like for best animal experience sort of [guideline]." (Interviewee D).

11. Many use harness with transport alternatives like sidecars or cages, while a few use extra clothing or windshield; do you think this reflects a lack of protection in commercial alternatives, limited knowledge or that the transport is already well adapted to the animal? (e.g. well adapted in terms of that the driver has taken the necessary precautions to provide the animal a safe and comfortable environment, that the driver is mindful about their driving and the weather)

"... it would be better if there were well-proven methods than for people ... to take chances and believe. But at the same time, I also think that ... you shouldn't forget that animal owners want their animal the absolute best, as a rule, so that you're probably very, very aware of how you drive and choose the opportunity and ... the road and other things, based on that, to create as little discomfort as possible. But I think that this is so unusual that the knowledge probably isn't really there ..." (Interviewee A).

"I don't know how it, no, pass on it." (Interviewee B).

"... as long as it's not law and I don't think [it] even should be legislated. ... I mean, a normal person doesn't ride around ... with a cat freely ... in their arms on a motorcycle. It would like never work so I think like the problem resolves itself in the form of that people are still wise enough." (Interviewee C).

"... it can't cost us much either, because that's usually what things depend on ... there's quite a lot for animals abroad. But now I don't know if it's like really great stuff sometimes, so when you look, like people then dress their animals up in all sorts of ways. So, it sorts of, it doesn't feel like there's like any sensible supply." (Interviewee D).

12. Do you know any numbers/any statistics about accidents where the driver has transported an animal on a motorcycle/moped? Where have you found any information? Do you think it would be good to have? For what reasons?

"It's at least not any traffic-related institution that have that statistic, but then it's possible that you should look at those cases where the animal has been injured and treated. ... It would certainly be interesting, but I think that it will be more difficult to obtain relevant data." (Interviewee A).

"No. No, I can't say that I would need to have one like that." (Interviewee B).

"No. I can give you a tip. ... the Swedish Transport Agency has the national traffic injury register. ... It's called Strada. ... I don't think so. ... If the bureaucrats think there could be reasons, then they do." (Interviewee C).

"Now I work in that profession, so I want statistics. ... it's becoming more and more, then maybe you need to make people aware too. ... Then it's up to you to decide how you want to do it." (Interviewee D).

13. Do you know anything about if there are specific motorcycles/mopeds that are manufactured with consideration that animals shall get to be transported on the vehicle?

"Not what I know. ... that the motorcycle industry would build bikes for pets ... that might come, but then it needs to become a bigger trend, I think. ... I have a difficulty in seeing that it's some kind of sales pitch ..." (Interviewee A).

"That I can't imagine. That I don't think exists." (Interviewee B).

"... I can guarantee that it doesn't exist, but I don't know." (Interviewee C).

"No. The only thing I can think of is more animal-friendly, or it's not optimal but it's more animal-friendly, and it's an electric vehicle. But they have also a different sound ... and I don't know if it's better or worse for the animal." (Interviewee D).

14. Considering traffic safety, are there any risks that you see regarding how the animal might affect the driver's attention, driving style or reaction time?

"Partly it depends of course on how the animal, which still can be considered either as a passenger or some form of cargo, how you have secured the cargo ... so that the animal can't physically affect the rider. ... I guess that it's a quiet valuable cargo, so already there I think that it could create a somewhat elevated stress level in the rider." (Interviewee A).

"It's kind of like when you're a parent and have a child ... then you think also one round more and ... you take no risks at all." (Interviewee B).

"It's a distraction. So, the answer is well, yes, might well be an increased risk ... many times surely then these animals are relatively used to this and even find it really fun, so I don't know." (Interviewee C).

"... an animal, only if it wants to like shake itself, it shakes itself and are you then not prepared ... then you'll be surprised and then maybe you do something and then you ride into the ditch. ... I think it's a quiet big risk still, if the animal gets too much space ... but you don't want to have too little space either because it must still be able to sit comfortably or lie down like fairly comfortably." (Interviewee D).

15. Do you know what rules apply to; animal transport/cargo on a motorcycle/moped? Where have you found any information? Did you miss anything? Do you think that the majority of those who transport animals on motorcycle/moped are familiar with the rules?

"No, and I can't say that I'm particularly well-read when it concerns animals. I know that animals in all transport ... should be confined and secured. ... I know that you are obliged to secure the cargo in a way that doesn't pose a risk, especially to other road users ... I don't know the road traffic ordinance by heart ... in general, road users regardless of qualification today, my feeling is that they ... have a poorer knowledge ... of the provisions actually." (Interviewee A).

"No idea. I should maybe do since I've been driving so much. ... Yes that I think that they are aware ..." (Interviewee B).

"I've seen in the law ... you are not allowed to drive three people on ... a two-wheeled motorcycle and so on ... It's a Permutation law, because when a motorcycle is manufactured, then it must be type approved by an EU country with something like the Swedish Transport Agency or similar. When it's done, then certain restrictions are also set ... I don't think so." (Interviewee C).

"... seat belt or transport cage, like that's what's universal for vehicles, but I haven't seen that there is something specific for particularly motorcycle or moped ... Road traffic legislation. You can get it if you want

later. ... No. ... I think that many, regardless of vehicle, can't drive as well as they think that they can, and they don't have the information and knowledge that they think that they have. ... you drive a car and a motorcycle, for example, then you can still think into both types of perspectives. ... But just that with attaching animals and what applies to it ... I don't think that they think that it's a law ...” (Interviewee D).

16. Is there anything important about animal welfare or road safety that we have not touched, or anything else you would like to add?

“What I'm thinking of mainly is ... should you transport animals on a motorcycle or moped, by all means, but perhaps especially on a motorcycle, then I think that you should make ... a proper risk assessment based from your own, the animal's, and other road user's perspectives. ... it's clear that people are differently risk-prone generally too ...” (Interviewee A).

“... can't think of anything special.” (Interviewee B).

“Generally speaking, you can be a little careful when you transport a pet, an animal ... that truly is placed in non-familiar surroundings in this case, but I have no opinions on how to do [it].” (Interviewee C).

“No, I think that we've talked about the most, like, that is like the most important points, so to speak.” (Interviewee D).

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