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Improving Transportation Security - Case Company x

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This thesis looks at the present situation concerning transportation security on the road, with the focus on cargo theft and how to prevent it with methods created by Transported Asset Protection Association, International Road Transport Union, and European Commission. Cargo theft causes losses worth of billions of euros yearly. The statistical sources regarding cargo theft could get lost in other statistics, this heavily limited these sources.

The purpose of this thesis was to create up to date guidelines for a small delivery company operating in Helsinki metropolitan area to increase the security of their delivery. These guidelines were created to be in line with the current security measures to protect against cargo theft. A Questionnaire given to the company helped to narrow down the guidelines to fit the needs of the cooperative company.

Theoretical framework gave a conclusion for two crucial aspects can be protected when it comes to cargo theft, the target which in this case was the vehicle and the location where the possible crime is going to happen. Sufficient physical security measures added to both vehicle and the location together with the guiding security training given to the drivers can limit or even erase vulnerabilities in these. Secure parking was found out to be the best single method to reduce cargo theft.

In conclusion of this thesis, cargo theft is a very current problem in Europe, but with proper training given to the drivers, the problem can be reduced. Categorizing cargo theft separately from other theft statistics should be a norm so that the cargo theft problem could be noticed by the public better.

Keywords: transportation, cargo theft, secure parking

Turvallisuusalan koulutusohjelma

Lari Koskinen

Kuljetusturvallisuuden parantaminen - yritys x

Vuosi 2018 Sivumäärä 32

Tämä opinnäytetyö tarkkailee kuljetusturvallisuuden nykytilannetta painottuen rahti varkauksiin ja miten estää nämä käyttäen menetelmiä joita ovat kehittäneet Transported Asset Protection Association, International Road Transport Union sekä Euroopan komissio. Rahti varkaudet aiheuttavat vuosittain miljardien eurojen vahinkoja. Tilastotiedot liittyen rahtivarkauksiin ovat myöskin rajoitetut, koska nämä tilastot useimmiten sekoittuvat muiden varkaustilastojen joukkoon.

Opinnäytetyön tarkoitus oli tehdä ohjeistus pienelle kuljetus yritykselle joka toimii Helsingin alueella, kasvattaa yrityksen kuljetusten turvallisuutta. Nämä ohjeistukset noudattavat tämänhetkisiä rahtiturvallisuus käytäntöjä. Kysely joka tehtiin yritykselle auttoi kaventamaan ohjeistusta ja sopeutuu yrityksen tarpeisiin.

Opinnäytetyön tietoperustan tulos osoitti kaksi avain asiaa jotka voidaan turvata, kohde joka opinnäytetyön kohdalla on ajoneuvo ja sijainti jossa mahdollinen varkaus tapahtuu. Ajoneuvo ja sen sijainti voidaan turvata riittäväillä fyysisen turvallisuuden menetelmillä sekä kuljettajien turvallisuus koulutuksella. Yksi selkeä tapa vähentää rahtivarkauksia oli suojattujen parkkipaikkojen käyttäminen.

Opinnäytetyön tulos osoitti, että rahtivarkaus on vallitseva ongelma Euroopassa, mutta tätä ongelmaa voidaan vähentää kuljettajien kunnollisella turvallisuuskoulutuksella. Rahtivarkauden luokittelu tilastoissa erilleen muista varkauksista helpottaisi ongelman huomausta myös julkisuudessa.

Avainsanat: kuljetus, rahtivarkaus, turvallinen pysäköinti

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1 Introduction

This thesis studies the current issues in the transportation industry with the focus laying on how to prevent theft and robbery during transportation. The entire supply chain relies on the success of transportation whether it is the transportation of raw materials to the production facility or the delivery of the goods to the retailer and from there to the consumer. There is no denying transportation is an integral part of the supply chain and relies on the success of it (Burns 2016, 1). Burns also states that the supply chain and logistics need to be secured, since these are a crucial part of the economy by generating work and money, and these two factors lead to better living standards (Burns 2016, 45).

According to a research done by European Parliament (2007), the theft of vehicles and their cargo costs by estimate over 8.2 billion euros yearly. The losses caused by cargo theft is still an issue according to a more recent calculation done by FreightWatch International (2016) which estimated the cost of cargo theft in Europe being €11.6 billion across 27 EU member states. An analysis lead by Transported Asset Protection Association (2017) In 2017 the approximated the loss caused by cargo theft results €1.3 billion a year in Germany alone. With even further losses valued at €900 million every year due to delivery delays and other costs caused by the theft.

1.1 Background and purpose

The purpose of this thesis is to create guidelines for a small delivery company operating in Helsinki metropolitan area by inspecting the possible security threats drivers may encounter during their work. The company delivers a wide array of different products from laundry to food and printed products, some of these products are more attractable for theft. Naming the company in this thesis would not give more added value to it, as these guidelines could be used by any delivery driver to protect their cargo better. The guideline is aimed to help the drivers of the cooperative company to prevent the theft and robbery of their truck and cargo, by giving suggested measures for the drivers to ensure that there is no loss caused by theft or robbery during transportation. Whether the vehicle is on the move or parked, the drivers have an idea how to reduce the risk of being a target.

This thesis focuses on applying existing methods for the company with the guidelines and does not try to create new information with new techniques or tools. Instead, this thesis uses the known measures regarding transportation security regarding the guidelines. This thesis limited to securing the transportation of cargo and preventing truck theft. In this thesis, the Occupational health and safety issues in the transportation industry are not in focus. The thesis looks for answers to the following questions. What are the most concerning security risk for delivery drivers? What kind of methods do the perpetrators use? What can the drivers do themselves to reduce the chance of being a victim of cargo theft?

2 Theoretical framework

The theoretical framework of this thesis relies on previous studies in the field of transportation security and theft prevention. However, based on up to date standards in the trucking security field done by different organizations. Different printed and online sources were used to create the theoretical framework.

2.1 Definitions

This chapter goes over the key definitions used in this thesis. Some of these definitions have their dedicated section since these required more in-depth analysis considering transportation security.

Defined by Fischer, Halibozek, and Walters (2013, 3) security is an environment where a person or a group can pursue its wishes as they please, without harm or obstructions and without fearing these.

Modus operandi is a Latin term commonly shortened to "M.O.". Modus operandi means persons or groups established way of operating, which forms a distinct pattern. The term modus operandi is used to address criminal behavior, but the term is not limited to it (Investopedia 2018).

2.1.1 Transportation

Transportation is a vital part of the supply chain; transportation is the movement of goods, people, information or even services from one point to another, whether it is by sea, land, air or across the internet (Burns 2016, 1). Burns (2016, 1) also defines logistics as the management of transportation. In essence, logistics is what happens to the goods during transit, like packing, handling, and the shipment. Transportation security is there to mitigate the risk, prevent or reduce the risks in this part of the supply chain where the goods are on the move.

Vesterinen (2011, 37) defines the most vulnerable point in logistics is the point when the goods have stopped moving, applying this to transportation this could be for example driver's coffee break. Preventing thefts at this point could be one way to reduce theft. Freight pilferage is one of the five major risk factors that can happen within the supply chain (Burns 2016, 27), the other four factors affect more the other parts of the supply chain and not directly the transportation itself which is on the focus in this thesis.

2.1.2 Theft prevention

According to routine activity theory created by Cohen and Felson (1979, 588), for a crime to happen, three points must be fulfilled. The perpetrator with motivation, target and the absence of a capable guardian, removing one of these points will eliminate the chance of crime

even happening. Removing the motivation from the part of the cycle as a measure for theft prevention is challenging, what drives the motivation are the needs of the person. From Maslow's hierarchy of needs (1943), the things that could motivate the person to commit cargo theft could be counted any transported product, even if they do not fill the physiological needs, the goods could still fill the needs of financial security.

The two parts that can be focused on regarding theft prevention, in this case, are the target and the absence of capable guardian. The way we can make the target less attractive is by adding security methods and increasing the physical security of the vehicle. Moreover, the other is to make sure the thief does not get the opportunity for the theft by having capable guardian present. Cohen's and Felson's (1979, 588) third element of routine activity, the absence of capable guardian could be the location as Ekwall and Lantz have done in their study Cargo theft at non-secure parking locations (2015, 206). Interpreting this as a location gives more direction on how to deal with the third element of routine activity theory, instead of making sure that someone is watching the goods or by having security guards watching the truck at all times the focus can be more on having a secure location. Both the target, in this case, the vehicle and cargo and the area, can be protected with physical security measure and proper security guidance given for the driver to prevent loss.

2.1.3 Physical security

According to Fischer et al. (2013, 195), physical security is how a company protects its property from intrusion, theft, sabotage and other causes which could cause harm to the company's property. The delivery company cannot itself add or create, well-protected parking environment to be used by their drivers except within their facilities; therefore, the drivers need to be guided to use secured parking locations and how the drivers can spot a secure parking location. Ekwall and Lantz (2015, 213) found that 97 percent of all attacks happen at non-secure locations, this puts the importance of using secured parking locations during transportation paramount. Paying a small fee, if needed, to use a designated secured parking area is better for the long term than having to deal with the losses and additional costs caused by a cargo theft.

2.2 Trucking security

International Road Transport Union's (IRU) Road Transport Security Guidelines (2005) lists recommendations on how to secure the transportation. For this thesis, the primary focus lies on the proposals for the drivers, however looking at the manager section as well in the Road Transport Security Guidelines, shows a few things that affect the drivers as well. Managers oversee the proper security measures installed in the vehicle, as well as training the drivers to use adequate security methods. What lies on the driver's responsibility is that the goods

get to the destination intact. Both play important role in transportation and on the prevention of cargo theft.

Another standard to look at concerning transportation security is Transported Asset Protection Association's (TAPA) Trucking Security Requirements (2017) this lists practices which should be used to transport the carried goods to its destination securely. TAPA is not for profit organization, and its mission is to minimize cargo losses from the supply chain by creating standards to increase the security of transportation, mainly by road. (TAPA Mission, Vision and Values) TAPA has formed standards facility security for (FSR), air cargo security (TACSS), secure parking (PSR) and trucking security (TSR). For this thesis, Trucking Security Requirements is in focus since this help to guide the truck drivers for more secure practices during their work.

Another suitable transportation security tool besides the Trucking Security Requirements (2017) and Road Transport Security Guidelines (2005), is ROADSEC Security Toolkit developed by the European Commission (2017) which was created to address security risks in trucking operations for the European Road Freight Transport Sector. With these tools, the proper guidelines for the drivers can be developed, for the protection of their truck.

2.2.1 Securing the vehicle

Locks and seals, alarms, tracking, and communication could be used as the primary methods to protect the vehicle and trailer (European Commission 2017, 21). Preventing the thieves from gaining access to the cargo with locks or showing the possible signs of tampering with broken or resealed seals. Alarms give the possibility of causing the perpetrators to flee the scene and informing the driver and passers-by of a possible problem. Tracking devices will let the employer know if the delivery is on the correct course and communication devices for notifying of potential issues with the shipment or truck back to the employer. Some of these measures already come built into the truck, but additional means will give further protection.

Quality of any product is crucial and is more critical when it concerns security, having vulnerabilities when it comes to for locks or security cameras. Investing in security to find out that the investment was for naught due to brittle build of the lock or a cut in camera feed due to a short circuit in the camera. For this purpose, high-quality stainless-steel security locks or locking devices considering these points as suggested by the TSR (2017, 24) is something to think about, the use of electronically operated locks can be beneficial since some of them can also have security seal properties which could provide evidence of tampering. Considering using locks on the steering wheel and or gearbox suggested by European Commission (2017, 43) or other means to disable the truck even further increases the effort thieves need to go through to get parked truck moving. Soft-sided trucks and trailers are a security vulnerability since it gives easy access to the goods with only using a sharp object this was pointed out by

Barry Hochfelder (2018) in an interview with Tony Pelli, who is a supply chain risk consultant. Sometimes security comes in the way of usability or ease of access, the usage of hard-sided trucks and trailers have increased defeat resistance compared to soft-sided transport vehicles, the benefit why soft sided trucks are used is that these are easy to load, since the loading area can be all around of the trailer and, not just the back side. European Commission (2017, 43) also suggests the usage of hard-sided trucks and trailer, but if these are not available having proper slash resistant tarpaulin and adequate padlock or sealed TIR cables can be used to protect soft-sided lorries.

Alarms being a deterrent method and may cause thieves to leave the scene before being able to steal anything; car alarm was found out to be the second most effective deterrent against car thieves according to Smithers (2017), the most effective method was found out to be camera surveillance. Alerting device in every car is expected nowadays, also electronic seal, if it has the feature could also be an alarm on the back of the trailer. Tracking of the delivery vehicle is not just in case of theft, but to also keep the driver on a planned route, advise on possible traffic jams or accidents and keeping sure the driver does not take any unnecessary trips off course (European Commission 2017).

Some other possible methods to keep in mind for are panic alarms and the capability to remotely immobilize the vehicle (European Commission 2017, 43). A panic alarm would be a quick way to indicate something is very wrong. Moreover, remotely immobilizing the truck would make sure that the robbers will not get too far with the cargo and the car but using the immobilizer too early might escalate the situation even further if the robbers have not reached far enough and can come back.

According to Greater Manchester Police's Family Crime Reduction Guide (no date), if the security measures are hard to apply or take time to activate, the usage of these measures is often neglected. Therefore, it is essential that the devices are easy to use so that these are utilized more commonly. Another thing pointed out in the guide is that majority of the car crime is opportunistic, but this might not be necessarily the case when concerning truck or cargo related crime.

2.2.2 Secure parking

The minimum requirement set by the European Commission (2017, 22) for a secure parking area has good lighting, camera surveillance, barrier and fencing to keep unwanted visitors away. To achieve the highest trucking Security Requirement (2017, 27) classification the area also needs to have guards present together with the earlier mentioned security measures. These cover the fundamental characteristic of a secure parking area, but sometimes it is not possible to have access to these areas. The European Agreement concerning the International Carriage of Dangerous Goods by Road Volume II, created by the United Nations (2016, 575),

gives three other options to park the vehicle if a secure parking location is not available, parking it in detached area is an option if the vehicle has been appropriately secured meeting following requirements.

- Location which is supervised, and the supervisor knows the whereabouts of the driver.
- Quiet parking location where the possibility of the truck getting damaged by other vehicles or individuals is minimal.
- Parking area that is not close by to communal roads and where individuals do not usually gather or pass by.

However, Road Transport Security Guidelines (International Road Transport Union 2005, 19) suggests not to use any detached areas and always seek a secure parking area. Some other things to consider when parking the vehicle indicated in Road Transport Security Guidelines (International Road Transport Union 2005, 19), is to have sight on your vehicle and if possible park with the trailer doors close to another vehicle or a building, limiting the access to the cargo. Besides using secure parking areas as a deterrent to theft, making use of other security and preventive methods mentioned earlier further increase the security of the vehicle.

2.2.3 Foreseeing unveiling threats

There have been cases where robbers have used unorthodox methods to gain access to the cargo. Sometimes preparing for the worst-case scenario is beneficial, but sometimes the fallen tree blocking the road is just a fallen tree on the way and not some elaborate plan set by perpetrators with malicious intent, being cautious is good, but too much of caution might turn into paranoia. Fake police officers, phony warehouse workers, and phony delivery addresses (European Commission 2017, 15) are all in the realm of possible methods robbers can act with, so reacting correctly on these is crucial and looking at things that are out of the ordinary is vital.

2.2.3.1 Modi operandi

The criminals have many methods to gain access to the goods, European Commission (2017) has listed these methods under different categories. Forced stops; if there is no other option than put the vehicle into halt caused by for example a fallen tree blocking the road or other possible roadblocks. Deceptive stop, something that could be a legitimate issue or situation such as fake police or a fake accident. Creative and endearing methods have been used by thieves to steal cargo, theft from a moving truck (Gibbs 2017) or stowaway within parcel (Europol 2016), paying attention to the shipment when loaded into the truck and keeping an eye on vehicles that are tailing a bit too close, just for the worst-case scenario, it is better to be safe than sorry

In Finnish legislation the definition of theft “A person who appropriates movable property from the possession of another shall be sentenced for theft to a fine or to imprisonment for at most one year and six months” (The Criminal Code of Finland). The Criminal Code of Finland also implicates that the threat of violence also needs to be present for theft to be classified as a robbery. For both robbery and thievery, similar security methods can be used in the sense of locks, alarms, and tracking as covered earlier. Since a robbery includes the use of force or the threat of it to gain entry to the vehicle. The one big difference in preventing robbery compared to thievery is the ability to foresee threatening situations and reacting to them accordingly. The safety of the driver and other people should always come before the cargo.

2.2.3.2 Deceptive and forced stops

European Commission (2017) offers some measures drivers can take to prevent theft caused by deception such as a fake accident or police impersonation. The disguise of a police officer will give a sense of trust which is why it is essential to know things that help to spot a fake police officer from a fake one. It is also illegal in Finland to pretend to be a police officer by the Criminal Code of Finland (1889). To spot fake police from a real one, asking the officer to show their police badge is one method to authenticate this is listed in the Police Act (Finland 2011). Police officers must prove this by showing his badge when asked unless it jeopardizes the completion of the action, this should be one of the first things to do if you are feeling unsure about the authenticity of the officer. Paying attention to the police vehicle, uniform and the tool belt are also beneficial in spotting impersonating a police officer. Finnish police officers carry, gun, taser, baton, pepper spray, handcuffs, multi-tool, and flashlight. (Poliisitube 2017).

The European Commission (2017, 26) suggests on keeping an eye out for suspicious activity close to the vehicle, people loitering around the truck or vehicle that drives a bit too close to the truck can spell trouble. Do not give a lift to hitchhikers or accept any other offers from unknown people; this includes drinks, or any help to carry cargo.

In a case of forced stop or a fake accident, it is best to stay inside the cabin of the truck and seek a secure area, informing the back office and authorities is vital for the validation of situation as suggested by European Commission (2017, 26). Since leaving the cabin during delivery in case of bogus accidents is a security risk, it is also important to not try to remove possible roadblocks alone and instead find a possible detour, arriving late to the destination with cargo intact is better than losing the load to a theft. Communication and sharing experiences with back office and fellow delivery drivers are essential for the future, these guide other drivers on how to act in case of possible thefts accordingly, these experiences also include the possible near-miss situations.

2.2.3.3 Cautious measures

Being cautious is necessary to reduce the chance of being a target of a theft, the security measures installed on the vehicle only work if utilized. Carrying out visual checks for possible damages done to the vehicle is essential, if there are damages to the vehicle or the preventive measures, checking the carried load is in order these are in the guidelines created by International Road Transport Union (2005, 20), this also includes carrying the keys with you always. Make sure everything needed for the delivery is on the truck before leaving, taking extra and unannounced cargo is a risk making sure superiors have authorized it before departing (European Commission 2017, 21). Leaving anything in the open for the such as telephone, laptop, wallet or even possible documents which give out any information about the cargo may be an incentive for the perpetrator to break in. Disclosing the route, for the shipment or the contents of the delivery to anyone or announce it on social media channels unless it is utterly necessary (European Commission 2017, 22). Any prior knowledge given to people increases the chance of being targeted by theft or a robbery.

Finnish law allows the apprehension of a suspected criminal in a case of robbery according to Coercive Measures Act (Finland 2011). However, showing any signs of force or aggravating the robber might escalate the situation and putting lives in danger. The loss of life is more impactful than the loss of cargo or the truck. Public places where a significant event is happening may also increase the chance of being a target of truck theft which could lead to an act of terrorism where the vehicle is used to cause it; these should also be considered when planning the route. (European Commission 2017, 37.)

3 Methodology

This thesis utilized the applied research method; this method revolves around finding a solution to a specific problem (Adams, J., Khan, H. T. A. & Raeside, R. 2014 7) which in the case of this thesis was cargo theft. This method includes the studying the existing policies regarding transportation security and applying these existing methods to for the benefit of the cooperative company by creating guidelines (Appendix 1.) for the drivers. The policies inspected for were developed by International Road Transport Union in their Road Transport Security Guidelines (2005), Transported Asset Protection Association's Trucking Security Guidelines (2017) and European Commissions Security Guidance for the European Commercial Road Freight Transport sector: ROADSEC Security Toolkit (2017).

The data collected for this thesis used both primary and secondary data collection methods. Primary data collection described by Adams et al. (2014, 92) is new original information, this information collected by using a questionnaire conducted to the cooperative company (Appendix 2.) which allowed for the guidelines to be personalized more for the needs of the company.

"Secondary data is data collected by someone else" (Adams et al., 104). The secondary data collected for this thesis resulted in a few problems. These difficulties were regarding the collected cargo theft statistics, the latest official statistic on the losses caused by cargo theft in Europe is over a decade old which comes from European Parliament's Committee on Transport and Tourism: Organized theft of commercial vehicles and their loads in the European Union (2007). This study concluded that the estimated loss caused by cargo theft in Europe is 8.2 billion euros. FreightWatch (2016) estimated that the damages had increased by 41 percent in 2013 to 11.6 billion euros.

Another issue is that police forces do not categorize thefts from trucks differently. These truck theft statistics could fall into a much broader category such as vehicle crime according to TAPA (2018). These issues also supported further by a study conducted by NEA (2007), that the availability of statistics related to cargo related crimes is limited since many statistics do not differentiate trucks, vans, and trucks. Official Statistics of Finland (2017) don't categorize truck theft differently either. Truck theft might fall under the breaking into motor vehicle category which had 7 650 incidents in 2017. Motor vehicle theft is an inclusive term which also includes passenger cars which are not relevant to this thesis. Another broad category to be inspected is thefts of objects by Official Statistics of Finland (2017) however these two statistics were not comparable, because of the broadness of the latter categories and these could not be correlated with each other sufficiently.

According to Europol (2009), Transported Asset Protection Association's Incident Information Service was currently the only source to get statistics regarding cargo theft within the European Union. Incident Information Service is a centralized knowledge base regarding cargo thefts its purpose is to distribute this information to its member companies and law enforcement agencies. However, since this information is uploaded to the Incident Information Service database optionally, it only tells a part of the actual crime statistics regarding cargo theft. Some of the incidents are not probably even reported to the database, Transported Asset Protection Association (2018) lists two additional reasons why this might be the case besides the earlier mentioned categorizing issue regarding cargo theft. Law enforcement agencies are not allowed to share incident data with third parties, and sometimes companies don't wish to admit they have suffered a loss caused by a cargo theft and leave the incident unreported.

Transported Asset Protection Association reports these cargo crime incidents for the public in their monthly newsletter Vigilant this Incident Information Service data is from across Europe, the Middle East and Africa (EMEA) region, however, most of these reports come from Europe. Gathering the data from their monthly newsletter Vigilant (Transported Asset Protection Association 2017) from February 2017 to January 2018, focusing on the data regarding the location

of the incidents, the product category of the goods, what type of event was in question, modus operandi used by the perpetrator and number of incidents reported.

The questionnaire (Appendix 2.) conducted with the drivers of the cooperative company of this thesis. The point of the questionnaire was to get first-hand knowledge from delivery drivers, about what kind of items do they mainly deliver, and do they have a history of being a victim of a robbery or a theft of their cargo. This questionnaire was to see if there is any difference depending on what the driver is mainly delivering or have past experiences being a target of a theft changed, do these two things affect how likely the driver sees truck theft happening. For the purpose, a set of questions were created, which the drivers could answer either on paper or online, produced charts are for better visual representation. The questions were kept simple and were designed on the information what kind of goods the company mainly delivers and gathered from the Incident Information Service data (Transported Asset Protection Association 2017) to see if there were any deviation to the reported crimes and how the drivers themselves see cargo crime in Finland. Respondents were given a possibility to provide a more in-depth answer if they felt the need. These questions gave a base on what kind of issues should be on the focus focused on the guidelines.

- What kind of items do you deliver?
- Have you been a victim of robbery or theft during delivery? If yes, what was stolen?
- At what point of delivery did the robbery or theft take place?
- What do you think is the most significant risk to your delivery?
- Do you think your vehicles theft prevention is sufficient?
- Do you check your vehicle for any signs of tampering before driving?
- How big of a risk do you see theft from a vehicle? Moreover, theft of the vehicle?
- How probable do you see theft from a vehicle? Moreover, the theft of the vehicle?

4 Findings

This chapter looks at the results, the most prevalent issues and the cause of cargo theft together with the questionnaire answers given by the drivers of the small delivery company. The total amount of incidents gathered from the Vigilante newsletters, in 2017 there was a total of 2190 across EMEA region. The most incidents per month happened in October which reported in the November issue of Vigilant (Transported Asset Protection Association 2017). To complement this data, there was a need to look at other statistical sources, such as the reported theft offenses statistics by the Official Statistics of Finland (2017). To see if they

have any similarities with cargo theft statistics, though the problem is since the theft statistics of Finland cover all the theft's and not just cargo thefts.

The most sought-after goods for the thieves to target in 2017 according to the Vigilant newsletters (Transported Asset Protection Association 2017) was food and drink. However, unspecified and miscellaneous goods were stolen more commonly according to the statistics, but for this thesis, a detailed product category is more useful data. The second most sought-after product category in 2017 was clothes and footwear. According to the Official Statistics of Finland (2017) from all thefts committed there were 1 159 thefts of food products and 4 054 of clothing items these roughly 1 percent and 4 percent of the total thefts.

Something very noteworthy about the Incident Information Service statistics is that the most common location for the cargo theft is unsecured parking location, this totaled in 1640 which is 74.9 percent of the total amount of incidents (Transported Asset Protection Association 2017). Stealing from the vehicle was the most common type of event which was 1703 incidents and 77.8 percent of the total. The final statistic looked at was the method the perpetrators used to get the goods, in 79 percent of the cases or 1731 in total the modus operandi was intrusion (Transported Asset Protection Association 2017). Even though these statistics may not be the whole truth, especially about the total amount of cargo thefts in Europe, however, it does show at least one problem area which should be on the focus; Unsecured parking.

17 answers were received to the questionnaire, from which two of the answer sheets was only half filled. The questionnaire answers help to shape the issues that should be as the focal point in the guidelines.

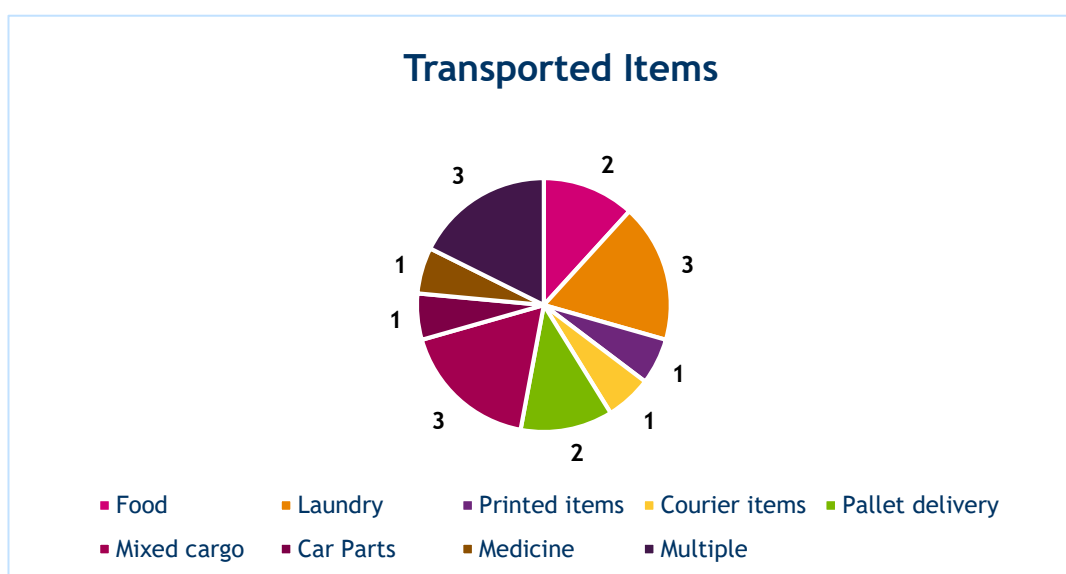


Figure 1 Questionnaire: Delivery Items

The choices for the first question were chosen by what the company mainly transports, together with an open choice if there were other than the given options. About the only things from Figure 1 that stand out are delivery of medical items and car parts, as these were not the usual items the company delivers regarding the information gathered before the conduction of the questionnaire. Pallet delivery, mixed cargo, and multiple choices were not very specific answers as these could be pretty much anything. Clothing and footwear listed from the Incident Information Service data could be somewhat correlated to the laundry, this puts two of the most sought-after named products, food and drink, and clothing and footwear as the possible sought-after delivery items for the company.

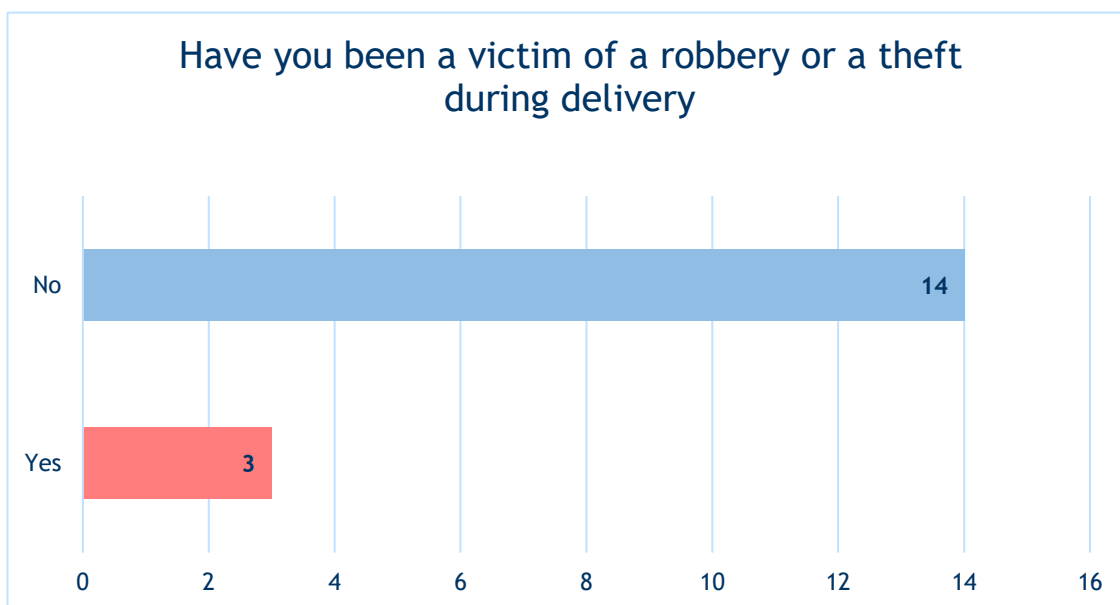


Figure 2 Questionnaire: Victim of a theft or robbery

Three out of fourteen drivers have been a victim of a robbery or theft. For the first theft incident there was no mention what the delivered cargo was, but nothing lucrative enough for thieves to take with them since nothing was missing from the truck. The incident happened at a guarded parking area in Russia.

For the second theft incident, a driver was delivering medicine. During loading a thief got his hands on one medical case, the driver ran after the thief and reclaimed the case of medicine. The third and final incident was a delivery of return bottles and cases, this incident also happened during loading.

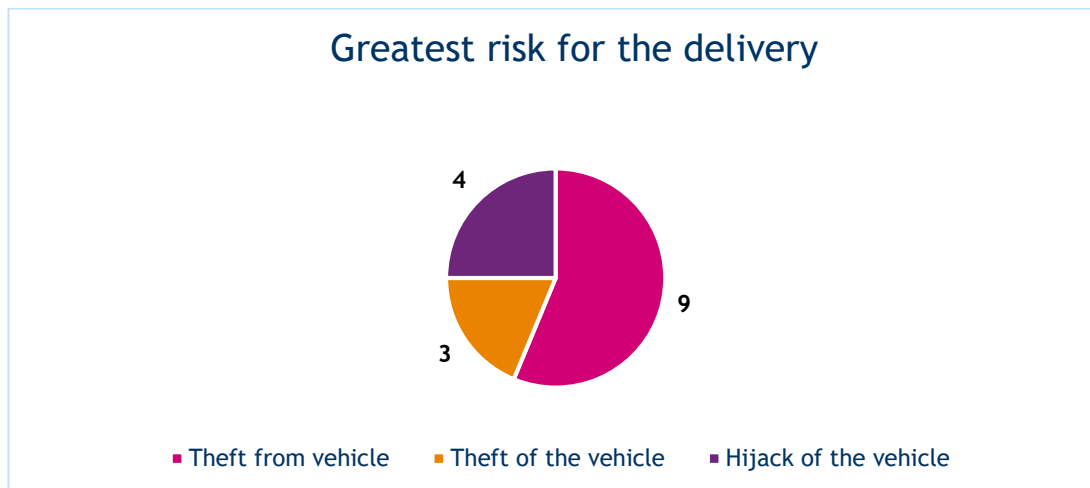


Figure 3 Questionnaire: Greatest risk for the delivery

One questionnaire came without an answer to this question. Half of the drivers felt that theft from the vehicle was the most significant risk. Two of the three with a history of being a victim of theft also answered theft from the vehicle; final one chose theft of the truck. Figure 3 is also in line with the Incident Information Service data; cargo theft is more common than the theft or robbery of the lorry.

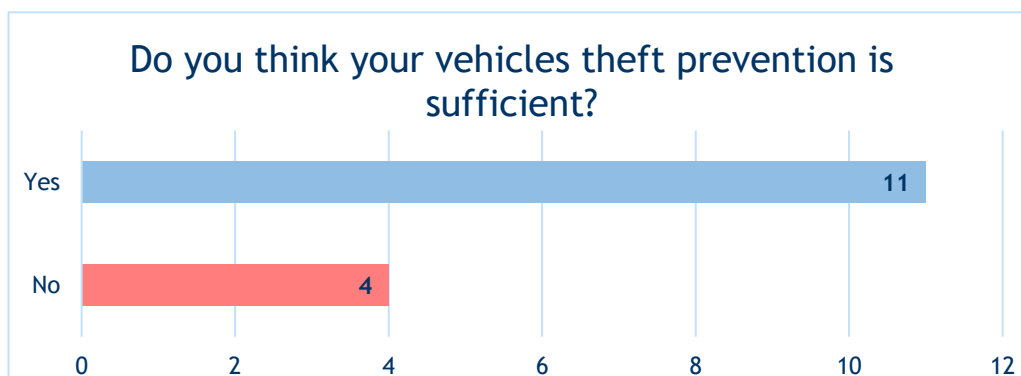


Figure 4 Questionnaire: Theft prevention

Eleven out of the fifteen drivers thought their vehicles theft prevention was sufficient. Rest of the questionnaire answers are missing two answers due to not fully answered questionnaire sheet. Given that most of the drivers feel that the security measures installed on their vehicles are sufficient, there shouldn't be a reason to add more security systems, but instead making sure the drivers use the security measures and carry out visual checks to see if there are any damages done to the truck. As seen in Figure 5, half of the answering drivers don't check their vehicle; this should be one of the focus points in the guideline.

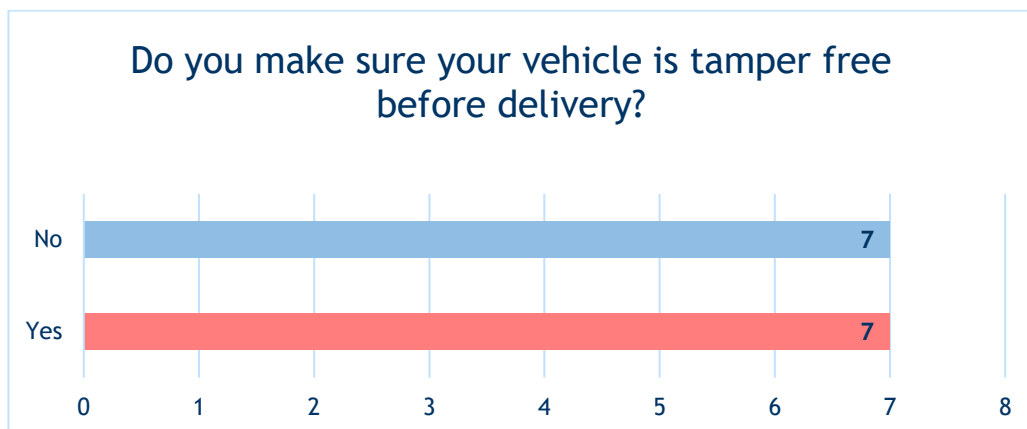


Figure 5 Questionnaire: Checking vehicle

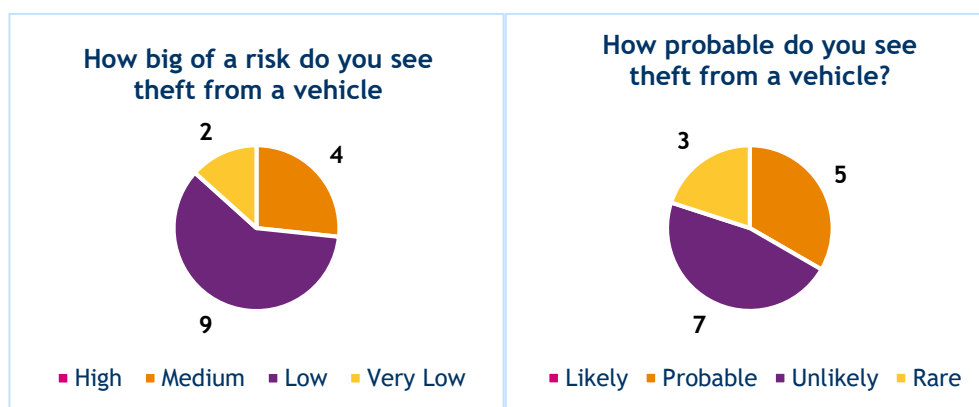


Figure 6 Questionnaire: Risk, theft of from a vehicle & Figure 7 Questionnaire: Probability, theft from a vehicle

These last questions were asked to see if the drivers feel secure during their work, and what were the drivers' assessment of the chance of the theft of cargo (Figure 7) or the truck (Figure 9). Figure 6 and Figure 8 show how impactful the drivers saw the theft of the load or the vehicle. As seen from the figures, drivers, in general, felt very secure during their job in Finland. There were no abnormalities in answers submitted by drivers who had past experiences with cargo theft and were in line with the other answers. Data gathered from the Incident Information Service showed zero instances from Finland in 2017. But this means that there were no reports from Finland to the database, reality this could be different as covered earlier about the issues of cargo theft statistics. According to the development of certain types of offenses (Official Statistics of Finland 2017) in Finland, both thefts of vehicles and breaking into the motor vehicle, have been declining so cargo theft might not be as big of an issue compared to rest of Europe.

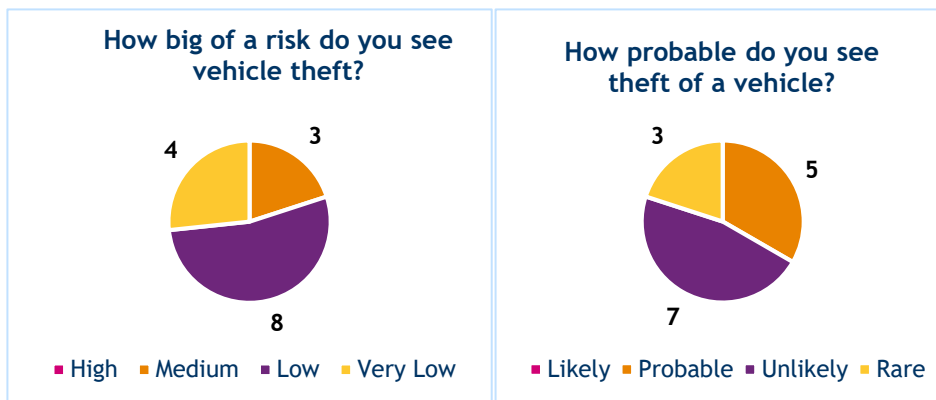


Figure 8 Questionnaire: Risk, theft of a vehicle & Figure 9 Questionnaire: Probability, theft of the vehicle?

5 Guidelines

This section goes over the main points that are in the guidelines for the cooperative company (Appendix 1). These guidelines are focusing on the main issues faced by the drivers; these guidelines will also answer the research question, what can the drivers do themselves to reduce the chance of being a victim of cargo theft? The focus of the instructions for the company lay more on measures the drivers can take to increase the security of the transportation rather than the security measures applied to the vehicle, since the according to the questionnaire (Figure 4), the majority felt that the theft prevention methods were sufficient. These guidelines will comply with rules, set by European Commission (2017), Transported Asset Protection Association (2017) and International Road Transport Union (2005).

European Commission (2017) suggests that 12 areas of inspection done to the truck to check before and after a journey, this includes possible breaks taken during the trip. Vehicle checking was a big issue for the drivers as seen in Figure 5, only half of the drivers check their vehicle for signs of tampering or potential attempts of theft that could risk the truck or trailer or the carried cargo. Drivers should also pay attention to locks, seals, and alarms that these are working and using these security measures is crucial. The areas other areas to check for the drivers according to European Commission (2017) are:

- Rear Doors and Seals
- Floor (inside of the trailer)
- Side Walls
- Roof/ceiling
- Front Wall of the trailer

- Outside/Undercarriage
- Fifth Wheel Axle
- Fuel Tank
- Tires
- Engine Compartment
- Cab
- Windjammer

Other things the drivers need to consider as general procedure are that they always carry the vehicle keys with them, lock the doors and close the windows when exiting the vehicle. Not keeping any documents, especially related to the shipment visible, or any other valuable items, such as phones or laptops (International Road Transport Union 2005, 20). These could give thieves an incentive to break into the vehicle. Communicating the routes or the contents of the truck should be kept to a minimum (European Commission 2017, 22), the less potential thieves know, the better.

When the drivers stop for a break, they should try to park cargo bay doors against things such as buildings or other vehicles, to limit access to the cargo (International Road Transport Union 2005, 19), but also keeping an eye on the truck while having the break for possible unknown people loitering around the truck. Since the most common reason for cargo theft was, that the drivers do not utilize secure parking locations, it is important to mention what kind of areas the drivers should use for parking in the guidelines. Using secure parking locations when possible, these are well-lit areas with surveillance and fencing (European Commission 2017, 22). But sometimes these are not a possibility, so it is good to give choices that are followed during the transportation of dangerous goods (United Nations 2016, 575):

- Location which is supervised, and the supervisor knows the whereabouts of the driver.
- Quiet parking location where the possibility of the truck getting damaged by other vehicles or individuals is minimal.
- Parking area that is not close by to communal roads and where individuals do not usually gather or pass by.

Other possible dangers drivers should be aware of are fake police and fake accidents, staying in the cabin is advised (European Commission 2017). The drivers can authenticate a real police officer by asking for their badge which, which the officer must show as stated in the

Police Act (Finland 2011). Noticing a faked accident may be difficult, but if the faked accident seems obvious, driving to the closest secure area and informing the police and employer is suggested (European Commission 2017). Robbers may also attempt to steal the cargo on the move keep an eye out for anything that raises suspicion. Do not give lifts to any unknown persons (European Commission 2017, 26). In case of a threatening situation, the drivers should not escalate the situation by aggravating the perpetrator. These proposed guidelines (Appendix 1.) should be the minimum the drivers need to consider during their job and follow them.

6 Conclusions

The most concerning security risk a driver could face in their work is a robbery since this put both, the driver, truck and the cargo under duress, but robbery was found out to be far less common than cargo theft. Theft from a truck was also found to be more common than theft of the truck; this was also shown in the questionnaire answers, which emphasized on preventing theft from a truck. The addition of the questionnaire added value and gave a focus to the problems that the drivers themselves face. The most common method the perpetrators used was an intrusion in a non-secured parking area this meant that the focus point had to be on how to prevent intrusion. The best way for the drivers to reduce the chance of being a victim of cargo theft was to guide them to use secure parking locations. Due to the lack of vehicle checking done by the drivers the guidelines had also to include what the drivers should check to prevent the bad habit of not checking the vehicle. The drivers were content regarding the security measures of their vehicle, but it is important to also point out for them that the measures only work if utilized.

One major issue found out during this thesis was the lack of official statistics regarding cargo theft. This could be because the cargo thefts get lost in other statistics such as thefts or break-in statistics that also include non-commercial vehicles. Replacing the stolen product and repairing the vehicles become costly monetarily and time-wise. The need to rely on third-party statistics, which doesn't include all the cargo thefts that happen in Europe, since companies may choose to not voluntarily report the thefts, because this may cause them to get a bad reputation, this is one issue that needs resolving.

There is a need for further research regarding cargo theft since the current situation, and the scope of the problem would need a new update. Especially regarding how much cargo theft costs for the economy of Europe, or at least for Finland. The created guidelines for the company (Appendix 1.) could also be expanded upon, on what the managers can do to reduce the cargo theft, but this did not fit in the scope of the thesis since the focus was on the drivers. The current standardized methods on how to prevent cargo theft are up to date, but as the technology evolves and the methods used by thieves, it is important to follow the trends and find out solutions to new problems regarding cargo theft and fully protecting the transportation aspect of the supply chain.

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Appendix 1: Guidelines for the drivers

Turvallisuusohjeistus ajoneuvon kuljettajille

Tarkista seuraavat alueet ennen liikkeelle lähtöä peukaloinnin ja vaurioiden varalta:

- Peräövet, sinetit sekä lukot
- Tavaratilan lattia
- Tavaratilan seinät
- Katto
- Perävaunun etuseinä
- Ulkopinnat sekä ajoneuvon pohja
- Viides akseli
- Polttoainetankki
- Renkaat
- Moottoritila
- Ohjaamo

Kanna ajoneuvon avaimia aina mukana, sulje ikkunat ja lukitse ovet aina ajoneuvosta poistuessa.

Älä jätä mitään arvokasta näkyville ohjaamossa. Mukaan lukien:

- Kuljetus dokumentit
- Henkilökortit
- Matkapuhelimet sekä kannettavat tietokoneet

Älä kerro kuljetus reittiäsi tuntemattomille.

Pysäköinti turvallinen pysäköintialue on: Hyvin valaistu, vartioitu sekä aidattu. Jos tällainen alue ei ole mahdollinen ajoneuvon pysäköintiin:

1. Pysäköintialue jossa muut ajoneuvot eivät todennäköisesti vahingoita ajoneuvoa
2. Alue, joka ei ole päätien tai asutuksen välittömässä läheisyydessä, ja missä yleisö ei yleensä kokoontu tai liiku

Jos mahdollista, pysäköi ajoneuvo siten, että perä ovien avaaminen ei ole mahdollista. Esimerkiksi: Seinää tai toista ajoneuvoa vasten. Jos purkaminen tai lastaaminen ei ole välttämätöntä.

Ole varuilla vale poliisien ja onnettomuuksien varalta: Pyydä poliisia näyttämään virkamerkki, jos epäilet mahdolliseksi vale poliisiksi.

Jos kohtaat esteitä tiellä (kaatunut puu, kiviä) ilman muuta liikennettä, etsi toinen ajoreitti. Älä lähde yksin siirtämään esteitä.

Varkaus- tai ryöstötilanteessa

- Pysy rauhallisena, älä vaaranna henkeäsi
- Tottele ryöstäjän vaatimuksia
- Vältä äkkinäisiä liikkeitä
- Paina tuntomerkit, pako tapa ja suunta mieleesi
- Hälytä apua

Älä kuljeta tuntemattomia ihmisiä.

Appendix 2: Questionnaire

6/8/2018

Kuljetus Turvallisuus Kysely

Kuljetus Turvallisuus Kysely**1. Mitä Kuljetat pääsäännöllisesti?***Merkitse vain yksi soikio.*

- Elintarvikkeita
 Elintarvikkeita - Lämpösäädelyjä
 Pesulatuotteita
 Painotuotteita
 Tietotekniikkaa
 Postituotteita
 Muu: _____

2. Oletko joutunut ryöstön tai varkauden uhriksi, kuljetuksen aikana?*Merkitse vain yksi soikio.*

- Olen
 En ole

3. Jos vastasit kyllä, mitä varastettiin?

4. Missä tilanteessa ryöstö tai varkaus tapahtui?*Merkitse vain yksi soikio.*

- Ajon aikana
 Pysähtyneenä
 Pysäköitynä
 Lastauksen tai purkamisen aikana
 Muu: _____

5. Minkä seuraavista koet suurimmaksi riskiksi kuljetukselle?*Merkitse vain yksi soikio.*

- Varkaus ajoneuvosta
 Varkaus ajoneuvosta ajon aikana
 Ajoneuvon varkaus
 Ajoneuvon kaappaus
 Muu: _____

6. Ovatko ajoneuvosi varkaudenesto laitteet mielestäsi riittävät?*Merkitse vain yksi soikio.*

- Kyllä
 Ei

6/8/2018

Kuljetus Turvallisuus Kysely

7. Varmistatko ajoneuvosi peukaloinnin varalta ennen liikkeellelähtöä?*Merkitse vain yksi soikio.*

- Kyllä
 En

8. Kuinka suurena uhakana näet varkauden ajoneuvosta?*Merkitse vain yksi soikio.*

- Suuri
 Keski-suuri
 Pieni
 Minimaalinen

9. Kuinka todennäköisenä näet varkauden ajoneuvosta?*Merkitse vain yksi soikio.*

- Todennäköinen
 Mahdollinen
 Harvinainen
 Epätodennäköinen

10. Kuinka suurena uhakana näet ajoneuvo varkauden?*Merkitse vain yksi soikio.*

- Suuri
 Keski-suuri
 Pieni
 Minimaalinen

11. Kuinka todennäköisenä näet ajoneuvo varkauden?*Merkitse vain yksi soikio.*

- Todennäköinen
 Mahdollinen
 Harvinainen
 Epätodennäköinen

Palvelun tarjoaa

