



Vili Vihtonen

Maintenance contracts from the perspective of the leasing company

Metropolia University of Applied Sciences

Bachelor of Engineering

Automotive engineering

Bachelor's Thesis

15 April 2022

Abstract

Author: Vili Vihtonen
Title: Maintenance contracts from the perspective of the leasing company
Number of Pages: 20 pages
Date: 15 April 2022

Degree: Bachelor of Engineering
Degree Programme: Automotive Engineering
Professional Major: After Sales Engineering
Supervisors: Juho Vallivaara, Senior Lecturer
Miika Hannula, Maintenance Manager, Secto Automotive Oy

This Bachelor's thesis compares the realized maintenance and repair costs with the maintenance contract price. The thesis was conducted in cooperation with Secto Automotive Oy. The thesis evaluates the advantages and disadvantages of a maintenance contract from the perspective of the leasing company, including what kind of contract would be optimal for the leasing company. The comparison was carried out for 90 000 kilometers in terms of actual costs, and 30 000 annual kilometers over three years were selected for the maintenance contract. The comparison was made from the perspective of a leasing company and focused on cost and financial analysis.

The price of the maintenance contracts has primarily been obtained from the importer by e-mail, as the prices of all the contracts were not available directly online. Regarding the actual maintenance and repair costs, data collection of the cost calculations was performed with Secto's ERP system. Because of the cost implications of different engine and transmission combinations, models with automatic transmissions and diesel engines were selected for this study.

As a result of this thesis, it became clear what factors a leasing company should consider when making a maintenance contract. There was a significant difference in the pricing of the maintenance contracts. In one of the car models, a maintenance contract would be significantly cheaper. However, the cost was not the whole truth. When making a maintenance contract, the financial perspective and the maintenance data from the cars must be considered. These factors help assess the lifecycle costs of the car in question.

Keywords: maintenance contract, car, maintenance costs

Tiivistelmä

Tekijä: Vili Vihtonen
Otsikko: Huolenpitosopimukset leasing-yhtiön näkökulmasta
Sivumäärä: 20 sivua
Aika: 15.4.2022

Tutkinto: Insinööri (AMK)
Tutkinto-ohjelma: Ajoneuvotekniikka
Ammatillinen pääaine: Jälkemarkkinointi
Ohjaajat: Lehtori Juho Vallivaara
Huoltopäällikkö Miika Hannula, Secto Automotive Oy

Tämän opinnäytetyön tarkoituksena oli verrata toteutuneita huolto- ja korjauskustannuksia huolenpitosopimuksen hintaan. Työ tehtiin yhteistyössä Secto Automotive Oy:n kanssa. Työssä arvioidaan leasing-yhtiön näkökulmasta huolenpitosopimuksen hyötyjä ja haittoja, myös sitä minkälainen sopimus olisi leasingyhtiön kannalta optimaalinen. Vertailu suoritettiin toteutuneiden kustannusten osalta 90 000 kokonaiskilometreillä ja huolenpitosopimuksen osalta vertailuun valittiin 30 000 vuotuiset kilometrit kolmen vuoden ajanjaksolta. Vertailu suoritettiin leasing-yhtiön näkökulmasta ja siinä keskityttiin kustannuksiin ja rahoitukselliseen tarkasteluun.

Huolenpitosopimusten hinnat on suurimmalta osin selvitetty maahantuojalta sähköpostin välityksellä, koska kaikkien sopimusten hintoja ei ollut saatavilla suoraan verkosta. Toteutuneiden huolto- ja korjauskustannusten osalta tiedonkeräys suoritettiin Secton ERP-järjestelmän kautta, josta nämä kustannuslaskelmat löytyivät. Koska eri moottori- ja vaihteistoyhdistelmät vaikuttavat kustannuksiin, on tähän selvitykseen valittu automaattivaihteistolla ja dieselmoottorilla varustetut automallit.

Opinnäytetyön tuloksena selvisi, mitä asioita leasing-yhtiön tulee ottaa huomioon harkitessaan huolenpitosopimusta. Huolenpitosopimusten hinnoittelussa oli suuriakin eroja. Yhdessä tutkimuksen automallissa huolenpitosopimus tulisi huomattavasti halvemmaksi kuin todennäköiset huoltokustannukset. Kustannukset eivät kuitenkaan olleet koko totuus. Huolenpitosopimusta harkitessa tuli ottaa huomioon rahoitusnäkökulma ja huoltolaskuista saatava tieto. Nämä tekijät voivat olla hyödyllistä arvioidessa kyseisen auton elinkaarikustannuksia.

Avainsanat: huoltosopimus, auto, huoltokustannukset

Content

1	Introduction	1
2	Secto Automotive Oy	2
3	Maintenance contract	3
3.1	Individual and importer	3
3.2	Importer and leasing company	4
4	Implementation of the study	4
4.1	Quantitative research	4
4.2	Collection of research material	5
5	Assessing the reliability of the study	7
5.1	Validity	7
5.2	Reliability	7
6	Research data and comparison.	8
6.1	Research data	8
6.2	Skoda Octavia	9
6.3	Volkswagen Passat	11
6.4	Volvo XC60	13
6.5	Comparison	15
6.6	Financial perspective	16
6.7	Development proposal	18
7	Summary	19
	References	20

1 Introduction

This Bachelor's thesis was done in cooperation with Secto Automotive Oy. The subject of the thesis is to compare the maintenance and repair costs relative to the costs of a maintenance contract. Furthermore, the study evaluates the advantages and disadvantages of a maintenance contract from the perspective of the leasing company, including what kind of contract would be optimal for the leasing company. Secto Automotive Oy has entered maintenance contracts with a few importers for seven years but has not made contracts with all brands. Therefore, the study results make it possible to consider the care and cost-effectiveness of designing a single maintenance contract for all importers.

The research problem is whether it is worthwhile for the leasing company to enter into a maintenance contract or to bear the costs of maintenance and repairs itself. The study analyzes what costs are accrued from the maintenance contracts and the traditional maintenance services. In addition, the paper views what effect the maintenance contract will have on the leasing company's committed capital.

The study consists of a theoretical part, which briefly deals with the maintenance contract as a service concept and describes at a general level how a maintenance contract made by an individual differs from one made by a leasing company. The theoretical part also briefly introduces Secto Automotive Oy's business. Finally, in the empirical part of the study, the research results and conclusions are considered.

2 Secto Automotive Oy

Secto Automotive Oy is a leasing company that offers various options from car leasing to car ownership. Secto offers three bases from which to tailor a solution to suit the customer.

The lightest solution of all is a financial lease, where Secto is responsible for the depreciation and financing costs of the car. The next option is maintenance leasing, where Secto bears maintenance, depreciation, and financing costs. Secto's open maintenance lease has the same coverage as Secto's maintenance lease, but the costs incurred during the contract period and the residual value portion will be equalized at the end of the contract period. In this case, the customer only pays for the actual costs. In a nutshell, Secto sells control over the cost of owning a car. (Secto presentation for companies 2022.)

Secto also has its own used car distribution channel, from which cars under expired leases can be resold. Own resale channel helps manage the car's life cycle costs and enables better pricing for leasing contracts. (Baer 2022.)

The main focus of the leasing customer base is on corporate customers, but there are also private customers. According to Linus Baer (2022), Secto's Chief Operating Officer, the company's strengths are flexibility in tailoring contracts to customer needs and efficient customer service. In other words, Secto's goal is to make owning a car as easy and stress-free as possible for its customers.

Secto Automotive Oy is a limited liability company founded in 2007 and domiciled in Porvoo. In 2020, the company had 77 employees. Net sales in 2020 were EUR 268.32 million. The result for the financial year the same year was EUR 1.78 million Euros. (Secto Automotive Oy, Fonecta Finder.)

3 Maintenance contract

3.1 Individual and importer

A maintenance contract is a contract that is usually made between a private individual and an importer. In this contract, the dealer is also involved. Under the agreement, the importer takes care of the car's maintenance for a certain monthly fee. The most basic maintenance contracts cover repairs under the car's maintenance program that are not caused by external factors. However, extensive maintenance contracts can also replace repairs caused by normal wear and tear and the expected use of the car.

From the retailer's point of view, the most significant benefits of maintenance agreements are that they allow the customer to be committed to brand maintenance for several years. Committing the customer ensures that maintenance and the proceeds from the sale of spare parts do not end up in external repairers but are kept within the organization. The maintenance agreement also helps to secure the customer relationship in cases where the car receives an expensive defect after the warranty period. The reseller may also be interested in a maintenance contract from a marketing standpoint. Keeping the customer connected to the brand service network makes it possible to market new products and services more efficiently.

From the customer's point of view, the most significant benefits of a maintenance contract are the ease of service and the foreseeable costs. When having a maintenance contract, the risk of unforeseen failures and unexpected costs passes to the contractor if they are included in the contract. The customer may also be interested in the maintenance contract from the point of view of reselling the car. A maintenance contract can achieve a higher resale value for the car when the car has been serviced with original spare parts and repaired by a branded workshop following the manufacturer's repair instructions.

3.2 Importer and leasing company

The maintenance contract between the importer and the leasing company is, for the most part, very similar compared to a private individual and an importer.

One of the most significant benefits for the leasing company is the ease of processing invoices. Once the maintenance contract is billed monthly, it is possible to automate it.

For an importer, one of the most significant benefits is the same as between an individual and an importer, i.e., committing to their services. As a result, maintenance revenues do not flow to other workshops. Thus, it can be concluded that both parties benefit from the conclusion of the maintenance contract.

4 Implementation of the study

4.1 Quantitative research

Quantitative research was chosen as the research approach. A quantitative study is a statistical study that examines issues related to numbers and percentages. Quantitative research aims to answer the question "what?", "Where?", "How often?" And "how much?". In the study, things are described using numerical quantities, and interdependencies are clarified. The results obtained from the data are illustrated with figures and tables, and the aim is to generalize them to a broader range of people utilizing statistical reasoning. Quantitative research requires a sufficient number of observation units to be reliable and generalized to a broader audience (Heikkilä 2014: 15.)

The quantitative research method ended up as an approach to the thesis because the study aims to find out questions related to percentages. In practice, it means calculating the monetary difference between maintenance and maintenance contracts costs.

4.2 Collection of research material

When collecting research data, the sampling method must be determined.

There are several sampling methods, and they can be divided into two groups depending on whether the result of the sampling is a random sample or a sample. Probability-based methods result in a random sample, including simple random sampling, systematic sampling, stratified sampling, and cluster sampling. Discretionary methods result in a sample and include discretionary sampling and quota sampling. (Holopainen & Pulkkinen 2008: 31.)

Simple random sampling is a method in which all sampling units are selected at random, and all sampling units have the same probability of being selected. The method works by numbering the population from one to ahead. Next, the sample size is determined, and then the number of sample units according to the sample size is collected according to what the random number indicates. A random number can be determined with a random number generator found on each computer. (Holopainen & Pulkkinen 2008: 31–32.)

Systematic sampling is a method in which a population is arranged in a queue, and sampling units are taken from the queue at regular intervals. The method begins with determining the sampling interval and sample size. However, the first sampling unit to be picked is a value between 1 and the sampling interval number using a random number generator. (Holopainen & Pulkkinen 2008: 32–33.)

Partial sampling is a method in which a population is divided into partitions. First, the sampling units are divided into sections so that the sections are internally homogeneous and heterogeneous with each other. Next, a separate sample is taken from each stratum using some sampling method and these form the final sample. (Holopainen & Pulkkinen 2008: 33–34.)

A cluster sample is a method in which a population is divided into clusters. First, the sampling units are divided into clusters so that the clusters are internally heterogeneous and homogeneous with each other. Next, a random sample is

taken from the population formed by the clusters. The resulting clusters may form the final sample or maybe sampled separately. (Holopainen & Pulkkinen 2008: 35–36.)

Discretionary sampling is a method in which the sampling units are selected from the population manually in such a way as to obtain the most objective and equitable result possible. In this method, not every sampling unit has the same probability of being selected. (Holopainen & Pulkkinen 2008: 36.)

Quota sampling is a method of dividing the population into categories based on some significant feature. Next, sampling units are selected using discretionary sampling or systematic sampling. Finally, only as many sampling units as the quota allow are taken for each category. (Holopainen & Pulkkinen 2008: 36–37.)

Quota sampling was used to collect research data. This method was chosen because of the need to limit the sampling population in the study. For example, it would not make sense to compare the cost of a petrol-powered and manual car with that of a diesel-powered and automatic car. Initially, Secto Automotive Oy's three most common passenger car models without a maintenance contract were identified. The Skoda Octavia, the Volkswagen Passat, and the Volvo XC60. Next, the quota was defined as 14 cost calculations without a maintenance contract for each model because it was the largest sample size available. The average cost was then calculated based on the cost calculations and compared with the maintenance contract price.

A choice of sampling units was performed using systematic sampling. First car models were limited to the most common engine and transmission combination: a diesel engine and an automatic transmission. Next, the sampling units were queued based on the registration date from newest to oldest. The 14 newest cars were then selected for examination to make the cost of comparable cars as new as possible and thus comparable to the price of today's maintenance contract.

5 Assessing the reliability of the study

5.1 Validity

Validity means whether the research has measured the right thing. For example, suppose this study was to measure the profitability of a maintenance contract in general but only compare the contracts entered into by the leasing company. In that case, the study could not be generalized to all maintenance contracts and would not be valid. Validity is challenging to look at in retrospect. Therefore, careful planning and data collection must be ensured in advance to ensure no systematic error. (Kananen 2011: 121–123.)

In this study, validity has already been considered at the design stage. Therefore, the data on realized maintenance and repair costs can be valid, as they have been obtained from Secto's database and are thus a cost to the leasing company. The same applies to the data of the maintenance contract, which is obtained from the importer's Price List and is what the contract would cost.

5.2 Reliability

Reliability means that the results of a study are not random. For example, if this study did not produce similar results every time, its reliability would not be very high. Reliability can be divided into two components that are stability and consistency. Stability measures the stability of a study over time. In practice, stability is not considered in this thesis, as it would require measurements to be taken in chronological order. Consistency measures whether the components of a study measure the same thing. Therefore, the variable must be measured in two different ways, and the results must be the same. (Kananen 2011: 119–120.)

In this study, reliability was considered from the perspective of consistency. Therefore, the study aims to increase consistency

by examining several car models. By increasing the number of car models, the similarity between the models can be examined and thus, it can be concluded whether the reliability of the meter is high.

Measuring stability would require a re-run of the study in the future, but this is not due to the factors mentioned above. However, it can be concluded that the meter will give different results in the future, as car maintenance contracts are constantly being re-priced, and maintenance and repair costs are constantly changing. The constant change tells more about a fundamental change in external factors and conditions than an unstable gauge.

6 Research data and comparison.

This chapter describes the research data and its comparison and examines the impact of the maintenance agreement.

6.1 Research data

Maintenance contracts list prices and their content have been clarified through e-mail from the importer of each brand. The actual maintenance and repair costs collection was performed through Secto's ERP system, which included cost calculations for cars. An ERP system is an ERP system that can manage and plan the company's operations and use of resources. The "most expensive" price shown in the tables is the most expensive cost calculation for a sample of 14 cars, and the "cheapest" is the cheapest cost calculation. The choice of these two sampling units has been carried out using discretionary sampling. The sampling units can be used to outline the interval between realized maintenance and repair costs.

For realized maintenance and repair costs total of 90,000 kilometres have been selected for comparison, and for maintenance contracts, 30,000 annual kilometres over three years have been selected for comparison. The

maintenance contracts in this study cover repairs due to normal wear and tear, so they have also been included in the actual costs.

6.2 Skoda Octavia

At Skoda, 21.43% of the actual costs of the material were more expensive than the maintenance contract, i.e., 78.57% were cheaper than the maintenance contract. From this, it can be concluded that the maintenance contract is relatively expensive. Compared to the average price, a maintenance contract is 15% more expensive, and the highest price is 27% more expensive than a maintenance contract. Most maintenance costs are cheaper than a maintenance contract, and if the highest price is compared to the actual price, it is 47% more expensive. From a cost perspective, it can be concluded that this maintenance contract is not a very viable option. Instead of this maintenance contract, it would be more profitable to bear the risk of realized maintenance and repair costs. Table 1 shows the cost of that car model.

Table 1. Skoda Octavia 90,000 km maintenance costs

Maintenance costs	Realized	Maintenance contract
Average price	1856,40 €	2160,00 €
The highest price	2724,87 €	
The lowest price	1448,10 €	

According to Skoda's terms and conditions (2022), these are included in the maintenance agreement:

- • maintenance according to the service interval and schedule specified by the manufacturer or importer for the vehicle and the spare parts and accessories required for them
- • repairs due to natural wear and tear of the car or manufacturing defects in parts, including bulbs and wiper blades during periodic maintenance or when required by road safety

- • maintenance filling of the air conditioning system every two years at most
- • Oil additions, if necessary, between scheduled maintenance
- • Inspection when the car is inspected
- • brake maintenance every two years, brake sensitization and cleaning
- • maintenance and repair of equipment priced separately in the contract
- • Filling the AdBlue tank during periodic maintenance.
- According to Skoda's terms and conditions (2022), these are not included in the maintenance agreement:
 - • repairing faults and damage caused by external factors such as incorrect or poor-quality fuel, bumps and stones being thrown
 - • defects and damage due to factors or causes beyond the control of the seller and the customer, such as fire, vandalism, natural phenomenon, war, etc. force majeure
 - • Crash repair and crash-related towing
 - • painting, rust protection and repair of rust damage
 - • repair of faults and damage due to improper care or improper/negligent use of the vehicle's owner's manual
 - • repair of faults and damage resulting from non-normal use of the vehicle
 - • repair or replacement of non-factory installed equipment
 - • repair or replacement of interior, seat upholstery, interior panels, trim and steering wheel damage
 - • car windows, as well as mirrors and lantern glasses, repair or replacement of decorative works and mouldings outside the car
 - • Windshield washer fluid additions between scheduled maintenance
 - • Addition of Ad-Blue between scheduled maintenance
 - • washing, waxing and cleaning the car
 - • tires, rims and wheel alignment
 - • electronic system upgrades at the customer's request, incl. map updates for navigation systems
 - • fuels.
 - • A reduction in the battery capacity of a high-voltage battery due to regular deterioration is also not covered by the maintenance contract.

6.3 Volkswagen Passat

At Volkswagen, 42.86% of the actual costs of the material were more expensive than the maintenance contract, i.e. 57.14% were cheaper than the maintenance contract. From this, it can be concluded that the maintenance contract is priced very close to the actual average price. In this case, the average price is 10% more expensive than the maintenance contract, and the highest price is 86% more expensive than the maintenance contract. Therefore, about half of the maintenance costs for the data cars are cheaper than a maintenance contract, and if the highest price is compared to the actual average price, it is 69% more expensive. From a cost point of view, it can be concluded that this maintenance contract is a very viable option from the point of view of the leasing company. There is no reason to bear the risk of realized maintenance and repair costs with this maintenance contract. Table 2 shows the cost of that car model.

Table 2. Volkswagen Passat 90,000 km maintenance costs

Maintenance costs	Realized	Maintenance contract
Average price	1882,70 €	1710,36 €
The highest price	3182,97 €	
The lowest price	1089,71 €	

According to Volkswagen's terms and conditions (2022), these are included in the maintenance agreement:

- • Maintenance following the vehicle manufacturer's maintenance program includes both labour and material.
- • Necessary repairs with work and materials due to natural wear and tear of the vehicle, e.g., replacement of the wiper blades if necessary, at least 12 months after the previous replacement, replacement of bulbs or replacement of the LED module if necessary, if the bulb or module is separate and replaceable, and battery replacement of vehicle remote controls if necessary.

- • maintenance of the air-conditioning system in connection with periodic or contracted maintenance, for the first time at least 24 months after the vehicle's first registration and every 24 months after that.
- • Necessary maintenance and repair measures, including materials and work, caused by the natural wear and tear of the equipment installed in the vehicle before its first registration.
- • oil additions if necessary.
- • refilling the windscreen washer fluid reservoir during periodic maintenance.
- • Exterior washing of the vehicle during scheduled maintenance.

According to Volkswagen's terms (2022), these are not included in the maintenance agreement:

- • Defects and damage caused by an external factor, such as crashes, rock damage or damage and damage caused by water and ice, or damage or damage caused by vandalism, fire or natural phenomena.
- • tearing, wear, cracking and detachment of parts and trim attached to the bodywork on the outside and inside the vehicle, whatever the cause.
- • the vehicle's ceramic brakes as a whole.
- • vehicle windows, enclosures and mirrors.
- • maintenance and repairs of accessories installed or ordered after the vehicle has been first registered.
- • vehicle electronic and digital system and service upgrades, such as online services and service license fees.
- • Calibrations of auxiliary systems, except for calibration required for maintenance or repair work.
- • Charging Cables and Chargers for Electric and Hybrid Vehicles.
- • tires, rims, wheel bolts and hubcap and related work and spare parts.
- • Orientations of wheel angles, except for the orientation required for maintenance and repair work.
- • painting, crash repair, rust damage repair and rust protection.
- • Vehicle Waxing and Interior Cleaning.
- • fuels and their additives (all propulsion, including charging of electric and hybrid vehicles)
- • Filling the AdBlue additive

- towing, transporting and storing the vehicle

6.4 Volvo XC60

At Volvo, 7.14% of the actual costs of the material were more expensive than the maintenance contract, i.e., 92.86% were cheaper than the maintenance contract. From this, it can be concluded that the maintenance contract is particularly expensive. Compared to the average price, a maintenance contract is 30% more expensive, and the highest price is 13% more expensive than a maintenance contract. Most of the maintenance costs for the material cars are cheaper than a maintenance contract, and when compared the highest price with the actual price, it is 48% more expensive. From a cost point of view, it can be concluded that this maintenance agreement is not a viable alternative to a leasing company. With this maintenance contract, it would be more profitable to bear the risk of realized maintenance and repair costs. Table 3 shows the cost of that car model.

Table 3. Volvo XC60 90,000 km maintenance costs

Maintenance costs	Realized	Maintenance contract
Average price	2275,98 €	2969,80 €
The highest price	3365,34 €	
The lowest price	1425,83 €	

According to Volvo's terms and conditions (2022), these are included in the maintenance agreement:

- maintenance services following the manufacturer's or importer's maintenance program and protocol, including labour and materials, e.g., oils, fluids and original spare parts

- • Necessary repairs to mechanical and electrical faults and damage caused by normal wear and tear and regular vehicle use, including work and materials such as oils, fluids and original spare parts.
- • The following consumables and materials will only be replaced/added during periodic/annual maintenance, if necessary:
- • wiper blades
- • fluids (oils, brake fluid, coolant, windshield washer fluid)
-

According to Volvo's terms and conditions (2022), these are not included in the maintenance agreement:

- • Defects and damage covered by warranties, insurance, etc. relating to the vehicle and its accessories
- • defects or damage resulting from:
 - the use of the vehicle has been abnormal or negligent
 - the vehicle is overloaded
 - an accessory other than that specified in the agreement is installed in the vehicle
 - the vehicle has been used for professional transport
 - the vehicle has been used for professional transport
 - the vehicle has been used for racing
 - the vehicle has been burglarized, stolen or damaged
 - the vehicle has used impure fuel
 - the vehicle uses fuel or oils or fluids other than those specified in the vehicle's owner's manual
 - there has been a fire, natural disaster, war or other events comparable to force majeure
 - an external factor (e.g., loose rock, ground contact) has hit the vehicle

- modifications or repairs have been made to the vehicle contrary to the manufacturer's specifications

- • Defects or damage resulting from the installation of non-original parts or equipment in the vehicle and defects and damage to such parts or equipment
- • Defects or damage resulting from modifications or repairs to the vehicle by a non-authorized service dealer.
- • rim replacement or other measures
- • tires, their replacement, balancing and adjustment (e.g. wheel alignment adjustment) or other tire measures
- • fuel
- • normal ageing and wear of the car body and interior
- • measures that are part of the regular maintenance of the vehicle, e.g. washing, cleaning, waxing, unless otherwise agreed
- • air conditioning disinfection and maintenance
- • maintenance of auxiliary fuel heater
- • glass and seals, paint, corrosion and body damage (e.g. stone shocks, crashes)
- • Measures on the non-factory integrated car kit phone and its accessories
- • towing, transporting, storing or associated costs of the vehicle and/or goods
- • passenger transport and/or accommodation or related costs
- • Defects and damage caused by objects in the vehicle and/or its luggage compartment
- • insurance premiums
- • current or future taxes and other public charges, such as inspection fees and usage fees

6.5 Comparison

The study results show that even with such a small sample, expensive cost calculations could be included, which significantly exceeded the price of the maintenance contract. The results show that, as a rule, the costs are lower when the maintenance is paid for, and the risk of maintenance price fluctuations is borne.

Figure 1 shows how the Skoda and Volvo columns are similar. In both cases, it is noted that the average price is below the maintenance contract, and the highest price is above it. The exception in the column chart is Volkswagen, whose maintenance contract is priced to be exceptionally competitive and is even below-average prices. The difference is further confirmed by the fact that the content of the care agreements is very similar.

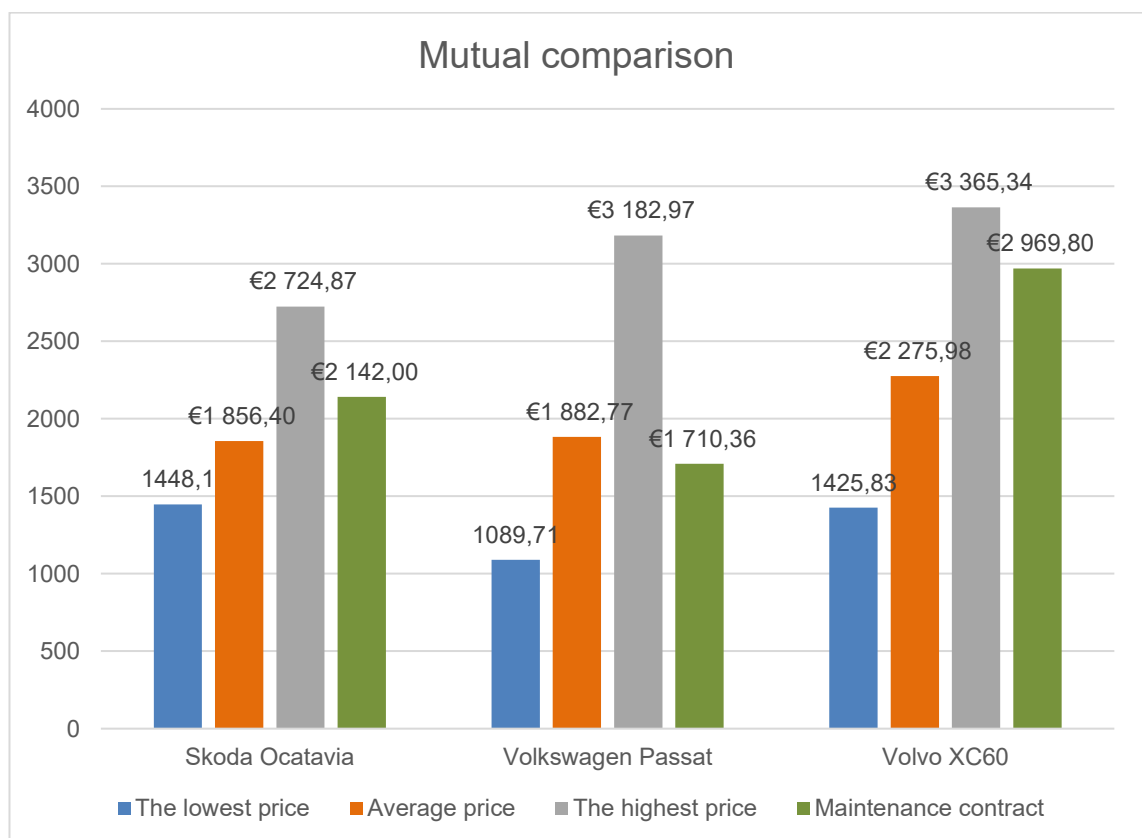


Figure 1. Mutual comparison.

6.6 Financial perspective

When talking about a company, it is also necessary to look at maintenance contracts from a financial perspective. Whether the maintenance cost is paid when it is incurred or in monthly instalments affects the company's cash and committed capital. The earlier the cost is paid, the earlier the money spent is out of the company's available capital. If the payment of costs can be postponed, the need for loan capital can be reduced.

As a rule, the first maintenance on new cars is only about a year after commissioning. Figure 2 shows the effect of the maintenance agreement on the company's cash flow for a new car. The costs in the picture are not actual costs but examples that correspond to the costs of the first three years of maintenance in their size class.

ILMAN HUOLENPITOSOPIMUSTA				HUOLENPITOSOPIMUKSELLA			
kk	Veloitus asiakkaalta	Huoltokulu leasingyhtiölle	Kum kassavirta	kk	Veloitus asiakkaalta	Huoltokulu leasingyhtiölle	Kum kassavirta
1	80	0	80	1	80	-65	15
2	80	0	160	2	80	-65	30
3	80	0	240	3	80	-65	45
4	80	0	320	4	80	-65	60
5	80	0	400	5	80	-65	75
6	80	0	480	6	80	-65	90
7	80	0	560	7	80	-65	105
8	80	0	640	8	80	-65	120
9	80	0	720	9	80	-65	135
10	80	0	800	10	80	-65	150
11	80	0	880	11	80	-65	165
12	80	-500	460	12	80	-65	180
13	80	0	540	13	80	-65	195
14	80	0	620	14	80	-65	210
15	80	0	700	15	80	-65	225
16	80	0	780	16	80	-65	240
17	80	0	860	17	80	-65	255
18	80	0	940	18	80	-65	270
19	80	0	1020	19	80	-65	285
20	80	0	1100	20	80	-65	300
21	80	0	1180	21	80	-65	315
22	80	0	1260	22	80	-65	330
23	80	0	1340	23	80	-65	345
24	80	0	1420	24	80	-65	360
25	80	-850	650	25	80	-65	375
26	80	0	730	26	80	-65	390
27	80	0	810	27	80	-65	405
28	80	0	890	28	80	-65	420
29	80	0	970	29	80	-65	435
30	80	0	1050	30	80	-65	450
31	80	0	1130	31	80	-65	465
32	80	0	1210	32	80	-65	480
33	80	0	1290	33	80	-65	495
34	80	0	1370	34	80	-65	510
35	80	0	1450	35	80	-65	525
36	80	-1100	430	36	80	-65	540

Figure 2. Comparison of cash flows

At three years, the cumulative cash flow begins to level off. However, for the first twelve months, € 460 has been accumulated in the cash register without the maintenance contract. With the maintenance contract, € 180 has been accumulated. The same is noticeable from the second scheduled maintenance when € 650 has been accrued without a maintenance contract and € 375 with a maintenance contract. The actual difference is noticed before the scheduled maintenance when the amount of money accumulated in the cash register is considerably higher without a maintenance contract. In three years without a maintenance contract, there is more money in the cash register in 27 months

than in any other month with a maintenance contract. It can be concluded that this money could be used for other company activities, but this study does not start to calculate what effect it would have.

Also, to be considered is information contained in car maintenance invoices that importers do not currently include in their maintenance contracts. Information contained in the maintenance invoices tells what has been done to the car during maintenance. Furthermore, what the mechanic has noticed about the car. This information would help identify and anticipate potential faults. Anticipating faults can save on the car's life cycle costs. This information can be obtained from the maintenance invoices if the maintenance and repair costs of the cars are paid without a maintenance contract. However, it must be remembered that not all faults can be predicted.

6.7 Development proposal

As a development proposal, the following points should be considered when negotiating future maintenance agreements.

The payment period for the maintenance contract invoices should be clarified. Although a flat monthly fee is a standard payment method in the car trade, it does not mean that other payment methods could not be introduced. For example, the maintenance contract bills could be paid once a year according to the projected realized costs. As a result, the cash flow would look very similar to new cars without a maintenance contract.

Maintenance invoices should provide information on what has been done during maintenance. When negotiating the terms of a maintenance contract with an importer, it must be required that complete maintenance and repair history information on cars with a maintenance contract be made available to the leasing company.

7 Summary

The study examined the profitability of the maintenance contract from the perspective of the leasing company by comparing the actual maintenance and repair costs with the price of the maintenance contract.

The study found that one maintenance contract among the cars selected would be a cost-effective option. Volkswagen's maintenance contract is very competitively priced and was the most affordable of all the options. However, even for this contract, other factors must be considered, such as the information contained in the maintenance invoices and the financial aspect.

When a leasing company negotiates a maintenance contract for all importers, it must be explored how the priority of the maintenance contract payment program could be reduced. In addition, complete maintenance and repair history information had to be obtained for cars with maintenance contracts.

A proposal for further research would be to do the research again in the future or even to develop reporting, which would allow the relative costs of contracted and non-contracted cars to be monitored annually.

References

Baer, Linus. Chief operating officer. Secto Automotive Oy. Haastattelu 24.2.2022.

Heikkilä, Tarja. 2014. Tilastollinen tutkimus. 9., revised edition. Helsinki: Edita Publishing Oy.

Holopainen, Martti; Pulkkinen, Pekka. 2008. Tilastolliset menetelmät. 5., revised edition. Helsinki: WSOY Oppimateriaalit Oy.

Kananen, Jorma. 2011. Kvantti: kvantitatiivisen opinnäytetyön kirjoittamisen käytännön opas. Jyväskylä: Jyväskylä University of applied sciences.

Secto Automotive Oy. Fonecta finder.

<<https://www.finder.fi/Autonvuokraus/Secto+Automotive+Oy/Porvoo/yhteystiedot/1501856>>. Read 25.2.2022.

Secto esittely yrityksille. 2022. Internal company document. Secto Automotive Oy.

Skoda huolenpitosopimus. Sopimusehdot. Online material. Helkama Auto Oy.

<<https://www.skoda.fi/palvelut-omistajalle/skoda-huolenpitosopimus>>. Read 22.3.2022.

Volkswagen huolenpitosopimus. Henkilöautojen sopimusehdot. Online material.

K-auto Oy. <<https://www.volkswagen.fi/fi/huolto-ja-palvelut/huolenpitosopimus.html>>. Read 17.3.2022.

Volvo sopimuksen yleiset ehdot. Online material. Volvo Car Finland Oy Ab.

<<https://www.volvocars.com/fi/palvelut/huolto-ja-yllapito/volvo-sopimus/volvo-sopimuksen-ehdot>>. Read 16.3.2022