

## THE THEORY AND PRACTICE OF TESTING THE QUALITY OF OUTSOURCING SERVICES IN THE AUTOMOTIVE INDUSTRY

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**Abstract:** In the automotive industry, it is common practice to outsource additional processes to external companies. Outsourced processes have to be evaluated. The practice and theory related to researching the quality of services and the level of customer satisfaction in the literature are well and wide described. However, in practice, the automotive industry does not use known solutions but applies its own criteria and methods for assessing the quality of outsourcing services and testing the level of customer satisfaction. The article is an attempt to analyse the solutions used in this area in the automotive industry and to indicate the strengths and weaknesses of the solutions used. Paper includes SWOT studies for a practical example of a used customer satisfaction test. Potentials for improvement are defined.

**Keywords:** service quality study, automotive, customer satisfaction

### 1. INTRODUCTION

The aim of the paper is to indicate available methods of testing services in business relationship in automotive. To achieve it will review current methods and applications in the industry based on science. It will be also done SWOT analysis for a practical way of service level study from an outsourcing company.

The quality of service providing is developed through all levels of creation. Therefore each employee in the organization must be responsible for a given piece of quality, i.e. the quality of his work. This kind of understanding supposes the presence of defined and controlled course of conduct processes in the company. They must cover the entire "lifecycle" of a given product or service. The system ensuring the implementation of defined quality criteria, referred to as the quality management system allows for its efficient description and functioning (Bartz, 2003).

Another service establishing is the fact that quality can be understood differently by customers and suppliers. Both these points must be included in the quality performance for product and service. From the user (customer) point of view, the quality is shown in Fig. 1. Important in the perception of services are as well functional as non-functional needs like e.g. company image or environmental policy (Kasim et, al.2020; Knop, 2020).

In the automotive industry, occurs business customers so in cooperation we are dealing with relations between 2 economic entities - B2B. (Wankel, 2010, Zoltan et al. 2017; Ulewicz 2018). Figure 2 presented 2 possible relations between company and customer.

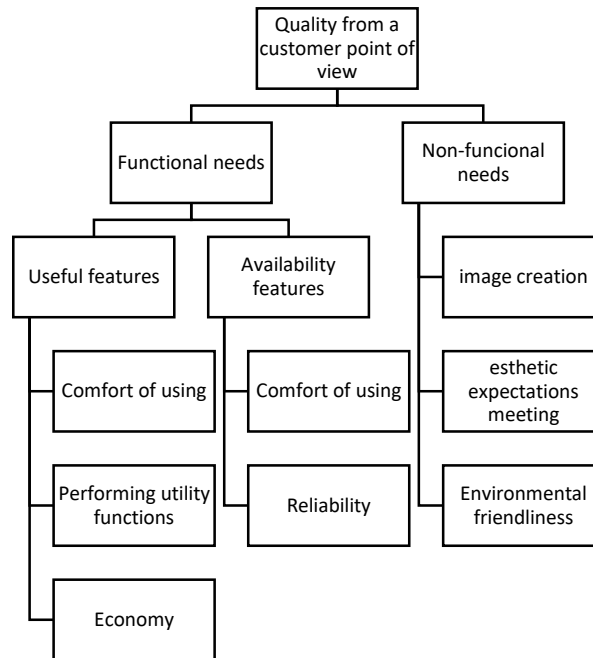


Fig. 1. Quality from customer point of view (Fraś, 2000; Borucki i Urbaniak, 1996; Stoma, 2012)

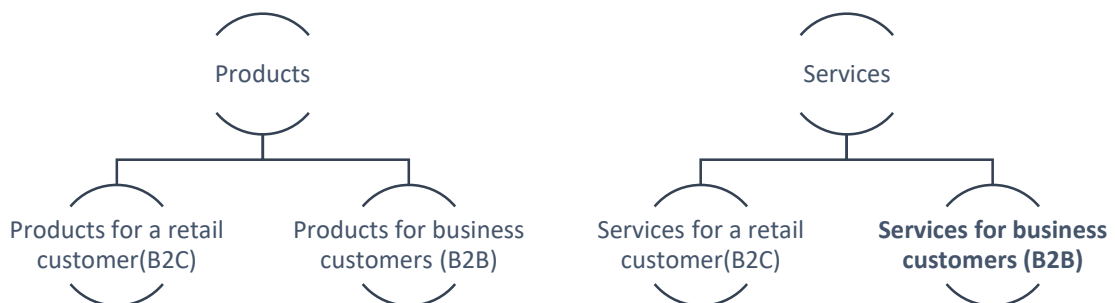


Fig. 2. Possible relations between the company and the customer (author's study)

Practice shows that, as a retail customer, we repeatedly assess the quality of the services or products we receive, more or less consciously. The concept of customer satisfaction can be found in the ISO 9001: 2015 standard, specifying the requirements for a quality management system in an organization. The document indicates customer satisfaction as one of the elements that should be supervised, also there should be records related to it.

The standard states in point 9.1.2 that monitoring customer perception may include data from such sources as:

- customer satisfaction studies,
- customer data about the quality of the delivered products,
- customer opinions studies,

- analysis of lost business benefits,
- positive information from customers,
- warranty claims,
- dealers reports,
- etc.

The range of available tools, systems and approaches to customer satisfaction assessment covers many areas related to management, marketing and economic approach to the enterprise. Popular methods such as SERVQUAL and SERFPERF are often based on surveys, but due to their nature, they remain subjective. Due to the way customer satisfaction is treated, an individual approach to customer satisfaction assessment can be indicated. On the other hand is a holistic approach, treating customer satisfaction as one of the many elements of the assessment of the company's functioning.

In the literature, you can find many works in the field of customer satisfaction research with the quality of services provided. Most of the available materials, concern the quality level testing in the context of a retail customer. Works related to logistics processes dominate the available business customer satisfaction surveys (Bommer et al., 2001; Durvasula et al., 1999; Gil-Saura et al., 2018; Wetzel, Hofmann 2020). When it comes to research on business customer satisfaction, most papers are carried out for the sector of logistics services in the field of transport. Only a limited literature (Chung et al., 2021; Algfeli et al., 2019, Mauri et al., 2013, Vise et al., 2015) relate to researching business / corporate customer relationships in the other service sectors. Literature review as well as author's own professional experience indicate a research gap. Is it in the field of linking the quality of outsourcing services with the link between business / corporate customer satisfaction in the automotive industry. There are no universal solutions or a developed methodology that takes into account the specificity of the automotive industry. Automotive companies implement their own solutions for testing the quality of services as well as testing the level of satisfaction.

It creates a challenge for service organizations that would like to monitor the level of service for a corporate customer. Existing research is mainly based on previously prepared questionnaires distributed to a previously selected target group. Due to the ease of data quantification, surveys are the main research tool, often based on the Likert scale (Likert, 1932). However, in the case of business relations, a high response rate is desirable due to the limited number of respondents (Sheth, 2001).

## **2. METHODS OF MEASURES THE QUALITY OF SERVICES AND CUSTOMER SATISFACTION**

Enterprises need to understand what the customers' expectations are and how they perceive service. So that they can better deliver better services to satisfy existing customers and attract new customers. The methods of testing the quality of services can be divided into two groups: qualitative methods and quantitative methods (Fraś, 2014). When it comes to quality methods, they are based on quality standards. However, in the case of quantitative methods, various types of questionnaires and forms are used as the basic instrument. The division of service quality testing methods is shown in Fig. 3.

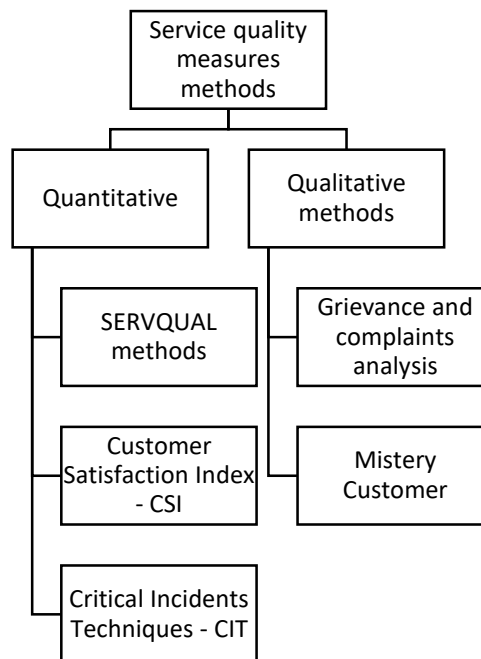


Fig. 3. Classification of service quality measuring methods (Fraś, 2014)

However, there are other classifications of methods for testing the quality of services. Kujawiński classified the methods based on multiple criteria, including (Kujawiński, 1998; Stoma, 2012):

- Research from the service providers customer's point of view.
- Objective or subjective research.
- Differential and non-differentiating research.
- Research focused on strengths or weaknesses.
- Subjective methods focused on the consumer, used to measure and evaluate the quality of individual varieties of services.
- Multi-attribute methods.
- SERVQUAL, (Parasuraman et al., 1988, Parasuraman et al., 1991).
- SERVPERF (Cronin, Taylor, 1992).
- Business Scorecard (BSC), (Kaplan, Norton 1992, 2004).
- Methods of investigating events.
- Sequential event method.
- CIT (Critical Incidents Technique) (Flanagan, 1954).
- "Problem detecting" method.
- Frequency-semantic analysis of FRAP problems.
- Grievance measurement.

Besides the methods mentioned above, there are many less popular and less described methods. The reality of service providers, however, maybe a little bit different. Taking into account the real situation in enterprises providing their services for the industrial sector, own studies are common. Such a practice results from the lack of knowledge of the existing solutions developed scientifically, as well as from the belief in the knowledge of customer requirements with which one has to face daily. Companies certifying their management systems in the enterprise for compliance with ISO 9001: 2015 as one of the guidelines resulting from the standard, need to test customer

satisfaction. This applies to all organizations, regardless of the form of work implementation or internal processes. Despite the many models and methods available and widely described in the literature, organizations often create their own satisfaction surveys based on previous experiences.

Referring to the ISO 9001: 2015 standard, it should also be noted that it obliges enterprises to qualify their suppliers. The latest standard editions have included service providers on this list, so the satisfaction assessment may be carried out twice – on the initiative of the service provider and the recipient (assuming both companies following the standard).

### 3. APPLIED PRACTICES IN THE AUTOMOTIVE INDUSTRY

Customer satisfaction, perceived as an important indicator in the functioning of the enterprise, is one of the key performance indicators collected in organizations. In the example described, the services provided for business customers will be the point of reference. The mass production industry in its characteristics is based on supply chains. Classical perception includes the physical delivery of materials, components, or subassemblies. However, for this study, such models should be viewed concerning companies providing external services. Taking into account the specificity of today's market, high variability, and specialization in companies scopes, enterprises often and willingly decide to use external providers for other processes accompanying the main one. Despite the growing demand for services and the necessity to evaluate them, they are often treated by producers of goods without special attention. Cases of such behaviour result in the evaluation of service providers according to the standard methodology used for material suppliers. Note that companies at different levels in the supply chain may use the same external service providers. Supply chain proposal including outsourcing in Figure 4.

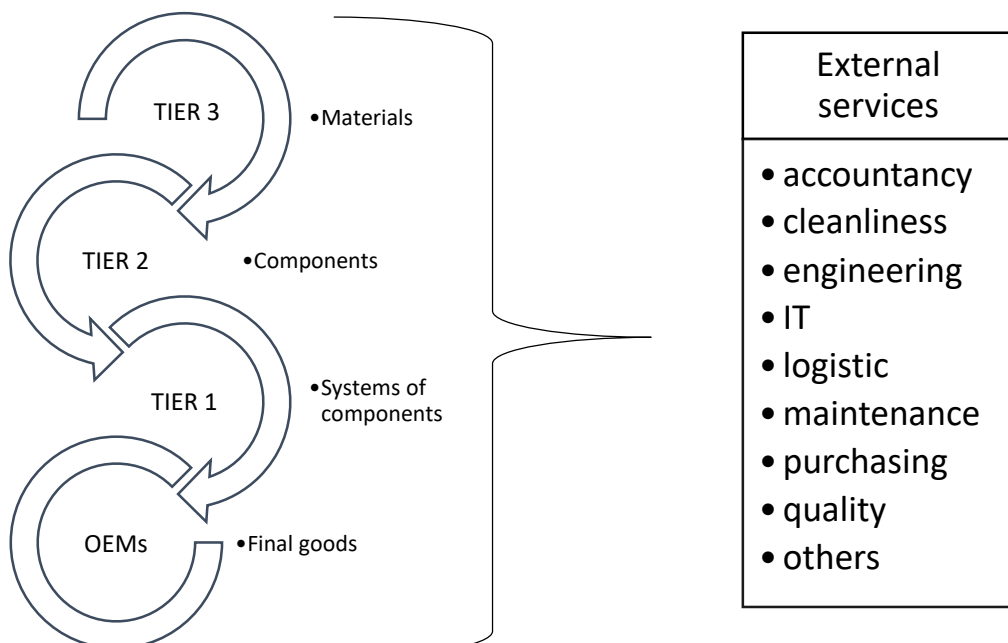


Fig. 4. List of outsourced services in the automotive industry (author's study)

**OEM** - original equipment manufacturer - an organization that makes devices from component parts bought from other organizations. **TIER 1,2,3** – components' supplier in supply chain

Literature research indicates the lack of a suitable methodology for the evaluation of service providers by business customers for the automotive industry, the greater

the importance of an effective customer satisfaction survey carried out into the organization.

The standard way of obtaining feedback from the consumer (business customer) is through surveys. Also, this form is most often chosen by external companies to obtain data for qualitative analyses and to assess the degree of satisfaction. Each area of outsourcing services provided (Fig. 4) is characterized by unique factors that characterize a given process. At the moment, there are no detailed (universal) guidelines for all suppliers from the automotive industry service category. Each service group should test its specific characteristics, but there are no identified premises for the use of a universal instrument or a set of research instruments for the automotive industry. It seems purposeful, which is confirmed by information from numerous industry meetings to develop a universal tool or set of tools. The standardization of the automotive industry makes it right to develop a standard for testing the quality of services, in conjunction with the analysis of customer satisfaction. This would make it easier to compare the level of services providers, as well as exchange information between enterprises. Another noteworthy topic is the possibility of using different methods of assessing suppliers even within one corporation. This situation can lead to a weakening of purchasing power and the missed opportunities arising from consolidation.

An example of a proprietary methodology concerns a service company operating mainly in the high-volume industry, and in particular for international automotive customers. The survey is carried out annually and is addressed to all customers, both active and inactive, who received services during the year. It covers 7 main topics, and in 3 of them, there is an additional item. The methodology is listed below.

1. Provision of the service:
  - meeting the requirements included in the order and correct implementation,
  - response time and provision of the required resources,
  - work standards.
2. Professionalism and competencies of the company's employees:
  - customer service,
  - regional manager,
  - expert,
3. Reporting work:
  - timely reporting,
  - data quality and transparency.
4. Overall assessment against the competition (price, quality, other).
5. Suggestions for development.
6. Possibilities of cooperation development.
7. Willingness to recommend services.

The evaluation is carried out on a scale of 1-10, where 10 is the highest score for a given issue. The survey was addressed to those who come into contact with the service company on a daily basis. It is welcomed to survey more than 1 customer representative, but it is in no way defined. The survey is carried out in a hybrid form. In the first place, it is done by phone, if the respondent does not want the will to participate by phone, it is sent to him in electronic or paper form (depend on preferences). It is also

permissible to conduct the survey in person. However, this is not a standard, but only good practices of one of the companies in the automotive industry.

#### **4. SWOT ANALYSIS OF ORIGINAL SOLUTIONS FOR ASSESSING THE SERVICE QUALITY AND CUSTOMER SATISFACTION IN THE AUTOMOTIVE INDUSTRY**

##### **4.1 Context**

The applied patterns used by companies from the automotive industry that meet the basic requirements of ISO 9001. The questionnaire was subjected to a SWOT assessment concerning the mentioned scientific methods. The data used should indicate the company situation in the context of customer satisfaction studies. At the same time, there were also proposed methods of process optimization. The analysis is aimed at potentials for improvement. The implementation will generate a SWOT model (Strengths - Weaknesses - Opportunities - Threats). During analysis, we can refer to the closer and farther environment. It will take into consideration trends and current actions. It is appropriate to receive information about opportunities and threats for the company. (Obłój, 2014).

##### **4.2 Strengths**

The strengths of the solution are undoubtedly an interdisciplinary approach. The implementation of the survey in 7 main areas gives an opportunity for the company to obtain a wide range of information. The collected data concern the assessment of the work of individual employees, as well as the overall receipt of the service provided and its delivery - reporting. The company also reaches out to the customer in terms of both its own development and cooperation with the customer. Additional communication with customers is maintained by carrying out a cyclical survey in an annual cycle. This allows, apart from the everyday reality of providing services, to obtain a wider spectrum for the overall assessment of cooperation. At the same time, the customer receives a message that he is important to the organization, and its assessment has an impact on the operation and development of the company. Through question 4 regarding the overall evaluation against the competition, the enterprise has the opportunity to verify the market environment and its position on it (benchmarking). This is an additional "extra" benefit of such research.

If we take into account the wider scale of the studies, we deal with a multitude of approaches. Therefore, the respondents - in this case representatives of the enterprise using the services - must approach the topic individually. This can be beneficial for motivation. The respondents also have a wide range of tools used, which gives them the opportunity to analyse their own processes in the company. The implementation of a standardized test for all sub-suppliers may cause reluctance and boredom resulting from the monotony of the qualification process. The organization carrying out the research using the proprietary method obtains an individual assessment by using it. Regardless of the result of the survey, it should not negatively affect the perception of the company. This is because the results cannot be compared with other service providers. It is not possible even for entities engaged in similar activities. To sum up - the service provider receives an assessment of its activity without allowing the customer to make a negative comparison with other recipients.

### **4.3 Weaknesses**

As weaknesses of the study can be considered as a lack of systematic scoring. With quite a developed research tool it could be a worthy idea to try systematic it. Shaping the approach with sufficient entrance data sufficient segregated by customer representatives roles, can give an opportunity to receive better fitting information. There is an option to better feed internal development. Lack of specific criteria leaves researchers a field for interpretation. To obtain higher quality data should be indicated a systematic approach to organize studies well. Another aspect is to use the 10 point scale. It gives a very wide spectrum of answers. However, there is no score description on this scale, and users may feel uncomfortable and unnatural during the scoring process. Available is a wide range of research instruments. An example to be applied is the almost 100-year-old Likert scale (Likert, 1932). Mentioned scale precisely shows what and how can be scored.

Open questions, as well as the multitude of categories, expand the survey and increase the time needed to complete it. Customers from the industrial environment - mainly employees with an engineering background, may not be willing to participate in the study, this effect intensifies with each subsequent question. It is possible that reducing the scope of the survey, could increase the willingness of respondents to participate.

At the same time, there is a significant risk of not reaching the appropriate customer representatives with the test. Due to extensive production organizations, it is impossible to clearly identify the person responsible for the service provided. The start of the service is preceded by a purchasing process. Therefore, the persons responsible for purchasing provide information about the service to the departments in the organization directly interested in. If we ask a representative of the purchasing department for an evaluation, it may only concern expectations and price.



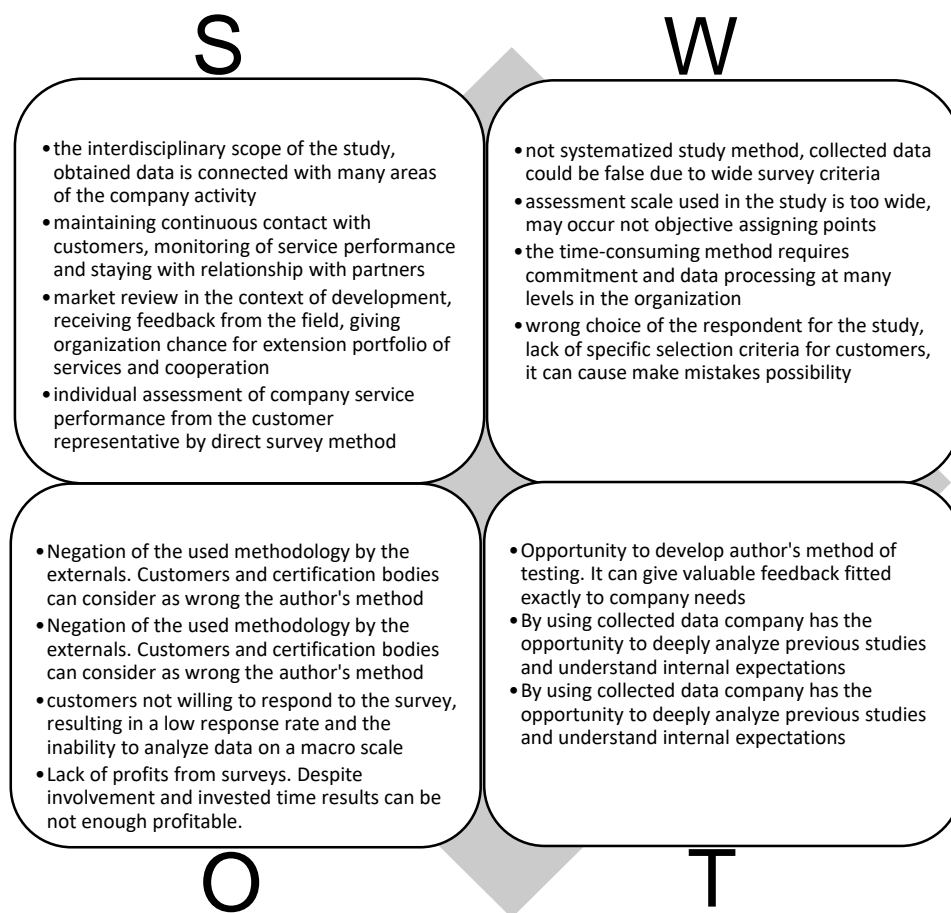


Fig. 4. SWOT analysis for origin company studies

#### 4.4 Opportunities

Opportunities resulting from the use of the proprietary method can be considered in different ways. It is possible to develop and adjust the research to the needs of the enterprise. The possibilities are not limited by external factors. By drawing appropriate conclusions from year to year, the survey can be more and more adapted to the needs of the company. Years of practice provide solid foundations and the scope of data based on which the research can evolve and better investigate service satisfaction. It is also worth taking a close look at the data collected, so far in the context of conclusions and the possibility of introducing measures. Also, changing the methodology to one of the scientific studies may turn out to be the right choice. When an organization already has experience in customer satisfaction research, it knows what it involves, and can consciously and thoughtfully approach the selection of a scientific model. Using the available data, it is worth looking for the correlation of the current solution with the available methods. Using the knowledge of the organization effectively, it is possible to analyse the significance of individual points. By reviewing the responses from previous years of the survey, it is possible to compare the usefulness of individual sections. Elements that bring satisfactory conclusions should be expanded and given special emphasis. However, if the questions do not bring satisfactory results, it seems advisable to modify or eliminate them. Conducting such activities may also increase the respondents' interest in participating in the survey. Another stimulus of variability will be introduced, which may translate into obtaining the effect of freshness.

#### 4.5 Threats

Threats are an indispensable part of any action. According to the principle that those who do nothing are right, all activities are exposed to adverse effects. There is a probability that customers or certification bodies of the management system may contradict the method used. Although the ISO9001 standard does not define the method of testing, the lack of scientific or practical support in the industrial environment may raise doubts for an external observer from outside the organization. It is possible to conduct a survey, e.g. by competition based on scientific methodology. This may cause negative feelings among respondents in relation to the study prepared individually by the company. The use of research-based on a scientific model may also yield better structured and more complete data. The above-mentioned lack of connection with theory or general practice among enterprises, may also result in a reduced willingness of customers to participate in the survey. Customers may not feel at ease with the convention proposed by the company. The own method, due to the lack of support in science or no possibility to compare to analogous solutions, may ultimately turn out to be ineffective. The collected data may not be objective and due to the lack of comparative possibilities, may be misleading or illustrate customer satisfaction in an incomplete, selective manner.

Comparing the potentially low effectiveness with the time-consuming nature of the solution, the profits resulting from the action may turn out to be disproportionate to its time-consuming nature. A critical look at the data obtained so far, as well as the conclusions and actions resulting from them, may allow a more objective look at the methodology. A situation in which the history of the research conducted previously would indicate the recursive nature of negative factors, in the opinion of customers may indicate a limited justification for conducting the survey.

There is considerable potential for improvement, but it is worth emphasizing the original nature of the study. Monitoring the customer's level, regardless of the methodology used, is a value in itself. The implementation of direct surveys is an excellent starting point for the analysis and possible development of the process. It is a strategic decision of any enterprise to ask customers to evaluate the work performed. A wide variety of tools are available to carry out the study. Choosing the right one should be preceded by an analysis of your own needs and knowledge of the market. The case of company providing services for the production industry, shows that the tools are not always adapted to the requirements. In this case, attention is drawn to the multidimensional nature of cooperation in the business environment. The service process from the beginning to the end and closure can be multidimensional, both on the part of the service provider and the recipient of the service. In practice, the service from the moment of ordering to implementation goes through many departments and people on both indicated sides. Often it is impossible to easily identify people capable of comprehensive evaluation. This may cause misunderstandings, distortions, and a lack of a realistic assessment of the service.

#### 5. DISCUSSION

There are many models in the literature describing customer satisfaction survey methods concerning various industries. Most often, however, these studies concern a retail customer. However, the retail customer satisfaction survey seems to be less complicated due to the one-dimensional nature of the assessment. The situation is different for business customers. Studies for the manufacturing sector are available,

but they mainly concern logistics services. Due to their nature, logistics services in the production supply chain are a specific example that is difficult to transfer without modification for other service providers. The inability to use the scientific achievements to date may induce service companies to develop their own customer satisfaction research tools. In the example described, the organization chose its own way of implementing the quality assessment from the recipient's point of view. The form of the study is extensive and also includes open-ended questions. The SWOT analysis showed strengths, i.e. the interdisciplinary scope of the study, maintaining ongoing contact with the customer, and verification of the market environment in terms of development. The resulting benefits are a real development stimulus for the organization. The identified weaknesses, such as the lack of a systematized methodology, too wide a scale of assessments in the study, or the time-consuming nature of the study, open up the possibility of improving the process. An in-depth analysis of weaknesses may lead to an increase in the effectiveness of the customer satisfaction survey process with the services provided. Opportunities for improvement are the possibilities of developing the original method. Embedding the current solution within a scientific theory as well as concluding the ideas provides an opportunity to improve the process. The availability of information enables the analysis of the data held, it is processing and modelling of beneficial business solutions. Probably also the selection of the scientific method based on the previous experience will be more accurate than without it. The organization has the opportunity to use the acquired knowledge in the event of a change in the research concept. Certain threats refer to hypothetical situations where the negation of the applied methodology by the external environment may occur. Both customers and certification bodies may try to challenge the test methodology and its effectiveness. So far, no such situations have been found, but they should be taken into account. Lack of reliance on popular research solutions or methods may also cause the reluctance of customers to participate in the survey. The study gives the impression of development, but over time it may turn out that it does not contribute much to the organization.

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## 6. SUMMARY

The customer satisfaction studies as one an important process are the factors of supervision in the organization. Companies operating with ISO9001 standards are obliged to conduct a customer happiness test. There are many articles available in literature studies. The feature is related to products and services. Due to the intangible nature of the services, it requires different setups. Also, the type of customer should determine the approach. Individual and business customer requires different ways. The case of business services for productive production is highly multidimensional. Service providers use their own methods for customer research. These methods have some potential but they need development. The exception is the logistics branch, where attempts were made to systematize customer satisfaction studies with a scientific method such as SERVQUAL or SERVPERF. However, the automotive industry has a wider range of services that it uses. Customization of available methods or create suitable ones becomes an opportunity to conduct further research. The solution can give benefits as well for service providers and service - recipients. For the automotive industry extension of ISO9001 is IATF16949 Standard. Both documents require the suppliers' qualifications. The automotive industry focuses mainly on material/components suppliers. This is due to the extensive set of supplies chain. There is less emphasis on service providers. Taking into consideration of the growing portfolio of the outsourcing companies situation seems open and ready for development. Manufacturing plants strive to improve their production and production technologies. If occur possible they order additional processes to external partners. Implementation of a standard allows to ease assessment of external companies can allow to treat them the systemic way. Potential benefits resulting from implementation can be connected with the support assessment process, comparability of progress, or even supervision over service partners. Further research should be based on contacts with production industry participants. Verification and compilation of internal methods of qualification of unmaterial suppliers can give a wider picture of the situation. The current practice of operation shows that plants can use different solutions in this regard even within one company in different plants.

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