

Evaluating Service Quality in Automotive Outsourcing: Gaps Between Standards and Practice

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Abstract: Outsourcing plays a pivotal role in the automotive industry, enabling companies to optimize processes and focus on core competencies. However, evaluating service quality remains a challenge due to significant gaps between standardized frameworks, such as ISO 9001 and IATF 16949, and the practical requirements of collaboration with service providers. This article reviews current research on service evaluation in the automotive sector, emphasizing the specific attributes of relationships between service providers and recipients. The paper also analyses findings from pilot studies, which highlight the importance of developing integrated methodologies for assessing service quality. These methodologies aim to effectively bridge theoretical standards with operational practices. The results underline the need for further research to unify evaluation models, contributing to enhanced outsourcing management across the automotive industry.

Keywords: automotive, service quality, outsourcing, ISO 9001, IATF 16949

1. INTRODUCTION

Outsourcing is a rapidly growing area of research due to its significant role in the economy. It represents an interesting alternative to carrying out internal processes within an organisation regardless of its nature - commercial or otherwise. There are many factors contributing to the growing interest in this topic. Mainstream academia points to an increase in interest in the subject in the second half of the 20th century, but the concept itself has accompanied humanity since ancient times when the idea of mercenaries first appeared. Nowadays, the use of the concept is widespread. The literature extensively describes the reasons for the use of outsourcing, the possibilities for its use, and the consequences resulting from such practices.

One industry widely using the outsourcing concept is automotive. Automotive manufacturing is an interesting case study that integrates a wide range of processes. At the same time, it represents, in a way, a cross-section of the economy, as its products are massively used in every latitude, while the way production systems function is very complex and when considering it, phenomena such as global supply chains, interdisciplinary production processes combining multiple manufacturing techniques, big



data management or lean manufacturing methodologies containing many tools to help optimise processes, and it is open to the wide application of business process outsourcing (BPO).

The widespread use of the outsourcing concept in the automotive industry suggests the existence of mechanisms that determine the selection and subsequent proper management and evaluation of cooperation with a service provider. In practice, however, while it is possible to note the existence of literature supporting the selection of suppliers or the management of the outsourced process, the theme of evaluating satisfaction with cooperation is rather poorly addressed. In contrast to physical supply chain management, which is widely described by industry standards following IATF16949, service provider management is based on the same criteria as the very general ISO 9001 standard. With this in mind, this article aims to compare how service providers are assessed while also verifying whether it is possible to apply a universal supplier assessment model to both directions of collaboration, i.e. customer satisfaction surveys for service providers combined with satisfaction assessments for customers. To this end, pilot studies are conducted to verify the degree of relevance of individual service factors for the provider and recipient perspectives.

2. LITERATURE REVIEW

The literature review will focus on three key aspects relevant to this article, i.e. outsourcing, service quality assessment and the automotive industry. The issues discussed will provide a better understanding of embedding the research topic.

2.1. The concept of outsourcing

A review of the literature indicates that the current understanding of the term outsourcing originated from a concept initiated in the 1980s, suggesting a focus on the core activities of a company (Peters and Waterman, 1982). At the time, a significant element in favour of such an operating strategy was the focus on and benefits of improving key elements of the organisation (Prahalad and Hamel, 1990). At the same time, there was considerable interest in the markets parallel to the literature research in outsourcing organisationally relevant but non-core processes to external service providers. The concept of outsourcing in practice allows additional processes in the organisation to be handed over to entities for which they are core processes and therefore the degree of specialisation is much greater. Turning the situation around has resulted in a greater focus on processes, as well as an increase in scale allowing tasks to be optimised with a positive impact on organisational and cost efficiency. Over time, the trend towards increased outsourcing began to gain momentum, at the same time that wage disparities across economies also resulted in outsourcing outside of national economies, mainly to countries with lower employee retention costs (Sturgeon and Biesebroeck, 2011). The main objective of outsourcing was to work towards productivity growth, as well as to be able to better focus on core processes within the organisation. This could directly translate into an increase in production with a decrease in direct employment. At the same time, there was an increase in both product and service suppliers (Calabrese and Erbetta, 2005). It has been shown that not every company has the ability to provide adequate resources for its operations using its own capabilities. Using external support for such processes brings significant benefits to the organisation. However, proper collaboration requires an appropriate level of interaction between partners (Pererva, et. al., 2021).

A significant turning point in the formation of the outsourcing market was undoubtedly the Covid-19 pandemic. The disruption of markets derived from the pandemic and the regulations associated with it changed the way supply chains operated. Researchers have drawn conclusions to consider in the context of how partnerships between companies operate under the impact of the occurrence of so-called 'black swans' - unexpected events. Prominent among the conclusions were approaches to the future functioning of supply between partners. The occurrence of a pandemic also allowed for a revision of views regarding the limited possibility of supply chains being disrupted (Handfield, et. al., 2020). Interactions can be influenced by factors such as contractual provisions or relationships between actors. Proven partners that provide a guarantee of supply are even more valuable in complex times. In the case of full production outsourcing, it has been noted that when suppliers are closer to the customer space this increases the likelihood of collaboration and subsequent cooperation between the parties. Undoubtedly, such decisions are influenced by issues of flexibility - the ability to respond quickly, the cost factor - the reduction of costs associated with excessive communication between branches, or the issue of convenience in cooperation and the reduction of time associated with having to travel distances (Colombo, et. al., 2023).

2.2. Outsourcing in the automotive industry

The automotive industry is characterised by a high degree of complexity and complexity of the processes involved. Different production techniques and materials are needed to produce a complete car consisting of many parts. This makes use of the Lean Manufacturing methodology, which originates from car manufacturing and makes it possible to operate competitively through the use of a range of activities and tools to optimise company processes. The selection of a supplier is challenging and requires an appropriate standardised approach (Surakasa and Shin, 2019). Only afterwards can it be assessed properly.

Modern production systems are structured in such a way that they rely heavily on external sourcing of materials, components, and component assemblies and the integration of robotic solutions into these processes further enhances efficiency and reduces production costs, as highlighted by Ulewicz and Mazur (2019), who analysed the impact of robotization in a car semi-trailers manufacturing context. The use of external partners for tasks that are less sensitive from an organisational point of view creates opportunities for the organisation to manage its own resources in key elements of the organisation's operations (Gereffi, et. al., 2005). External support could also be supportive in such cases as technology changes, as seen in the transition to electric cars (Kotler, et al. 2024). Among automotive suppliers, we can distinguish between large multinational corporations and small local manufacturers. The gateway to the world of automotive production is certification of a quality management system according to IATF16949 or optionally ISO9001. The automotive industry has been remarkably swift in embracing the concept of outsourcing, recognising its potential to enhance operational efficiency and focus on core competencies and recent advancements in Digital Transformation 5.0 have further enabled supply chain optimisation by integrating advanced technologies such as AI, IoT, and real-time data analytics. As noted by Chidozie et al. (2024), such transformations are pivotal in addressing the complexities and dynamic demands of modern supply chains. By incorporating the vision of modularity into production processes and vehicle design, outsourcing has seamlessly integrated into the industry's practices, making it feasible and

highly effective to implement and supervise. This modular approach allows for the delegation of specialized tasks to external partners while ensuring that the overall system remains cohesive and efficient. At the same time, manufacturers have strategically retained control over critical aspects of their operations by establishing and adhering to a well-defined hierarchy within the sector. This includes rigorous supply chain management, effective customer experience strategies, and robust quality assurance measures, all of which are essential for maintaining competitiveness in a highly dynamic market (Ulewicz, 2018; Jacobides, et al., 2015). This balanced approach ensures that while external suppliers handle specific modules, the manufacturers retain oversight and ensure that their standards and objectives are consistently met through the production and delivery processes. Significant differences between the direct and indirect cost categories were discovered, including a higher risk of cost hiding and a lower suitability for price negotiations for the indirect cost category (Rossi and Hampel, 2024).

2.3. Evaluation of outsourcing in the automotive industry

There are numerous industry publications and even a dedicated standard for manufacturing in the automotive sector - IATF 16949, which serves as an extension of the more general ISO 9001 framework. Among these, research focusing on specific processes, such as visual inspection, highlights the critical role of improving the quality and reliability of outsourced tasks within the automotive industry (Knop, et al., 2019). These studies emphasize the need for precision and focus on detail in outsourced processes, which directly affect the overall quality of the final product. Despite this extensive body of literature that outlines requirements for the automotive sector, specific and actionable guidelines for managing and evaluating outsourcing services remain absent.

The literature also highlights the potential of using computer simulation techniques in managing production processes, which can support decision-making related to outsourcing and supplier evaluation. Krynke and Klimecka-Tatar (2022) emphasize that simulations enable not only modeling and process optimization but also forecasting the consequences of decisions in outsourcing management. This approach is particularly valuable in complex systems like the automotive industry.

In principle, the majority of existing requirements and standards can be broadly applied to all producers of physical goods within the supply chain (Laskurain-Iturbe et al., 2020). However, these are often unsuitable for application to service providers, who play an equally critical but distinct role in the industry's ecosystem and in the context of Industry 5.0, the human factor becomes even more pivotal. As highlighted by Saniuk et al. (2024), and further supported by Kuzior et al. (2024), the integration of human-centric approaches alongside technological advancements is essential for addressing the challenges of modern industrial systems and fostering effective collaboration in complex environments. Kuzior et al. emphasize the role of digital development in strengthening university-industry collaboration, which can serve as a model for other sectors aiming to enhance their operational efficiency through innovation.

For instance, while material suppliers are evaluated using detailed, standardized frameworks, similar mechanisms for service providers are underdeveloped. Although key factors for effective collaboration between partners should ideally be integrated as early as the product design stage (Benabdellah et al., 2020), the lack of clearly defined

guidelines for supplier assessment creates significant gaps in effective monitoring and evaluation practices.

A comparison between the ISO 9001 and IATF 16949 standards reveals a high level of generality in ISO 9001 and a somewhat greater degree of specificity in IATF 16949, especially regarding criteria for product supplier quality surveys and customer satisfaction assessments. Emerging technologies, such as cloud-based reporting, have the potential to address these gaps by enabling real-time monitoring and streamlined communication between stakeholders. As noted by Cieřła and Ulewicz (2024), cloud solutions are transforming quality control practices, offering enhanced transparency and efficiency that are crucial for modern supply chain management in the automotive industry. However, these standards fail to address the unique challenges of evaluating service providers, leaving a void in the development of comprehensive supplier assessment frameworks. For the automotive standard, there is consistency in evaluating product suppliers and customer satisfaction surveys, yet this alignment does not extend to service providers. This inconsistency highlights a critical need for the industry to establish unified service guidelines that reflect the complexities of modern automotive operations and ensure consistent quality management across all aspects of production. Such initiatives are increasingly vital as companies navigate the demands of the 2020s, where integrated and standardized approaches to outsourcing services can significantly enhance operational efficiency and competitiveness.

Not detailed measurements of the level of service quality or customer satisfaction, as well as the parameters appropriate for assessing service providers in both the ISO and IATF standards, are particularly noteworthy given that both documents explicitly highlight the need for such evaluations. They not only recognize this necessity but also mandate it within specific sections, such as 8.4.2, which outlines supplier evaluation criteria, and 9.1.2, which focuses on customer satisfaction surveys (Ulewicz et al. 2023). However, the standards fail to provide clear, actionable guidelines or metrics tailored to the unique challenges of evaluating service providers, as opposed to product suppliers. This inconsistency leaves a significant gap in the perception and management of service provider quality, regardless of the perspective from the supplier's or the customer's side. Such ambiguity not only makes it difficult to effectively monitor and improve but also complicates efforts to develop unified methodologies for consistent and fair evaluations across different sectors and service types.

3. ASSESSING THE QUALITY OF BUSINESS OUTSOURCING SERVICES PROVIDED IN THE AUTOMOTIVE INDUSTRY

Finding answers to the issues involved in assessing service quality becomes feasible only when the essential complexity of the service itself is thoroughly understood and analysed. Services, by their nature, encompass a wide range of characteristics that differentiate them from tangible goods, making their evaluation more nuanced. Many authors define a service according to diverse aspects, emphasizing its multifaceted nature. For example, a classical definition describes a service as an intangible activity or benefit provided between parties, which does not involve the transfer of ownership. This lack of physical ownership is a defining attribute that separates services from products and underscores their unique challenges in assessment (Cieřła, 2021). Furthermore, the dynamic interaction between the provider and recipient adds an additional layer of complexity, as it requires consideration of both expectations and perceptions. This understanding lays

the groundwork for developing effective methodologies for evaluating service quality (Siwiec et al. 2022). At the same time, the existence of a pure service and a pure product is accompanied by intermediate forms such as a product with accompanying services and a service with accompanying products (Kotler, 2005). Another definition worth mentioning, based on the form of service provision, is that a service is any form of activity that contains immaterial elements and that involves an effect on the customer or on goods in the customer's possession that does not transfer property rights (Payne, 1997). It is worth noting the common denominator here, which refers to the absence of a change of ownership rights concerning a service - perhaps it is this aspect that causes something to be classified as a service and it is not at all necessary to elaborate on the other elements? For the purposes of this work, let us assume the definitions mentioned.

But how should one approach the very way in which services are evaluated? Is there a common denominator for the giver and receiver of a service? Is it possible to unify methods for the entire automotive manufacturing sector and the wide portfolio of services provided? Is customer satisfaction for the service giver the same as the customer's assessment of service quality for the service recipient?

To this end, three preliminary research hypotheses are set out, the confirmation of which is intended to justify the appropriateness of further research:

- Hypothesis 1 - It is possible to develop a methodology for the study of service quality levels that takes into account the interests of both stakeholders, i.e. providers and recipients of a service in the automotive industry. The relevance of individual service characteristics will be assessed comparably by service providers and service recipients.
- Hypothesis 2 - Despite the widespread use of external services in the automotive industry and the indication in industry standards of the need to evaluate these services by recipients and customer satisfaction by providers, there is a lack of unification in this area.
- Hypothesis 3 - There are companies in the automotive industry evaluating service providers on the same criteria as material suppliers.

4. RESEARCH FRAMEWORK AND EMPIRICAL EVIDENCE

The research tool was a survey questionnaire, which was divided into 4 parts, the

- the first identified the respondents,
- the second identified the important elements of service providers' assessment management,
- the third explored the importance of individual elements of service provision on the perception of these aspects,
- the fourth is the control part with questions regarding the comprehensibility of the questions and the readability of the questionnaire.

The data obtained came from a pilot study conducted on a group of 48 respondents representing both manufacturing and service companies in the automotive industry.

The results of the pilot study show the following breakdown: 48 representatives of companies took part in the pilot study. The data is shown in Figure 1. The largest proportion of respondents were representatives of manufacturing companies located at level 1 of the supply chain, i.e. supplying their products directly to the vehicle manufacturer. They accounted for almost half of the respondents - 23 out of 48. This group

is interesting in that it participates actively in the supply chain both as a provider and a recipient of products, and therefore both assess sub-suppliers and are assessed in terms of quality by vehicle manufacturers.

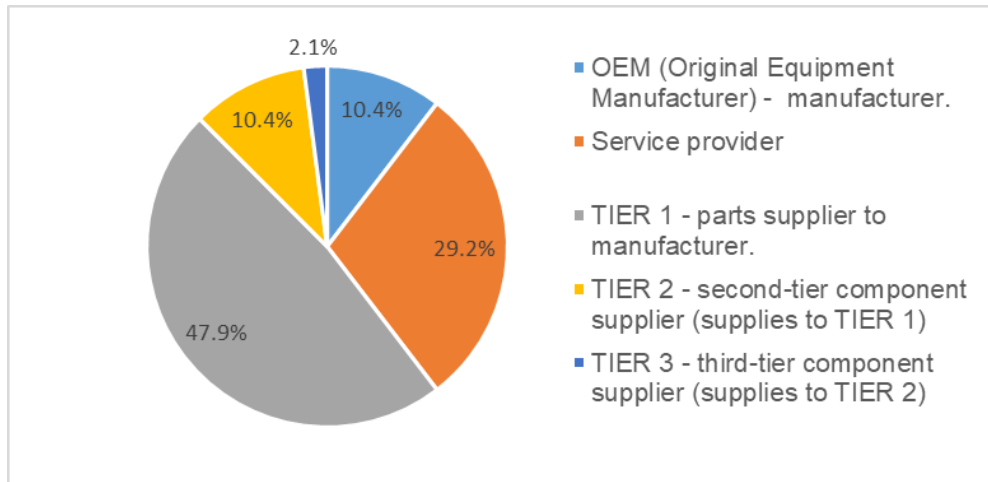


Fig. 1. Structure of respondents by the position in the supply chain

Characteristics of the respondents in terms of length of work in the manufacturing industry are presented in Figure 2. The highest proportion of those active for more than 10 years - 65% which represents a group of 31 respondents. At the same time, it was noted that the longer people have been active in the industry, the higher their participation in the survey.

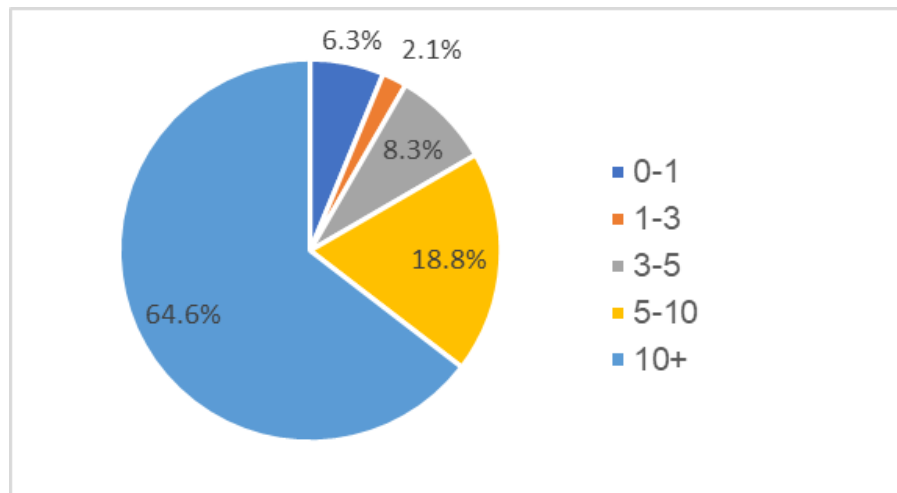


Fig. 2. Structure of respondents by working years in the industry.

Considering the structure of the survey sample about the positions held, 39.6% of the respondents, i.e. 19 persons each, hold local or hybrid positions, i.e. are responsible for local operations as well as a corporate function. 20.8%, i.e. 10 people, hold only a corporate position, i.e. in the structure of the whole corporation, breakdown is illustrated in Figure 3.

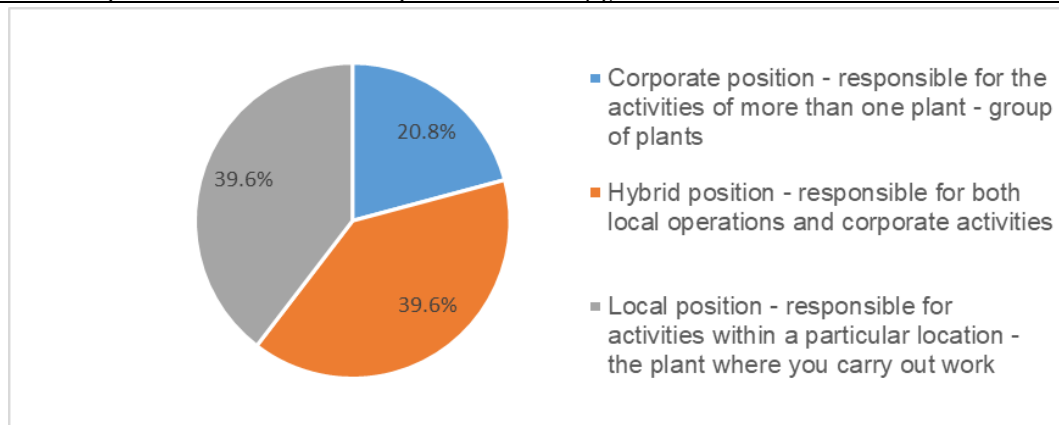


Fig. 3. Structure of respondents by type of working position

Some of the questions in the questionnaire were, by their nature, addressed only to those respondents who represent the manufacturing industry. One of them was the one concerning the influence of respondents on the selection process of service providers. An overwhelming majority of 28 out of a group of 34 employees who are employees of manufacturing companies in the automotive industry indicated that they influence the selection of service providers, which is 82%.

The survey also clearly identifies that manufacturing companies use external service providers, as 100% of respondents answered that such services are used in the company. In response to the question on the form of evaluation of service providers, respondents indicated 47% (16 responses) that they use proprietary solutions of the companies, 44% they use standard solutions (15 responses) and only 9% (3 responses) they use external sources.

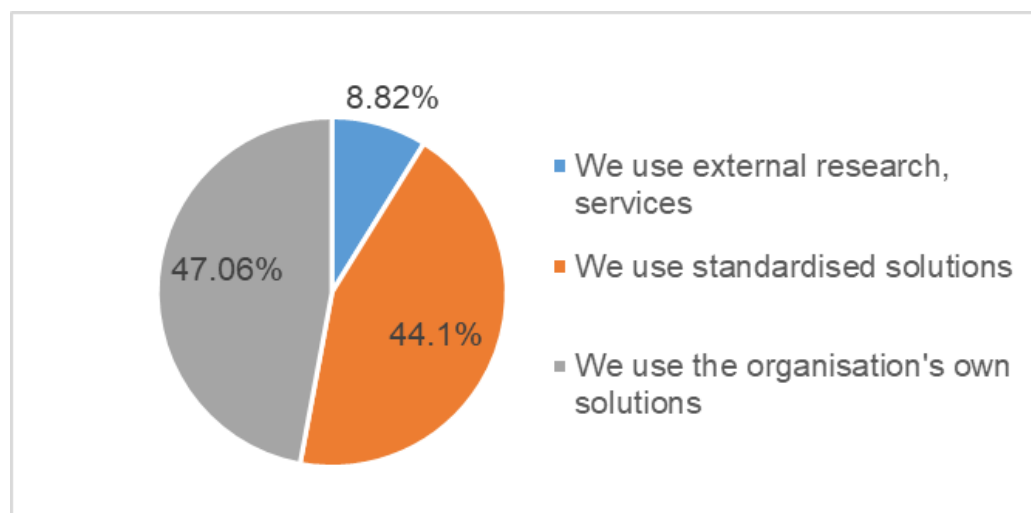


Fig. 4. Breakdown of the assessment way in the respondents' companies

Moreover, 73.5% representing 25 respondents of those surveyed, stated that their company uses a different way of evaluating service providers and parts suppliers.

The results of the pilot study are presented below in Table 1, highlighting initial findings regarding the evaluation of service quality in the automotive industry. However, the surveyed sample is insufficient to draw definitive conclusions due to its limited and unrepresentative nature. Despite this limitation, we can identify basic trends in the

assessment of various aspects of service quality, which provide valuable insights into the priorities and perceptions of respondents. Furthermore, the predominant presence of higher ratings (scores of 4 and 5 on the scale) across multiple evaluation criteria emerges as a notable pattern. This trend suggests that service quality holds significant importance and is recognized as a critical factor influencing operations and competitiveness within the automotive sector. These observations underscore the necessity for further, more extensive research to confirm and expand upon the preliminary findings (Ulewicz et al. 2023).

In the last section of the survey haven't found problems with the questionnaire being comprehensible or readable.

Table 1

Assessment of the importance of service elements (Frequency of Indications).

Element	1	2	3	4	5
Response speed to requests	0	1	3	15	29
Ability to start work according to the agreed deadline	0	0	4	9	35
Service delivery efficiency	0	1	4	10	33
Professionalism	0	1	7	6	34
Efficiency and accuracy in service delivery	0	1	6	5	36
Customer support as expected	1	1	4	14	28
Interest in customer needs	1	2	4	17	24
Standardization in the customer service process	0	3	10	16	19
Ability to adapt to customer requirements	0	1	5	14	28
Perform tasks according to specifications	1	1	2	9	35
Honesty and transparency in reporting	0	2	3	6	37
Knowledge content made available to customers	1	4	7	18	18
Supplier's website	3	11	15	14	5
The way of communication, friendly atmosphere	0	0	10	18	20
Ease of finding the right supplier in the market	0	2	8	15	23
Suitable tools and equipment	0	1	7	11	29
Physical attributes: headquarters, offices, cars, stationery.	6	10	13	11	8
Innovation level	2	1	9	22	14
Follow the guidelines of ethical and social norms	0	0	5	14	29
Meet sustainability requirements	2	0	11	19	16
Price satisfactory in relation to expectations	0	1	3	16	28
Appropriate payment terms (deadline, method of invoicing)	0	1	12	21	14
Financial flexibility, negotiability, financial evaluation of the company	0	0	9	21	18
Appropriate scale of size of the supplier's business and alignment of the supplier's structures with those of the customer's company	1	0	16	18	13
Understanding and willingness to perceive customer guidelines	0	1	1	19	27

5. CONCLUSION

The pilot data obtained in the survey does not allow us to conclusively confirm any of the hypotheses due to their insufficient quantity. At the same time, the usability of the questionnaire was tested through control questions, which did not reveal problems with readability and comprehension of the questions.

The partial data obtained, characterized by a certain consistency between providers and recipients of the service, make it possible to continue considering H1 concerning the possibility of creating a common model for assessing the level of service quality for both parties. A preliminary distinction has been made between individual factors identified as being more or less important for the assessment of service receipt, which gives hope for the creation of a model once more data has been collected.

The predominance of responses about using suppliers' own solutions for assessing quality levels indicates the possible truth of H2 about the lack of unification in this area. This indicates the possibility of further research in this area to confirm this hypothesis.

On the other hand, the vast majority of respondents indicating that they take a different approach to evaluating service suppliers from material suppliers makes it tentative to believe that H3 will not be confirmed. However, research should be conducted on a more representative group of respondents to be more certain on this issue.

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