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## SIGNIFICANCE OF QUALITY SYSTEM IMPLEMENTATION AND CERTIFICATION FOR CROATIAN COMPANIES' BUSINESS IN VARIOUS ECONOMIC ACTIVITIES

**Abstract:** *Within the context of growing globalisation and turbulence on the global and local markets only companies, that successfully and timely manage to adapt to constant environmental changes and to accept imperative business paradigms, seem to be capable of compete with rival companies. That way, they maintain and/or strengthen their market position. Aspiration for enhancing business and competitiveness is frequently a crucial reason for quality system implementation and certification according to the requirements of the international standard ISO 9001, which significance has been investigated for the purpose of the paper, in the context of achieved effects for business performance of sampled Croatian companies in various economic activities. The survey results clearly indicate positive impact, which might present a proper basis for accepting the studied business concept in non-certified companies. Basically, the surveyed certified companies consider it as an unquestionable recommendation for competing with new market challenges.*

**Keywords:** *quality system; ISO 9001 standard; implementation; certification; Croatian companies*

**JEL:** M10; M21

### 1. Introduction

In today's era, where the economic situation changes daily and market environment factors demand quick responses to new situations, a strategic question arises about which paradigm companies should adopt for the long-term sustainability and prospectiveness of their operations. According to Drljača (2017), quality as a strategy in all companies and economic sectors can significantly contribute to the development of their market competitiveness.

Given that the Republic of Croatia is an open market and significantly exposed to increasingly fierce competition on both regional and global markets, a strategic focus on quality must gain even more importance in the operations of its companies, especially those that largely conduct business with foreign partners. Therefore, demonstrating their commitment to quality through the implementation and certification of a quality system represents an important tool for Croatian companies to enhance their competitiveness and, consequently, further business cooperation.

Lazibat (2009) explains that it is necessary to achieve a superior position in the market relative to competition in order to gain a competitive

advantage, which will reflect in above-average business performance over the long term. To achieve such successful business results, companies face the inevitable challenge of finding an optimal strategy, and they often choose quality as the key guideline for their long-term sustainable operations. Drljača (2017) believes that companies that decide on a differentiation strategy based on quality must ensure that their products differ from those of competitors in the eyes of customers, as customers are the drivers of their business, and quality is the key that gives customers confidence for further cooperation.

A company's focus on quality as a strategy and the identified customer (user) requirements can be confirmed by implementing a quality management system according to the requirements of the international standard ISO 9001 (ISO accelerator, 2018). As emphasized in the mentioned ISO standard, the quality management system is part of the business strategy, whose goals include enhancing market competitiveness, creating added value for the benefit of the business, continuous improvement and business growth, maximizing revenue and profit while achieving customer satisfaction and the satisfaction of other stakeholders. Successful implementation of the quality system can

be confirmed through the certification process, demonstrating compliance with the requirements defined in the ISO 9001 quality management standard. An ISO 9001 certified quality management system brings many benefits to business organizations of any size or industry (Russell, 2025).

This paper aims to provide a theoretical overview of the importance of applying the quality concept through the implementation and certification of a quality management system according to the requirements of the ISO 9001 standard, as well as through empirical research on a sample of Croatian companies. It seeks to draw conclusions about the reasons, advantages, and disadvantages of the implemented quality system and its consequential effects on their business operations.

## 2. Theoretical background

Companies that have implemented and certified a quality management system will find it easier to survive in the competitive environment of today's turbulent market. Such companies strive to continuously improve their business processes to ensure optimal cost levels while simultaneously increasing profits (Sickinger-Nagorni and Schwanke, 2016). Additionally, their operations will align with the regulatory framework of the market, opening access to new markets where certain sectors and partners emphasize that certification is a prerequisite for doing business (ISO accelerator, 2018).

Buntak and colleagues (2021) highlight there are several external and internal factors influencing a company's decision to implement a quality system according to the ISO 9001 international standard. Among the external factors, user requirements and regulatory environments are considered more significant, as well as ensuring a form of trust in potential business partners and strengthening negotiating positions (Krakar, 2007). The author recognizes several internal reasons, primarily emphasizing greater customer and employee satisfaction, increased efficiency, improvement of the existing work organization, and increased product quality. In addition, Heras-Saizarbitoria et al. (2006) identify internal factors such as potential error reduction and market share growth.

The implementation of a quality management system evaluates the business environment and defines the expectations of all stakeholders, enabling clear goal setting and the identification

of new business opportunities. Furthermore, it places the customer at the center and emphasizes the need to consistently meet customer requirements while exceeding their expectations, which leads to acquiring new customers and increasing business volume (ISO accelerator, 2018). Namely, the importance of customer satisfaction as a primary external stakeholder is understood as essential for the development of a quality management system within a company. Explaining quality management as a concept, Buble (2006) also emphasizes the significance of customer satisfaction, highlighting it as a specific management concept oriented toward continuous business improvement and increasing customer satisfaction. Finally, it is important to note that the concept of quality management encompasses all business processes and is based on the assumption that quality is a necessary factor for business efficiency.

One of the paradigms for widely adopted quality management systems in Europe is the international standard ISO 9001, issued by the International Organization for Standardization (ISO). By implementing this system according to the requirements of the standard, a company commits to achieving publicly declared quality standards in its processes (Manders et al., 2016). Thus, starting from the ISO 9001 standard introduced in 1987 to the present day, a system of values has been developed.

The process of standardizing business systems is defined by the Croatian Standards Institute (HZN, 2025) as an activity of establishing provisions for general and repeated use that relate to existing or potential problems in order to achieve the highest level of organization in a given context. Standardization can also be defined as a process that reduces variations to a uniform size and/or strength, uniform composition, and recognition as a standard or regulation (Lazibat and Baković, 2020).

The International Standard ISO 9001 (ISO, 2019) specifies requirements for a quality management system applicable to organizations of all sizes, types, and industries. Even small enterprises with only one employee can be certified under this standard (Robitaille, 2010). However, despite its universal applicability and equal relevance to all businesses, Buntak et al. (2021) emphasize that there are differences in the approaches organizations use to implement the quality system according to ISO 9001 requirements, as well as in the benefits derived from its implementation.



Furthermore, every few years, the ISO organization revises and updates its standards during the review process, thereby requiring companies to align their operations with the updated requirements of the ISO 9001 standard to maintain an adequate level of quality (Medić et al., 2016). Thus, the ISO 9001 standard has undergone four editions since its initial version in 1987, with revisions in 1994, 2000, and 2008, culminating in the release of the latest edition, ISO 9001:2015, at the end of 2015. This most recent version introduced numerous changes compared to the previous revision from 2008 (Abuhav, 2017).

The first of the mentioned revisions was conducted in 1994, shifting the focus from final product inspection to ensuring quality through controls at every stage of the creation process, employing preventive actions—essentially transitioning from a reactive approach to a preventive one<sup>1</sup>. In 2000, the ISO organization significantly revised the ISO 9001 standard by simplifying quality management system processes and documentation while radically changing its concept. This revision emphasized process management across eight thematic areas: scope, references to other standards, terms and definitions, quality management systems, management responsibility, resource management, product realization, and measurement, analysis, and improvement<sup>2</sup>.

The main advantages of the ISO 9001:2000 standard are recognized in the following:

- applicability to all product categories, sectors, and organization sizes,
- ease of use, linguistic transparency, and facilitated translatability and comprehensibility,
- significant reduction in the required documentation,
- integration of the quality management system with identified organizational processes,
- support for improved organizational performance,
- greater focus on continuous improvement and customer satisfaction,
- compatibility with other management systems (e.g., ISO 14000),
- providing a foundation for consistency in meeting the interests of organizations in specific sectors,

- the complementary concept of ISO 9001 for implementation requirements and ISO 9004 for quality management system improvement guidelines,
- consideration of the needs and benefits for all stakeholders<sup>3</sup>.

Over time, the ISO organization recognized the necessity for further improvement of the standard and revised it in 2008. However, most of the text remained unchanged. The revision of ISO 9001 included minor changes, primarily additional clarifications to existing requirements without introducing new ones. These changes aimed to address certain misconceptions about ISO 9001 in general (Šuman et al., 2013) and highlight the internal and external benefits of applying the standard (Britvić, 2011). In 2015, a more significant and final revision to date was introduced (Bogović, 2022). This revision brought substantial changes to the structure of the standard compared to the 2008 version, reorganizing it into ten chapters. The requirements became more interconnected and focused on customer satisfaction and the interests of other stakeholders. Additionally, requirements regarding quality manuals, management representatives, and preventive actions were removed. New requirements were introduced, such as defining the organization's context (Chapter 4) and risk management (Chapter 6.1), aiming to reduce business risks for organizations<sup>4</sup>.

In 2023, ISO officially launched the revision of the ISO 9001:2015 standard, and the new version is expected by the end of 2025 or the beginning of 2026 (Sato, 2025). The key topics of the upcoming revision include sustainability, resilience, risk management, change management, digitalization, ethics, and stronger integration with business processes.

The implementation of a quality management system based on the principles outlined in the ISO 9001 standard is often accompanied by certification in accordance with the requirements for establishing and maintaining the system defined by this ISO standard (Vukičević, 2021).

Day by day, more and more companies possess the ISO 9001:2015 certificate. The International Organization for Standardization (ISO) released

<sup>1</sup> ISO accelerator (2018). <https://www.iso-accelerator.co.uk/news/post/iso-9001-history> (30.11.2023.)

<sup>2</sup> Svijet kvalitete. Revizije ISO 9001. <https://www.svijet-kvalitete.com/index.php/najcitanije/635-izdanja-norme-iso-9001> (30.11.2023.)

<sup>3</sup> Simply Quality. Changes Made in the 2000 Version of ISO 9001. [http://www.simplyquality.org/changes\\_made\\_in\\_the\\_2000\\_version.htm](http://www.simplyquality.org/changes_made_in_the_2000_version.htm) (30.11.2023.)

<sup>4</sup> Advisera. <https://advisera.com/9001academy/knowledgebase/infographic-iso-90012015-vs-2008-revision-what-has-changed> (01.12.2023.)

the latest official global list of certified companies for 2022, categorized by country of headquarters and economic activity or sector for which they obtained the ISO certificate<sup>5</sup>. According to the list, in 2022, a total of 1,265,216 companies worldwide held valid ISO 9001 certificates. In Croatia, there were 2,879 valid ISO 9001:2015 certificates that year. All those companies certainly realize the benefits of attaining an ISO 9001 certification, which Russell (2025) listed as follows:

- Better products and services,
- Retaining actual customers,
- Winning new businesses,
- Spending less time to complete tenders,
- Differentiation from competitors,
- Increase in operational efficiency,
- Boosting profits,
- Tightening risk management,
- Improving decision-making,
- Demonstration of regulatory compliance,
- Engaging employees,
- Supporting continual improvements,
- Preparing for the future.

Previously, Sesar (2021) reached the conclusion, based on the results of her study conducted on the sample of 114 Croatian organisations, that the link between continuous improvement and business performance is significant. Therefore, it is an undeniable need for empirical research conducted for the purposes of this paper on a more significant sample of Croatian companies that have adopted the concept of quality management, implemented it into their operations, and demonstrated its application by obtaining the appropriate certificate.

### 3. Research methodology

Following the previously researched secondary data sources, a lack of recent information was observed regarding the importance of implementing and certifying quality management systems for the operations of Croatian companies across various economic activities, in the context of recognized advantages and disadvantages as well as the effects of the implemented system. After identifying the problem and the subject of

research, the research objectives were defined to determine (1) the reasons for implementing and certifying quality management systems in Croatian companies, (2) the recognized advantages and disadvantages of implementing the system, and (3) the effects of the implemented and certified quality management system on the operations of Croatian companies. Based on these objectives, four research assumptions, or hypotheses, were defined as follows:

H1: The key reasons for implementing and certifying a quality management system in Croatian companies are to increase competitiveness and expand the market.

H2: The most significant advantages of implementing a quality system in certified Croatian companies are improved and consistent product quality, a stronger market position, and increased competitiveness of the companies.

H3: The most significant drawbacks of implementing a quality system in certified Croatian companies are excessive controls and fear of change.

H4: The greatest effects of implementing and certifying a quality management system for Croatian businesses are market expansion, increased sales revenue, and an increase in the number of customers for the company.

In line with the defined research hypotheses, the preparation of the study and field collection of primary data were undertaken. For the processing, analysis, and interpretation of the data, an appropriate combination of methods was employed, including classification, description, synthesis, and analysis, as well as comparison of data of varying sizes, i.e., variables.

An empirical study was conducted from October 2022 to January 2023, during which a personal survey and/or an email survey were carried out. The survey instrument, or questionnaire, was distributed to Croatian companies that have implemented and certified a quality management system according to the requirements of the international standard ISO 9001:2015. Out of an initial sample of 600 companies, a significant 39% or 233 Croatian companies responded to the survey, representing the final sample of the study. The surveyed companies belong to various activities, including trade, construction, manufacturing, accounting and finance, IT, transport and communication, tourism and hospitality, as well as agriculture and forestry.

After affirmatively responding to the screening question about whether the company they work for possesses a valid ISO 9001:2015 certificate,

<sup>5</sup> International Organization for Standardization (ISO): Taking Part. <https://www.iso.org/committee/54998.html?t=KomURwikWDLiuB1P1c7SjLMLEAgXOA7emZHKGWyn8f3KQUTU3m287NxnPA3Dluxm&view=documents#section-isodocuments-top>. (01.12.2023.)



the respondents continued to answer three general questions about the respondent's function, the company's headquarters, and its activities. The survey questionnaire was completed by representatives of certified companies who hold the position of quality manager, totaling 156 or 67%, or heads of the organizational unit for quality in their company, which accounts for the remaining 33%. This was followed by a series of specific questions about the implemented and certified quality system in the company where the respondents are employed.

Companies from the selected sample are headquartered in various regions of the Republic of Croatia, as shown in Table 1.

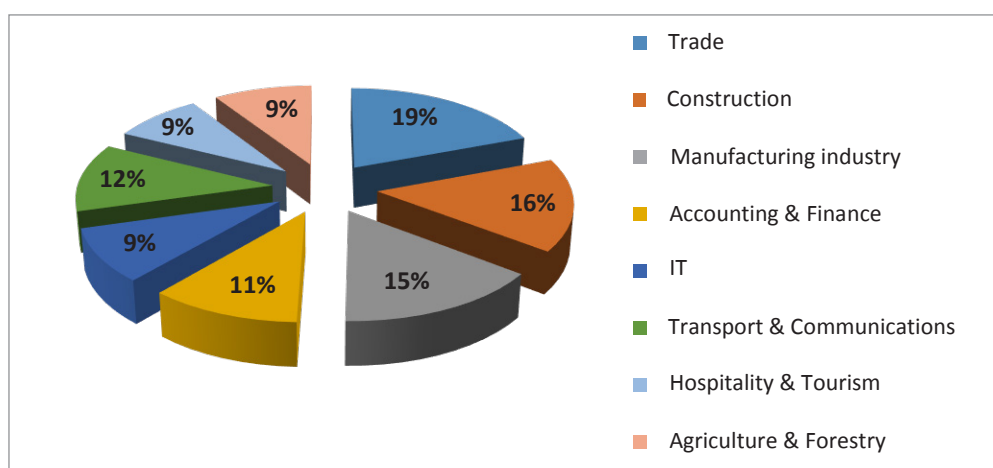
As shown in Table 1, the largest number of surveyed companies, 39%, are headquartered in Zagreb and Zagreb County, which was expected given the higher concentration of population and businesses in this region. Of the total 233 surveyed companies, 18% are based in Slavonia, 14% in Dalmatia, and 10% or 23 companies in the northern Croatia region. The survey included 8% of companies headquartered in central Croatia, slightly fewer in Istria at 7% or 16 companies, while the lowest response rate came from companies based in Primorje, with only 4% or 9 companies.

Thus, the survey was conducted on a sample of 233 certified companies from various economic activities, as shown in Chart 1.

Table 1. Structure of surveyed companies by regions of Croatia

Region	Structure	
	frequency	percentage/ sample share (%)
Zagreb (Zagreb City, Zagreb County)	91	39
Northern Croatia (counties: Krapinsko-zagorska, Varaždinska, Međimurska, Koprivničko-križevačka, Bjelovarsko-bilogorska, Virovitičko-podravska)	23	10
Slavonia (counties: Osječko-baranjska, Brodsko-posavska, Vukovarsko-srijemska i Požeško-slavonska)	42	18
Central Croatia (counties: Ličko-senjska, Karlovačka i Sisačko-moslavačka)	19	8
Istria (Istarska županija)	16	7
Primorje (Primorsko-goranska županija)	9	4
Dalmatia (Zadarska, Šibensko-kninska, Splitsko-dalmatinska, Dubrovačko-neretvanska)	33	14
<b>Total</b>	<b>233</b>	<b>100</b>

Source: Author



Source: Author

Chart 1. Structure of surveyed companies by economic activities

As can be seen in Chart 1, the largest number of surveyed companies are involved in trade, making up 19% or 44 companies, followed by construction with 16% or 37 companies, and 15% or 35 companies from the manufacturing industry. In the field of transport and communication, 12% or 28 surveyed companies are active, while 26 companies, or 11%, are engaged in accounting and finance. The smallest number of companies that participated in the survey, 21 or 9%, was recorded in three activities: IT, agriculture and forestry, as well as hospitality and tourism. This distribution of certified companies by activity did not deviate significantly from the expected sizes or shares in the overall sample of the study.

#### 4. Research results

After the affirmative elimination question and three general questions, respondents answered specific questions related to the quality management system in the company where they are employed. First, it was necessary to determine when the quality system was initially certified according to ISO 9001 and what were the main reasons for its implementation and certification in the company. All 233 surveyed companies have held the ISO 9001:2015 certificate for five or more years, and their reasons are shown in Table 2.

Since this survey question was of a closed type with the possibility of multiple choices, the

respondents' answers are presented in absolute values. The most common reason for implementing and certifying a quality system is the *increase in competitiveness*, chosen by as many as 79% or 185 surveyed companies. However, a significant number of respondents, 137 or 59%, also selected *ensuring the quality of work* as an important internal reason. *Market expansion* is a reason for implementing and certifying the system in 44% or 102 surveyed companies, while a *better image* was the reason for 49 surveyed companies, which is 21% of the sample. The least significant reason for implementing and certifying the system, cited by 20% or 47 respondents, is *lower operational costs*. Given that all the mentioned reasons, to a greater or lesser extent, ultimately increase the competitiveness of companies, it was expected that respondents would cite competitiveness as the key reason for implementing and certifying a quality system. However, the initial expectations about the significance of the marketing or promotional reason for creating a better image proved unjustified, as only one-fifth of the surveyed companies implemented and certified a quality system for this reason.

Following the previous question about the reasons for implementing a quality management system, the next question relates to the respondents' opinions on the subsequent market expansion after certification of the quality system according to the requirements of the ISO 9001 standard.

Table 2. Reasons for the implementation and certification of the quality management system according to the ISO 9001 standard in surveyed companies

economic activity	frequency of surveyed companies	better image	increase in competitiveness	lower operational costs	market expansion	ensuring the quality of work
Accounting and Finance	26	1	23	9	10	19
Trade	44	8	31	4	18	16
Transport and Communications	28	3	22	8	17	14
Hospitality and Tourism	21	12	16	4	8	6
Construction	37	6	27	7	21	23
IT	21	7	19	5	5	13
Manufacturing Industry	35	11	29	6	7	28
Agriculture and Forestry	21	1	18	4	16	18
<b>Total</b>	<b>233</b>	<b>49</b>	<b>185</b>	<b>47</b>	<b>102</b>	<b>137</b>

Source: Author

Table 3. Market expansion after implementation and certification of quality system in surveyed companies

economic activity	frequency of surveyed companies	foreign market has expanded significantly	Croatian market has expanded significantly	market did not expend	not sure
Accounting and Finance	26 (11%)	0	8	14	4
Trade	44 (19%)	6	26	6	6
Transport and Communications	28 (12%)	7	11	6	4
Hospitality and Tourism	21 (9%)	2	9	6	4
Construction	37 (16%)	10	19	6	2
IT	21 (9%)	0	15	6	0
Manufacturing Industry	35 (15%)	3	17	15	0
Agriculture and Forestry	21 (9%)	0	9	2	10
<b>Total</b>	<b>233 (100%)</b>	<b>28 (12%)</b>	<b>114 (49%)</b>	<b>61 (26%)</b>	<b>30 (13%)</b>

Source: Author

Table 3 provides insight into the market expansion of the surveyed companies after the implementation and certification of the quality system according to the requirements of the ISO 9001 standard. Market expansion was recorded in 61% of the surveyed companies, with 12% referring to market expansion mainly abroad, and a significantly higher 49% indicating expansion of the Croatian market. For 61 surveyed companies, which is 26%, the market did not expand, and 13%

of respondents, which is 30, did not have the necessary information to answer the question. In the context of economic activity, the largest market expansion was recorded in trade, construction, and IT, with more than 70% in each of these activities.

After it was established that the implementation and certification of a quality system according to the requirements of the ISO 9001 standard gener-

Table 4. Sales revenues after implementation and certification of quality system in surveyed companies

economic activity	frequency of surveyed companies	revenues have increased significantly	revenues have mostly increased	revenues remained unchanged	revenues have decreased
Accounting and Finance	26 (11%)	2	8	12	4
Trade	44 (19%)	8	20	11	5
Transport and Communications	28 (12%)	0	10	12	6
Hospitality and Tourism	21 (9%)	2	6	9	4
Construction	37 (16%)	9	12	12	4
IT	21 (9%)	0	4	14	3
Manufacturing Industry	35 (15%)	10	11	10	4
Agriculture and Forestry	21 (9%)	6	4	8	3
<b>Total</b>	<b>233 (100%)</b>	<b>37 (16%)</b>	<b>75 (32%)</b>	<b>88 (38%)</b>	<b>33 (14%)</b>

Source: Author

Table 5. Number of customers after implementation and certification of quality system in surveyed companies

economic activity	frequency of surveyed companies	number of customers increased significantly	number of customers mostly increased	number of customers remained unchanged	not sure
Accounting and Finance	26 (11%)	0	8	18	0
Trade	44 (19%)	6	14	20	4
Transport and Communications	28 (12%)	4	12	12	0
Hospitality and Tourism	21 (9%)	4	4	11	2
Construction	37 (16%)	8	12	13	4
IT	21 (9%)	4	6	11	0
Manufacturing Industry	35 (15%)	12	2	17	4
Agriculture and Forestry	21 (9%)	6	0	15	0
<b>Total</b>	<b>233 (100%)</b>	<b>44 (19%)</b>	<b>58 (25%)</b>	<b>117 (50%)</b>	<b>14 (6%)</b>

Source: Author

ally result in market expansion, the related question arises about the increase in sales revenue in the surveyed companies.

Table 4 shows that sales revenues increased in 48% or 112 of the surveyed companies. A significant increase in revenue was recorded by 37 companies, or 16% of the total surveyed. In 88 companies, which account for 38%, revenues remained largely unchanged. However, in 14% of the companies, or 33, revenues decreased after the implementation and certification of the quality management system according to the ISO 9001 standard. Nevertheless, it should be noted that the increase or decrease in sales revenue may potentially be the result of the influence of other factors, such as changes in the sales price of a particular company's products or those of its competitors. Regarding activities, the manufacturing industry, trade, and construction stand out as sectors where sales revenues increased the most according to the survey results.

The next survey question related to the increase in the number of customers at the surveyed companies after the implementation and certification of the quality system.

Principally, according to the data in Table 5, in half of the surveyed companies, the number of customers did not change after the implementation and certification of the quality system. In most of the remaining companies, it increased

significantly or mostly, especially in construction and transport and communications. Fourteen respondents did not have accurate information about any potential change in the number of customers in the company they were employed by.

Besides the quantitative aspect, it was interesting to explore the qualitative indicator regarding customers, specifically their satisfaction. When asked whether customer satisfaction is monitored in the company after the implementation and certification of the quality management system, the response was generally as expected, given that this parameter is one of the requirements of the ISO 9001 standard. Thus, not all companies monitor customer satisfaction, but a large majority of surveyed companies (83%) measure customer satisfaction, with 23% of them conducting regular surveys on customer satisfaction. However, this percentage should have been significantly higher considering that regular measurement of user or customer satisfaction is a requirement of the standard.

When it comes to customer satisfaction among surveyed companies, nearly half, or 47% of respondents, report measured customer satisfaction for their companies. In only 2% of the surveyed companies are customers dissatisfied, while 17% cannot assess the level of customer satisfaction because they do not conduct appropriate measurements. 34% of respondents say that customer satisfaction is at the same level as





before the implementation of the quality system. The most common reasons for customer satisfaction are cited as quick delivery, a reduced number of complaints, prompt customer information, and the quality of products delivered.

In addition to customer satisfaction information, the survey also aimed to collect data on employee satisfaction in certified companies, as they represent important stakeholders. Just as measuring customer satisfaction is a requirement, regular assessment of employee satisfaction is also a mandatory requirement for certified companies. However, a smaller portion of respondents, or 21% of the surveyed companies, regularly monitor their employees' satisfaction, while 60% do so only on an occasional basis. It is noteworthy that one-fifth, or 19% of the surveyed companies, do not have results from assessing their employees' satisfaction, which is concerning and suggests irregularities in the quality management system of the certified companies that participated in the survey..

According to available data from 81% or 189 surveyed companies, employees in 60% of the surveyed companies are generally satisfied, and 9% are even extremely satisfied, mainly due to better work organization. Among the observed industries, retail stands out, where the majority of respondents believe that employees are satisfied, as well as the manufacturing industry, where over two-thirds of respondents highlight employee satisfaction. This outcome is expected, given that the system's task is to create clear rules, procedures, regulations, and introduce order into business operations. It is anticipated that employees will be satisfied in such working conditions.

However, 2% of respondents reported data on general dissatisfaction among employees in the company where they work, and the remaining 10% of respondents do not have data on the current level of employee satisfaction in their companies due to a lack of conducted measurements, despite the fact that this assessment of internal stakeholder satisfaction is a mandatory requirement of the ISO 9001 standard, according to which the quality systems in these companies are certified.

The next two multiple-choice survey questions were dedicated to identifying the advantages and disadvantages of implementing and certifying quality management systems in accordance with the requirements of the international ISO 9001 standard. Specifically, the surveyed companies highlighted key advantages, primarily better and more consistent product quality, cited by 64%

of respondents. This was followed by a stronger market position and competitiveness, noted by 49% or 114 respondents, and increased customer satisfaction, observed through measurements in 27% or 63 surveyed companies. Additionally, an increase in profits was identified as a significant advantage in 24% of certified companies in the research sample, along with cost reductions reported by 21%. However, it is important to approach these identified advantages with caution, as this analysis did not consider other potential factors that may have influenced business performance during the period following quality system certification but were not included in the research. The same limitation applies to the identified disadvantages. Regarding the disadvantages of implementing and certifying quality systems, most respondents pointed to excessive controls, with 170 or 73% mentioning this issue. Additionally, fear of change and defining specific responsibilities were cited by as many as 135 or 58% of respondents. Unnecessary costs associated with implementing the quality system were considered a drawback by 41% of surveyed companies, while 12% identified changes in the structure of overall business costs as a disadvantage.

Regarding the final survey question about potentially recommending the implementation of quality management systems to other companies that are not yet certified, a significant number of respondents, 177 or 76%, would certainly recommend the implementation and certification of a quality management system according to the requirements of ISO 9001 standard. Meanwhile, 18% or 42 respondents are unsure about this recommendation. Only 5% of those surveyed would not recommend other companies implement quality systems in their business operations, citing fear of change and questionable necessity of such investments in this uncertain recessionary period as reasons.

## 5. Discussion and research limitations

First and foremost, considering the research results presented in the previous chapter of this work, it is necessary to emphasize that the sampled companies, which have implemented and certified a quality management system according to the requirements of the ISO 9001:2015 standard, are represented to a greater or lesser extent in all the mentioned industries and regions of the Republic of Croatia. This highlights the widespread application and scope of the ISO 9001 standard, as well as the representativeness of the

research sample, which has significantly encompassed most industries and all geographical units, i.e., regions of the Republic of Croatia.

Likewise, it is essential to highlight the reliable information obtained regarding the key reasons why Croatian companies undertake the project of implementing and certifying their management systems according to the ISO 9001 standard. This insight was also confirmed by a 2021 study conducted on a sample of 526 Portuguese companies (Fonseca et al., 2022), which identified increased competitiveness and market expansion as two of the three most common motives for certification under ISO 9001 requirements. Such information holds significant practical importance as a valuable informational basis for managerial decision-making in the operations of Croatian companies.

Furthermore, it is important to note that the sampled companies recognize significant benefits and effects resulting from the implementation and certification of their quality management systems. Based on research conducted by Terzovski and Power (2007) on a sample of 400 certified companies, it was concluded that certification according to the requirements of the ISO 9001 standard can lead to substantial business benefits if implemented as an integral part of a strategy for continuous improvement.

Finally, the research results presented in this work must be viewed in light of the identified research limitations. The study acknowledges that it did not account for other variables that could have influenced the business performance of the surveyed companies after certification. For example, changes in sales revenue, customer numbers, or employee satisfaction might have been affected by factors such as market trends, economic cycles, competitive actions, or internal company changes unrelated to ISO 9001 implementation. This omission limits the ability to attribute observed effects solely to the quality management system. Also, the research was conducted exclusively on Croatian companies that have implemented and certified a quality management system according to the norm ISO 9001:2015. As a result, the findings are specific to the Croatian market and may not be directly applicable to companies operating in other countries or under different economic, cultural, or regulatory conditions. This limitation restricts the generalizability of the results beyond the studied context.

Additionally, not all companies in the sample regularly measured customer or employee satisfaction, even though these are requirements of the ISO 9001 standard. As a result, some findings

regarding satisfaction levels are based on incomplete or infrequent assessments, which may affect the accuracy and reliability of these results.

However, the study identifies the need for comparative research in other markets or countries to validate and extend the findings. Such research could help determine whether the observed effects and limitations are unique to Croatia or consistent across different context.

## 6. Conclusion

Ultimately, after conducting the research, processing and analyzing the data, and interpreting the findings, it is possible to draw certain conclusions and either confirm or reject the initial hypotheses of the study presented in this paper.

The first research hypothesis, H1, regarding the key reasons for the implementation and certification of quality management systems in Croatian companies, is only partially confirmed. Specifically, the research results (see Table 2) indicate that the most common reason is increased competitiveness of the company, as stated by 79% of the surveyed companies. However, as the second key reason, respondents cited ensuring work quality (59%), rather than market expansion, as initially assumed in hypothesis H1. Nevertheless, market expansion, chosen by a significant 44% of respondents as a reason for implementing and certifying quality management systems, was also recognized as one of the key reasons, ranking third in terms of response percentage.

Also, the research identified the main advantages and disadvantages of implementing and certifying quality management systems in companies across various industries, fully confirming hypotheses H2 and H3. Specifically, the main advantages identified include improved and consistent product quality, a stronger market position, and increased company competitiveness, which confirms the second hypothesis. On the other hand, respondents identified excessive controls and fear of change and responsibility as the main disadvantages, thereby confirming the third research hypothesis.

Eventually, based on the feedback from the surveyed companies, information was obtained regarding the significance of implementing and certifying quality management systems for the business operations of Croatian companies across various industries, viewed in the context of achieved effects. Among the most significant effects for Croatian businesses, market expan-



sion—particularly in the domestic market—stands out, followed by increased sales revenue and a growing number of customers for the majority of surveyed companies. This fully confirms hypothesis H4.

Regarding the examination of customer and employee satisfaction, the research results indicate that satisfaction among both stakeholders is achieved to a moderate extent. However, it should be noted that in one-fifth of the surveyed companies, satisfaction is not assessed at all, and in an equal proportion of companies, customer and employee satisfaction is not assessed on a regular basis. Additionally, it can be concluded that the greatest business impacts have been achieved

by certified companies operating in trade, construction, and manufacturing industries among all observed economic sectors.

In conclusion, it can be stated that the implementation and certification of quality management systems according to the requirements of the ISO 9001:2015 standard generally result in positive effects on the operations of Croatian companies across various industries. This underscores the justification for more serious consideration and investment in quality management systems to enhance the competitiveness of Croatian companies in an increasingly challenging market environment.

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