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# The Balanced Scorecard System: The Perspective of International Orientation

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#### **Abstract**

Introducing a balanced scorecard system may assist managers in identifying four dimensions and recognizing cross-functional interactions, which can ultimately lead to better problem solving, decision making, and business growth. Monitoring a company's key performance indicators (KPIs) can improve organizational performance and enhance shareholder value. A survey was prepared and distributed to 60 managers from Croatian businesses to investigate the relationship between business success as assessed by a balanced scorecard system. The questions were based on the balanced goal system, a four-dimensional model for measuring business performance that covers financial performance, knowledge, and employees, processes success, and market performance. It was used to assess managers' perceptions of foreign and domestic businesses. Furthermore, a two-step cluster analysis was conducted. The results indicated that the respondents who are dominantly oriented towards the international markets share identical perspectives on the importance of the company's performance as those in the predominantly domestic markets.

**Keywords:** Balanced scorecard, international orientation, survey, Croatian companies, Bootstrap, Cluster

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#### Introduction

Over the years, the acceptance of the system of balanced scorecard system in companies, as well as how the idea has spread between organizations in diverse national and cultural settings, has been gained significant research attention. Organizations operate rationally, according to rational interpretations of adoption behavior, and adopt concepts like the Balanced Scorecard (BSC) to improve performance measurement techniques or strategic control. Such theories are

appealing to the mind. On the other hand, social accounts explain adoption behavior by emphasizing how companies are impacted by management styles and are anchored in their institutional and social surroundings (Abrahamson, 1996) or social and institutional forces of various kinds (Sturdy, 2004). Measuring and analyzing the effective performance of components, individuals, and entire companies is one of the most challenging and crucial tasks facing businesses today. The following are some of the benefits of a balanced scorecard system: (i) strategy implementation, (ii) open information flow, (iii) operational transparency, and (iv) early warning system. It is also worth noting that the fundamental benefit of a system of balanced objectives is its simplicity and understandability. Businesses can achieve higher organizational performance and operational excellence by adopting a balanced scorecard system. Outperformance along operational performance lines, such as enhanced customer satisfaction, improved quality, improved productivity, reduced variability, reduced lead-time, lower inventory, and greater operating profitability, is central to operational excellence. To achieve this, it is out of paramount importance to investigate the relationship between business success as assessed by a balanced scorecard system. Hence, the research aim is to assess managers' perceptions of foreign and domestic businesses in Croatia with the emphasis on monitoring managers' perspectives on the businesses' key performance indicators (KPIs) measured by financial indicators (profitability, profit, return of investment), market performance indicators (customer satisfaction, market share, quality of products/services), processes success (efficiency of internal processes, product/service innovation, innovation of internal processes) and knowledge and employees (employee competence, application of new technologies, organizational climate).

To investigate the relationship between business success as measured by a balanced scorecard goal, a survey was designed and delivered to 60 managers from Croatian enterprises. The questions were based on the balanced scorecard system, a four-dimensional approach to measuring business performance that considers financial performance, knowledge, workers, process success, and market performance. It was used to determine how managers felt about foreign and domestic enterprises. Furthermore, a two-step cluster analysis was performed. The results revealed that respondents primarily focused on international markets had the same views on the importance of a company's success as those primarily focused on domestic markets.

# History and characteristics of the balanced scorecard system

The main factor and driver of continuous growth and progress of a company in a dynamic market with constant changes is measuring the effects of key processes (Kennerley and Neely, 2003). A wealth of research on the Balanced Scorecard has proven to be a great success in applying this model regardless of the industry to which the companies belong (Ittner et al., 2003; Hoque and James, 2000).

The main founders and people responsible for developing a balanced score system are Robert Kaplan, a professor of accounting at Harvard, and David Norton, founder, and president of Renaissance Solutions. They began their research in 1990 when they conducted a study of a dozen companies (e.g., Hewlett-Packard, General Electric, Shell Canada) to investigate new methods of measuring performance (Nørreklit, 2003). The survey found that 5% of employees understand the strategy of the organization in which they work, 25% of managers have bonuses related to the organization's strategy, 60% of organizations do not link budgets to their strategy, and 85% of top managers spend less than an hour evaluating strategy.

Based on the obtained results, they started building a model that consists of impact measures from 4 perspectives of the organization - clients, internal processes, learning and growth, and financial perspective. To present their research to the public, they published the article "The Balanced Scorecard - Measures that drive Performance" in the prestigious Harvard Business Review (Kaplan and Norton, 1996). Given the great success, in 1996, they wrote the book "The Balanced Scorecard - Translating Strategy into Action" on the same topic (Kaplan and Norton, 1996). Many companies have started introducing a balanced scorecard system, regardless of size and sector, as it has proven to be a simple but effective model for implementing strategy and growth.

The main goal of implementing a balanced scorecard system is to provide top management with a set of key performance indicators that form the basis of business (Olson and Slater, 2002). The motivation for introducing a system of balanced scorecard system in companies is as follows: (i) the emphasis on financial accounting in business performance analysis was no longer sufficient, (ii) ensure full monitoring of key performance indicators in turbulent global markets. By applying a balanced scorecard system, companies are ready to respond to the demands of customers, competition, employees, and management (Jensen, 2001). In other words, by creating a balanced scorecard model it is possible to monitor the results of key performance indicators within four perspectives: financial perspective, customer perspective, internal business process perspective, and employee learning and development (Maltz et al., 2003).

The advantages of introducing a system of balanced scorecard system in companies are multiple (Hoque and James, 2000): 1. development of short-term and long-term business strategy, communication between employees and management at all levels of the company, linking strategic goals with implementation actions, a better understanding of cause-and-effect relationships within the company, consideration of non-financial performance indicators, creating a reward system within the company, greater investment in intellectual capital, a stronger focus on customers, competition and business partners, and increase value for shareholders.

It can be concluded that the most important thing for companies is to ensure a balance between resources, strategy, and its implementation, which leads to the achievement of major business goals (Amaratunga et al., 2001). Also, the incentive to introduce a balanced scorecard system is certainly to improve long-term results, consider non-financial performance indicators and achieve value for shareholders (Srivastava et al., 1998).

## Implementation of a balanced scorecard system

In today's business environment, a balanced scorecard is a strategic management system linked to the company's employee reward system (Malina and Selto, 2001). Companies use it the most to combine and compare financial and non-financial indicators, and they adapt and improve it according to their own needs and way of doing business (Lingle and Schiemann, 1996).

A large body of research confirms the application of balanced score systems in companies in the United States and Europe (Hoque and James, 2000). The results of the survey showed the following: (i) 60% of Fortune 1000 organizations in the US benefit from or are in the process of implementing a balanced scorecard, (ii) 57% of UK organizations claim to have a balanced scorecard, (iii) 56% of organizations that do not use the system of balanced scorecard system are considering its introduction.

Also, it should be noted that most large American and European companies use a balanced scorecard system. At the same time, their introduction in small and medium enterprises is not yet at the same level as in large enterprises (Fernandes et al., 2006).

In addition, there is a discussion about the level within the company at which the system of balanced scorecard system should be implemented. According to the founders, Kaplan and Norton, a system of balanced scorecard system in large companies should be implemented at the business unit level. A balanced scorecard system in small businesses should be introduced at the enterprise level. Research conducted within small Swiss companies has shown that a balanced scorecard system has been introduced at the company level (Speckbacher et al., 2003).

A survey conducted within 17 companies in Finland showed two different ways of applying the balanced scorecard system: (i) through the system of balanced scorecard system, the goals of the organization were defined, and rewarding employees depended on achieving the set goals, (ii) the system of balanced scorecard system was introduced as an information system which for managers is a tool for improving performance (Malmi, 2001).

A survey conducted within 92 Australian companies sought to show whether companies create their scoreboard based on cause-and-effect logic, link it to a reward system, and implement it at the departmental or enterprise-wide level (Bedford et al., 2008). The survey results showed that 46.3% of organizations do not build a system of balanced scorecard system based on cause-and-effect logic, 52% associate a system of balanced scorecard system with a system of rewarding senior managers, 41% link a system of balanced scorecard system with a reward system for all employees. Also, 96% of the surveyed companies stated that the balanced scorecard system is built at the level of the entire organization.

The balanced scorecard system connects performance measures and indicators through four different perspectives: Financial, User, Innovation and Learning, Internal Business Processes.

These four perspectives are observed through four parameters: (i) Goals - What do you need to do to succeed? (ii) Measures - What parameters will be selected and monitored to prove business success?, (iii) Target values - What quantitative values will be used to determine the success of the measurement?, and (iv) Initiatives: What needs to be done to achieve the set goals?. In each perspective, the indicators should align with the realization of the goals arising from the company's strategy.

The system of balanced scorecard system implies three basic functions (Halilović and Šehić, 2008): (i) Measurement function, (ii) Strategic management function, and (iii) Communication function.

There are two types of measures used in the system of balanced objectives: (i) Leading indicators and (ii) Past performance indicators.

The main task of the leading indicators is to predict the impact of past performance measures. These indicators can identify specific activities and processes that provide guidelines for past performance indicators.

Past performance indicators focus on historical results such as market share, sales, employee satisfaction. Indicators of past results are a consequence of previously taken actions.

Choosing a measure that will ensure the credible implementation of the objectives derived from the strategy is very important. Some of the criteria when choosing measures and initiatives are the following: (i) connection with the strategy: find a direct link between each measure and strategy, (ii) quantity: find the measure that most realistically and accurately shows the achievement of the effect, (iii) accessibility: find measures that do not require significant investments, (iv) easy to understand: find a measure that is simple and clear right at the beginning of management and employees, (v) equality: it is necessary to avoid improving one or more measures at the expense of others, (vi) relevance: find measures that will accurately describe the process or goal to be assessed, and (vii) common definition: find measures that are precisely defined and understood by all team members.

# Perspectives of a balanced scorecard system

#### **Financial perspective**

The financial perspective includes indicators related to the company's strategy (Westerfield, 2003). In other words, measuring financial effects will show how the implementation of the strategy contributes to the creation of final results. The goals of the financial perspective should give a positive result, which also affects the results of other perspectives (Osmanagić-Bedenik, 1993). It is also important to monitor and balance finances with other non-financial perspectives. The company's focus on managing relationships with customers, suppliers, partners, product quality, or any other business indicator must be consistent with financial indicators. It must have a positive impact on them (Orsag, 1997).

Financial indicators can be classified into the following groups (Žager and Žager, 1999):

- liquidity indicators: settlement of short-term liabilities of the company
- indebtedness indicators: financing companies from other sources
- activity indicators: use of own resources
- cost-effectiveness indicators: the ratio of income and expenditure of the company
- profitability indicators: return on invested capital of the company
- Investment indicators: company investment in stocks

There are many measures of financial success, and one measure cannot lead to a financial result, but it is important to use several measures simultaneously. The following figure shows the financial measures most commonly used.

The three most commonly used financial performance measures are: (i) business growth, (ii) value creation, and (iii) business profitability. Financial measure Business growth includes the ratio of income and assets, increase in income and assets, income from new products and services, and income per employee. Financial measure Value creation includes: economic value added (EVA), market value added (MVA), share prices, and others.

The financial perspective most often contains indicators that include the income-cost ratio, return on investment (ROI), return on equity (ROE), and economic added value (EVA). Given the industry within which the company operates, it is possible to use indicators such as risk management or measuring intellectual capital. Indicators from the financial perspective are a prerequisite for the selection of other indicators and need to be defined very carefully.

There are several financial indicators, and the following are the most commonly used (Niven, 2007): total assets, the share of profits in assets, return on net assets, gross margin, net income, profit per employee, income from new products, income and income per employee, return on invested equity (ROE), return on invested total capital (ROCE), return on investment (ROI), economic added value (EVA), cash flow, indebtedness indicators, coverage of interest costs, duration of collection of receivables, duration of trade payables, inventory turnover ratio. Liquidity indicators and receivables collection duration indicators are mostly used in small and medium-sized enterprises in Croatia.

Parmenter (2010) lists the following measures to manage the financial perspective successfully: (i) Total assets and total assets per employee, (ii) Return on equity (ROE) and capital employed (ROCE), (iii) Added economic value (EVA) ), (iv) Value added per employee, (v) Gross margin, (vi) Growth rate, (vii) Credit rating, (viii) Debt, (ix) Dividends and share prices.

The main goal of the financial perspective is to increase the value to shareholders, which can be realized in two ways. The first way is to increase revenue. The steps leading to the achievement of the first goal are: entering new markets, offering new

products, and attracting new customers. The second way is higher productivity, which can be achieved by improving the cost structure or using existing assets by reducing the capital needed to support a given level of business (Barković, 1996; Barković, 1998).

It is important to point out that both of these ways of increasing shareholder value must be actively and simultaneously implemented. In this way, it is possible to eliminate the risk that can jeopardize the company's growth.

#### **Market perspective**

Market perspective implies defining strategic goals following the satisfaction of client requirements, all to achieve financial success (Osmanagić Bedenik, 1993). In addition to achieving the goals of the clients' perspective, the goals of the financial perspective will also be achieved.

One of the key success factors of a company is the customers, especially those customers who are loyal to the company. When designing and creating new products/services, customer requirements and wishes must guide companies. Despite cutting-edge technology and product quality, success will be lacking if the needs of key customers are not met. The most important is the value delivered to customers: a new product/service, price, image, and promotion (Osmanagić Bedenik, 1993). A company gains a competitive advantage if it differentiates itself from the competition and succeeds through one of three possible strategies: operational excellence, customer friendliness, or product leadership.

The market perspective focuses exclusively on the customers and their relationship with the company. Customers expect other benefits in addition to quality products/services and reasonable prices. If a company wants to be a market leader, it must define key customers and its role in meeting their needs.

Measuring market performance is extremely important because, in this way, companies can improve their relationship with customers. Companies collect customer satisfaction information: complaints, repeat orders, frequency of new orders, and customer attitude. Customers' attractiveness indicators are customer satisfaction, customer complaints, number of new customers, profitability, lost customers, speed of delivery to order, and the number of delivery delays.

A key factor in any business strategy is the supply of value to the customer by the product/service, the relationship with the customer, and the company's image in public. In this way, companies can differentiate from each other, attract new customers and maintain and deepen the relationship with existing customers. The value proposition is based on choosing one of the following strategies: performance excellence, product leadership, or personal approach to the user. In most cases, companies specialize in one of the three listed strategies while achieving standard performance in the other two areas.

Companies that focus on a performance excellence strategy must be leaders in the following business segments: (i) competitive pricing, (ii) product quality, (iii) fast order

fulfillment, and (iv) on-time delivery. Companies that focus on a personal approach strategy must be leaders in the following business segments: (i) quality customer relationship, (ii) high level of service, and (iii) complete product/service offering. Companies that focus on product leadership strategy must be leaders in the following business segments: (i) functionality, (ii) features, and (iii) overall product/service performance.

Companies need to focus on the dual perception of analyzing their business and customer relationships from the market perspective. The first part refers to clients and how they think about the company, i.e., clients' attitudes towards it. The second part refers to the company and how the company thinks about its clients or how to improve customer relationships.

Here are three ways to add value to customers: operational excellence, product leadership, and a personal approach to customers.

#### Operational excellence

Companies that try to ensure operational excellence are constantly trying to eliminate business inefficiencies, i.e., increase efficiency. The offer of these companies is based on: low price, standard products that are constantly available, and orientation to a larger segment not only to individual customers and meet individual needs. Indicators of operational excellence strategy are as follows: price, supply, convenience, zero error rate, and growth (Niven, 2007).

#### Product leadership

Companies that try to gain a competitive advantage by using a product leadership strategy must constantly provide customers with new and innovative products/services that they cannot compete with. The goal of these companies is to produce products/services that will meet customer requirements.

#### Personal approach to customers

Companies that focus on a personal approach to customers in each business segment try to provide the customer with a complete service to get the maximum benefit from the product/service. A personal approach to customer strategy is as follows: customer knowledge, complete product offering, product number, and long-term relationship management (Niven, 2007). Parmenter (2010) lists the following measures to manage the customer perspective successfully: (i) Customer satisfaction and customer loyalty, (ii) Customer complaints, (iii) Customer retention, (iv) Hours spent with the customer, (v) Brand recognition, (vi) Number of clients, (vii) Customer service costs, (viii) Cost correction costs, (ix) Number of orders per day/month.

Goals for the perspective of clients, i.e., the importance of market success, depending on who the target clients are and what is the added value in meeting the requirements of the target clients. Added value for customers differentiates a company from the competition. It is important to emphasize that there are three categories of added value: (i) operational excellence, (ii) product leadership, and (iii) customer intimacy

(Niven, 2007). Each company will choose one category in which it will be the best, while in the other two, it will be within the standard values.

The first category of added value in meeting customer requirements is operational excellence. Companies focusing on the first category must meet the following criteria: low prices, an excellent choice, elimination of errors, growth in the selected market.

The second category of added value in meeting customer requirements relates to leadership in the product. Companies focused on the second category must meet the following criteria: offering the best product/service on the market, constant work on product/service innovation.

The third added value category in meeting customer requirements is intimacy with customers. Companies that focus on the third category strive to ensure a long-term relationship with customers to meet their needs.

#### **Process perspective**

The company's internal processes include the procurement of resources, product development, and delivery. It is important to plan activities within a particular process to do the job well, on time, and at reasonable costs (Belak, 2002). There are several steps leading to the improvement of internal processes: (i) redesign of activities, (ii) shortening the execution cycle, (iii) introduction of new equipment.

Improving internal processes has a positive effect on the financial gain in the following ways: (i) cost reduction resulting from improved processes and more efficient performance, leading to short-term gains, (ii) revenue growth resulting from a deepened customer relationship will have a positive financial impact in the medium term, and (iii) Innovative internal processes lead to a positive impact on long-term revenues.

Internal activities include quality and efficient procurement, production, and delivery, and it is possible to improve them by introducing modern technology. Internal processes and all other processes are carried out according to the strategic goal of the final result.

The basic indicators of the internal process, which are also used to measure process performance, are the number of new products, inventory turnover, response time to customer orders, the duration of the production process, and the ratio of new products to total products.

When determining the target segment of customers and defining the offer, the company should determine indicators to monitor customer satisfaction to improve customer relationship management. Defining indicators that would monitor key processes and activities to customers is certainly important to measure the company's success.

Each industry has specific processes to create value for customers to achieve the desired financial result (Kaplinsky, 2000).

The value chain from the aspect of internal processes begins with the perceived need of customers, i.e., with their dissatisfaction. To achieve the ultimate goal, i.e., to have satisfied customers, it is necessary to carry out three basic business processes: (i) the innovation process, (ii) the operational process, and (iii) the process of providing customer service after selling the product/service. An innovative approach involves defining the market, i.e., analyzing current and future customer needs to design a new product/service that will meet the perceived market needs. Operational processes include the processes of production and delivery of products/services. The last step in creating value for the customer is to provide after-sales services to the customer. The last step is very important because promoting, presenting, and serving the customer affects the relationship with the customer. Some companies work very hard on the last step and provide customers with educational workshops, service networks, and rewarding loyal customers.

The innovation management process involves new and innovative products/services to customers to differentiate themselves from the competition. When measuring the innovation process, it is necessary to pay attention to the following (Niven, 2007):

- it is necessary to monitor the development of new products, and if the
  development is not going in the desired direction, or if the company will not
  achieve the desired results, it is necessary to abandon the development
- accept the comments of customers who participated in the testing of a new product/service
- continuous innovation of new product/service development resulting from new ideas and ideas of participants.

Some of the indicators of control and analysis of the success of the innovation management process are the number and revenue of new products/services, duration of the innovation process, number of hours and funds spent on research and development, the average age of patents, the ratio of new products to total supply.

Managing business operations consists of the daily activities of the logistics chain that are important for the company's proper functioning: subprocesses of procurement, production, and distribution. It is important that companies actively monitor logistics chain indicators that can enable them to identify inefficient activities, which can ultimately lead to savings (Sarkis, 2012). The choice of indicators within the business operations management process is characteristic of each company concerning the industry in which it operates. It is important to focus on the key processes that add value to the company when choosing indicators.

Customer relationships and management can be analyzed through the following subprocesses (Niven, 2007): 1. selection of target customers, 2. acquiring new

customers, 3. understanding the wishes and needs of customers, 4. customer retention, and 5. deepening customer relationships.

Parmenter (2010) lists the following measures to manage the perspective of internal processes successfully: (i) Average cost per transaction, (ii) Research and development costs, (iii) Ratio of new products to supply, (iv) Shortage of goods, (iv) v)% of errors, (vi) Waste reduction, (vii) Improvements to existing products and new products, (viii) Timely collection, (ix) Continuous improvements. It is important to define an indicator for these sub-processes to achieve the best possible result concerning customers.

Through the perspective of internal processes, a decision is made on how to achieve a certain goal through four basic groups of processes:

- Operational management processes daily activities related to the process of procurement, production, and delivery to improve cooperation with suppliers or increase capacity,
- Client management processes daily actions with improving the quality of customer relationship management to increase their retention and consumption,
- Innovation processes continuous processes for the company to operate successfully in a dynamic and turbulent market and to use all opportunities and opportunities to encourage innovation related to the development and sale of new products or services,
- Regulatory and social processes daily activities related to regulatory bodies, regulations, and the company's environment to increase social responsibility towards society.

#### **Knowledge management perspective**

The perspective of learning and growth, i.e., knowledge management, creates the basis necessary for achieving success in finance, human resources, and internal processes. The goals of the knowledge management perspective lead to excellent results from other perspectives (Osmanagić Bedenik, 1993).

The perspective of knowledge management consists of three categories: human capital, information capital, and organizational capital (Sikavica et al., 2008). The main tasks of the knowledge management perspective are employee training and progress within the organizational culture. Continuous training of employees, learning and acquiring new skills within the organization that encourages their work and rewards it greatly contribute to business success (Vrtiprah and Sladoljev, 2012).

Improving the knowledge and skills of employees, and the reward system, greatly increase employee satisfaction and motivation, which has a positive effect on business operations (Križmarić, 2014). The perspective of learning and growth is a key factor because it defines the key abilities and skills, technology, and corporate culture needed to support the implementation of company strategy.

The goals of the perspective of learning and growth include harmonizing human resources and technology with one's strategy. Each company must determine how to reconcile the requirements of key internal processes and manage employee relationships and careers. Through their progress and learning, the importance of investing in human resources is a company's key resource.

Companies mostly focus on three areas when measuring the balanced scorecard system (Kaplan and Norton, 2001): 1. Employee capacity - measured through employee satisfaction, productivity, formal education, additional training; 2. Information system - provides access to accurate, timely, and quality information; 3. Coherence of individual interests with the company's interests - employees of the company should be familiar with the company's goals to participate in their realization.

From a knowledge management perspective, the success of developing a company's strategic capabilities and intellectual capital is monitored and monitored (Wiig, 1997; Von Krogh et al., 2012).

When selecting indicators to measure employee capabilities, it is important to define the key skills and resources the company needs to implement the strategy, what skills the company currently possesses, what makes a difference, and how big the difference is (Spee and Jarzabkowski, 2011). In addition, it is important to invest in the further development and advancement of employees through lifelong learning programs (Blaschke, 2012).

One of the main factors, and increasingly the most important key to a company's success in today's global economy, is information and communication technologies (Balocco et al., 2012). Accessing timely and quality information with a developed IT infrastructure is a competitive advantage (Lew and Sinkovics, 2013). Companies that do not want to lag behind the competition but must invest in developing and implementing information and communication technologies to be market leaders.

Indicators for measuring the potential of information systems are used when measuring the percentage of employees who have access to the necessary information at a certain time and when assessing the potential of information systems concerning the company's needs.

Employee motivation is largely related to organizational culture, work environment, or job satisfaction (Moon, 2000). Data for the employee satisfaction indicator are collected through employee surveys, and the most common form of survey is intranet or email.

Parmenter (2010) lists the following measures to manage the learning and development perspective successfully: (i) Investment in training, (ii) Working life, (iii)% of employees with diplomas and% of employees to be retrained, (iv) Fluctuation rate employees, (v) Productivity of employees, (vi) Number of years of experience of the manager, (vii) Quality of the working environment, (viii) Achieving personal goals and (ix) Violation of ethics.

Employees are the main driver of the growth and development of any company (Alavi and Leidner, 2001). Regardless of the use of the latest technological advances, the

production of new products or services, companies cannot thrive without motivated and capable employees.

It is also important that companies care about employee satisfaction and reward them according to their commitment and contribution to business development (Coughlan and Schmidt, 1985). Employees ready for teamwork and learning need to ensure further development of skills and abilities through lifelong learning and learning programs, which will positively affect both employees and the company's further development.

Knowledge management uses information technology intensively. The development and progress of applying the balanced scorecard system have led to the need for automation, i.e., certain software programs. The three main reasons for applying for software programs when implementing a balanced scorecard system are data integration, data analysis, and communication within the enterprise.

Software programs used in the application of the system of balanced objectives ensure (i) collection, integration, and display of data, (ii) display of performance indicators in real weather conditions, (iii) display of warnings regarding deviations of individual impact measures from target values.

# **Methodology**

System control is an inevitable process within every company that tries to establish positive and negative activities during a certain period and define areas that need improvement. System control is especially important for companies operating in the international market and having branches outside the home country, as circumstances in international markets are changing rapidly. It is necessary to react quickly in the event of changed circumstances. First of all, it is necessary to determine the steps used to control the system, especially to define at which level it starts, with which department, and whether branches will be involved immediately or later. It is also necessary to work on lifelong learning to ensure adequate employee education.

Employee business success assessed by applying a system of balanced scorecard system should certainly be rewarded so that the employee understands what he did well and how he contributed to further positive business operations in the international market or why he was rewarded. In this way, the employee will be motivated to continue working and achieve even better results in the international market.

The application of the balanced scorecard system in the international market should be periodically upgraded and maintained not to jeopardize its functionality (Madsen and Slåtten, 2013). Upgrading the system of balanced scorecard system is necessary for two situations: (i) a change in the strategic direction of the company and (ii) inadequate performance measures.

The optimal period for upgrading the system of balanced scorecard system in international business is once a year and more often in fast-growing markets. Also,

after implementing the balanced scorecard system, it is necessary to determine the department under whose jurisdiction will be the balanced scorecard system, the parent company, or branch. Within most companies, a system of balanced objectives becomes part of the responsibilities of the finance or controlling departments of the subsidiary, as they are largely responsible for measuring business performance. However, other departments of the company are not excluded.

To examine the relationship between company performance measured by a balanced scorecard system and international orientation, a survey was conducted on a sample of managers of Croatian companies.

Before the data is processed in research models, the initial step is to do a data normality test, especially if the goal is inferential. The normality test aims to assess the distribution of data in the variable utilized in the study. The Kolmogorov Smirnov test generates test statistics used to check for normality, alongside mean and standard deviation values for the observed variables (Table 2). Samples are normalized and compared to a standard normal distribution in the particular situation of testing for normality of the distribution. One can observe that the p-value for all variables is at the 1% level. We, therefore, have significant evidence to reject the null hypothesis that the variable follows a normal distribution. The mean values for the analyzed variables range from 3.517 to 4.200, while the standard deviation ranges from 0.584 to 1.027 for 60 observations (N=60).

Table 1
Kolmogorov Smirnov test

| Troilling or ov Similliov test | N  | Mean  | Std.      | Test      | Asymp. Sig. (2- |
|--------------------------------|----|-------|-----------|-----------|-----------------|
|                                |    |       | Deviation | Statistic | tailed)         |
| F1. Profitability              | 60 | 3,530 | 0,833     | 0,229     | 0,000***        |
| F2. Profit                     | 60 | 3,500 | 0,893     | 0,246     | 0,000***        |
| F3. Return on investment       | 60 | 3,520 | 0,930     | 0,227     | 0,000***        |
| T1. Customer satisfaction      | 60 | 4,200 | 0,684     | 0,282     | 0,000***        |
| T2. Market share               | 60 | 3,880 | 1,027     | 0,212     | 0,000***        |
| T3. Quality of products /      | 60 | 4,200 | 0,755     | 0,239     | 0,000***        |
| services                       |    |       |           |           |                 |
| P1. Efficiency of internal     | 60 | 3,770 | 0,767     | 0,253     | 0,000***        |
| processes                      |    |       |           |           |                 |
| P2. Product / service          | 60 | 4,000 | 0,781     | 0,267     | 0,000***        |
| innovation                     |    |       |           |           |                 |
| P3. Innovation of internal     | 60 | 3,830 | 0,886     | 0,275     | 0,000***        |
| processes                      |    |       |           |           |                 |
| Z1. Employee competence        | 60 | 4,020 | 0,624     | 0,311     | 0,000***        |
| Z2. Application of new         | 60 | 4,020 | 0,854     | 0,276     | 0,000***        |
| technologies                   |    |       |           |           |                 |
| Z3. Organizational climate     | 60 | 4,020 | 0,748     | 0,258     | 0,000***        |

| Financial performance   | 60 | 3,517 | 0,763 | 0,151 | 0,000*** |
|-------------------------|----|-------|-------|-------|----------|
| Market performance      | 60 | 4,094 | 0,664 | 0,140 | 0,000*** |
| Process success         | 60 | 3,867 | 0,650 | 0,152 | 0,000*** |
| Knowledge and employees | 60 | 4,017 | 0,584 | 0,172 | 0,000*** |

## **Results: Relationship of balanced scorecard system in international business**

#### **Descriptive statistics**

Table 2 shows the respondents' answers, managers of board members, to the questions by which they evaluated the performance of all companies together measured by a balanced scorecard system concerning the company's international orientation.

It can be noticed that the respondents from companies that are oriented to the domestic market mostly agree with the T3 particle. Quality of products/services within the dimension Market performance (average score 4.21). Respondents agree the least with the F2 particle. Realized profit from the Financial performance (average score 3.45). Furthermore, it can be observed that the respondents particularly think that the market performance (average score 4.052) is the primary constituent in determining the company's performance, followed by the knowledge and employees (3.9737), processes success (3.8333), and financial performance (3.4737).

Respondents from international market-oriented companies largely agree with the T1 particle. Customer satisfaction, dimension Market performance (average rating 4.27), while the least agree with the particle F3. Return on investment, Financial Performance dimension (average score 3.55). In this context, it can be determined that the respondents share identical perspectives on the importance of the company's performance as the respondents in the predominantly domestic markets. In other words, the questionnaire responses suggest that the market performance (average score 4.0944) is the most important factor in determining a company's performance, followed by the knowledge and employees (4.0909), processes success (3.8667), and financial performance (3.5167).

To extract the average values of business performance indicators, Bootstrap analysis is performed. This analysis can be seen as a statistical process for generating multiple simulated samples from a single dataset. This procedure allows us to compute standard errors, generate confidence intervals, and do hypothesis testing for various sample statistics. Bootstrap techniques can be considered an alternative to standard hypothesis testing that is simple and valid for a wider range of scenarios (Bellec et al., 2010; Kenett et al., 2006). The results indicate a certainty for 95% confidence interval that in the domestic market, the responses in terms of business performance range from 3.2417 to 3.7237 for financial performance, 3.8510 to 4.2643 for market performance, 3.6417 to 4.0450 for processes success, and 3.7949 to 4.1531 for

## Croatian Regional Development Journal | Vol. 3 No. 1 | 2022

knowledge and people. A similar logic can be applied in the international market. The respondent answered in the range of 3.2564 to 3.9110 for financial performance, 3.9091 to 4.4000 for market performance, 3.6528 to 4.1833 for processes success, and 3.8333 to 4.3485 for knowledge and people.

*Table 2*Average values of business performance indicators with Bootstrap analysis.

| Average values of i    | Jusiness pern |           | Bootstrap |            |           |            |
|------------------------|---------------|-----------|-----------|------------|-----------|------------|
|                        |               |           |           |            | 95%       | Confidence |
| Predominant mark       |               |           |           | Interval   | cormacnee |            |
| performance indicators |               | Statistic | Bias      | Std. Error |           | Upper      |
| Predominantly          | F1            | 3.47      | 0.00      | 0.13       | 3.23      | 3.73       |
| domestic market        | F2            | 3.45      | 0.00      | 0.14       | 3.19      | 3.72       |
|                        | F3            | 3.50      | 0.00      | 0.15       | 3.19      | 3.81       |
|                        | T1            | 4.16      | 0.00      | 0.11       | 3.93      | 4.38       |
|                        | T2            | 3.79      | 0.01      | 0.17       | 3.45      | 4.11       |
|                        | T3            | 4.21      | 0.00      | 0.13       | 3.95      | 4.45       |
|                        | P1            | 3.82      | 0.01      | 0.12       | 3.58      | 4.07       |
|                        | P2            | 3.97      | 0.01      | 0.12       | 3.73      | 4.20       |
|                        | P3            | 3.71      | 0.01      | 0.14       | 3.43      | 4.00       |
|                        | Z1            | 4.05      | 0.00      | 0.09       | 3.87      | 4.22       |
|                        | Z2            | 3.97      | 0.00      | 0.13       | 3.72      | 4.26       |
|                        | Z3            | 3.89      | 0.00      | 0.11       | 3.68      | 4.12       |
|                        | Finance       | 3.4737    | 0.0030    | 0.1234     | 3.2417    | 3.7237     |
|                        | Market        | 4.0526    | 0.0037    | 0.1096     | 3.8510    | 4.2643     |
|                        | Processes     | 3.8333    | 0.0072    | 0.1025     | 3.6417    | 4.0450     |
|                        | Knowledge     | 3.9737    | 0.0002    | 0.0907     | 3.7949    | 4.1531     |
| Predominantly          | F1            | 3.64      | -0.01     | 0.18       | 3.27      | 4.00       |
| foreign market         | F2            | 3.59      | 0.00      | 0.19       | 3.21      | 4.00       |
|                        | F3            | 3.55      | -0.01     | 0.20       | 3.16      | 3.92       |
|                        | T1            | 4.27      | 0.00      | 0.13       | 4.04      | 4.52       |
|                        | T2            | 4.05      | -0.01     | 0.19       | 3.65      | 4.40       |
|                        | T3            | 4.18      | 0.00      | 0.14       | 3.92      | 4.47       |
|                        | P1            | 3.68      | 0.00      | 0.16       | 3.35      | 3.96       |
|                        | P2            | 4.05      | 0.01      | 0.17       | 3.73      | 4.38       |
|                        | P3            | 4.05      | 0.01      | 0.17       | 3.70      | 4.36       |
|                        | Z1            | 3.95      | 0.00      | 0.15       | 3.67      | 4.25       |
|                        | Z2            | 4.09      | 0.01      | 0.18       | 3.71      | 4.43       |
|                        | Z3            | 4.23      | -0.01     | 0.17       | 3.89      | 4.55       |
|                        | Finance       | 3.5909    | -0.0047   | 0.1640     | 3.2564    | 3.9110     |
|                        | Market        | 4.1667    | -0.0019   | 0.1220     | 3.9091    | 4.4000     |
|                        | Processes     | 3.9242    | 0.0032    | 0.1365     | 3.6528    | 4.1833     |
|                        | Knowledge     | 4.0909    | -0.0015   | 0.1300     | 3.8333    | 4.3485     |
| Total                  | F1            | 3.53      | 0.00      | 0.10       | 3.33      | 3.73       |
|                        | F2            | 3.50      | 0.00      | 0.11       | 3.28      | 3.73       |
|                        | F3            | 3.52      | 0.00      | 0.12       | 3.28      | 3.75       |
|                        | T1            | 4.20      | 0.00      | 0.08       | 4.03      | 4.37       |
|                        | T2            | 3.88      | 0.00      | 0.13       | 3.63      | 4.12       |

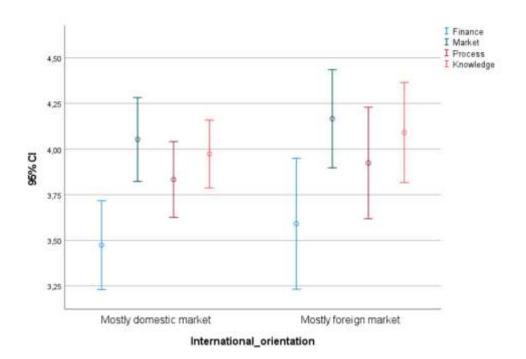
| T3        | 4.20   | 0.00    | 0.09   | 4.02   | 4.38   |
|-----------|--------|---------|--------|--------|--------|
| P1        | 3.77   | 0.00    | 0.10   | 3.58   | 3.97   |
| P2        | 4.00   | 0.01    | 0.10   | 3.80   | 4.18   |
| P3        | 3.83   | 0.01    | 0.11   | 3.62   | 4.03   |
| Z1        | 4.02   | 0.00    | 80.0   | 3.87   | 4.17   |
| Z2        | 4.02   | 0.00    | 0.11   | 3.80   | 4.23   |
| Z3        | 4.02   | 0.00    | 0.10   | 3.83   | 4.23   |
| Finance   | 3.5167 | -0.0007 | 0.0977 | 3.3222 | 3.7110 |
| Market    | 4.0944 | 0.0007  | 0.0809 | 3.9333 | 4.2500 |
| Processes | 3.8667 | 0.0052  | 0.0796 | 3.7111 | 4.0387 |
| Knowledge | 4.0167 | -0.0009 | 0.0746 | 3.8668 | 4.1722 |

Note: Bootstrap results are based on 1000 bootstrap samples

In Figure 1, one can see a comparative display of the average values of company performance evaluations measured by a balanced scorecard system concerning the company's international orientation. Respondents from companies oriented to the domestic market mostly agree with the dimensions of Market performance particles (average score 4.05). Respondents from companies oriented to the international market mostly agree with the particles from the dimensions Market Performance (average score 4.17) and Knowledge and Employees (average score 4.09).

Figure 1

Error-bar plot of the summary performance indicators



#### **Two-step cluster analysis**

Cluster analysis is a type of exploratory analysis that aims to find patterns in data. Cluster analysis is also known as taxonomy analysis or segmentation analysis. It tries to find homogeneous groupings of examples if the grouping has not been determined earlier. It does not distinguish between dependent and independent variables since it is exploratory. SPSS's cluster analysis algorithms may handle data in binary, nominal, ordinal, and scale (interval or ratio) formats. This procedure's method has numerous beneficial characteristics that set it apart from typical clustering techniques (Brawijaya Professional Statistical Analysis, 2011):

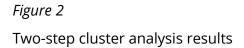
- The capacity to group data using both categorical and continuous factors.
- The number of clusters is automatically selected.
- The capacity to efficiently examine massive data files

The TwoStep Cluster Analysis approach employs a probability distance metric to handle categorical and continuous data, assuming that variables in the cluster model are independent. Furthermore, each continuous variable has a normal (Gaussian) distribution, whereas each categorical variable has a multinomial distribution. Internal testing suggests that the technique is reasonably resistant to breaches of the assumption of independence and distributional assumptions. Still, you should keep track of how effectively these assumptions are satisfied. The algorithm is conducted in two phases (Brawijaya Professional Statistical Analysis, 2011):

Step 1. The first step in the technique is to create a Cluster Features (CF) Tree. The tree starts with the first case, placed in a leaf node at the tree's root, and provides variable information about that instance. Based on its resemblance to existing nodes and using the distance measure as the similarity criteria, each subsequent example is either added to an existing node or establishes a new node. A summary of variable information about several cases is included in a node that contains multiple cases. As a result, the CF tree serves as a concise overview of the data file.

Step 2. An agglomerative clustering technique is used to group the CF tree's leaf nodes. A variety of solutions may be created using agglomerative clustering. Each of these cluster solutions is compared using Schwarz's Bayesian Criteria (BIC) or the Akaike Information Criterion (AIC) as the clustering criterion to determine which number of clusters is "optimal."

The results indicate that the two-step cluster analysis extracted 2 clusters for 4 inputs. The first cluster size includes 48.3% of the respondents, while the second cluster size is 51.7%. Furthermore, the analysis includes cluster quality testing. From here, it can be observed that the silhouette measures of cohesion and separation have an approximate value of 0.5, which is considered acceptable for a benchmark of 0.3 (Yong & Pearce, 2013).



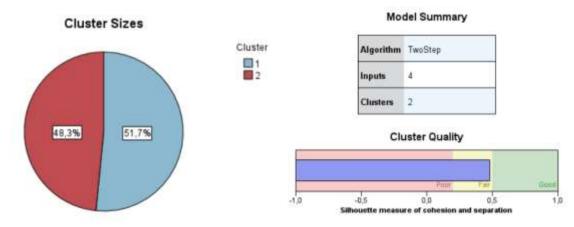


Figure 3 shows the cluster results across the business performance summary indicators to extend the analysis. It can be observed the clustering algorithm identified 2 clusters in which the first includes 31 respondents and the second 29 for four different business performance inputs.

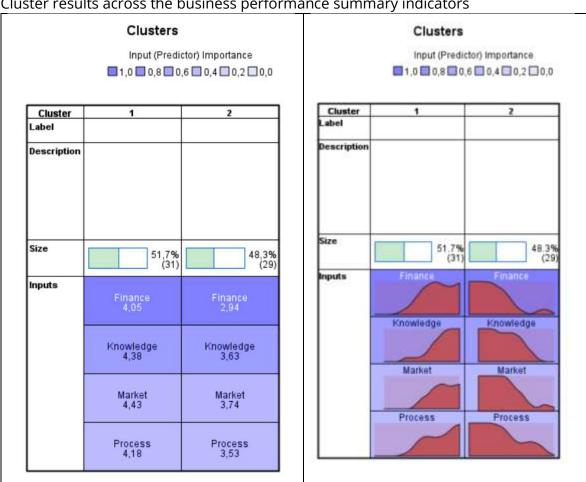


Figure 3
Cluster results across the business performance summary indicators

Figure 3 also presents the predictor's importance: for financial performance, this value is 0.8, suggesting the highest importance of the included inputs, and 0.2 for market performance and processes success as predictors with the lowest importance according to the respondents across the two clusters. The highest difference between the selected inputs in terms of mean scores can be observed in the financial performance for Cluster 1, the value is 4.05, and in Cluster 2, the value is 2.94. Furthermore, Figure 3 demonstrates that the predictors' cell distribution of records is significantly divergent across the clusters.

#### Relationship between cluster membership and international vs. domestic market orientation

Table 4 shows the crosstabulation of the International vs. domestic market orientation and the TwoStep Cluster solution. The comparison aims to associate respondents' international and domestic market orientation preferences. The solution suggests that in Cluster 1, the preference is towards the international market (59,1%), while in Cluster 2, the predisposition is towards the domestic market (52,6%), with 51,7% percent of records in Cluster 1 and 48,3% of records included in Cluster 2. Results indicate a relationship between the Predominant market orientation and the Business

Performance, since the Cluster 1 companies, which are mostly domestic-oriented, also have lower values of business performance indicators. The opposite is true; the Cluster 2 companies, which are mostly internationally oriented, also have lower values of business performance indicators. Although the chi-square did not indicate that the observed difference is statistically significant (chi-square=0.767, p-value=0.381), we believe that this result is preliminary relevant and provides a direction for further research.

Table 4

Crosstabulation of the International vs. domestic market orientation and the TwoStep Cluster solution

| International vs. domestic market orientation * TwoStep Cluster Number<br>Crosstabulation |                           |                           |           |        |  |  |
|---|---------------------------|---------------------------|-----------|--------|--|--|
|   |                           | TwoStep Cluster<br>Number |           |        |  |  |
|   |                           | Cluster 1                 | Cluster 2 | Total  |  |  |
| International vs. domestic  | Mostly domestic<br>market | 47.4%                     | 52.6%     | 100,0% |  |  |
| market orientation Mostly international market  |                           | 59.1%                     | 40.9%     | 100,0% |  |  |
|   | Total                     | 51,7%                     | 48.3%     | 100.0% |  |  |

#### **Conclusion**

Businesses need to consider goals for time, quality, performance, and service and then transform these objectives into precise measurements to put the balanced scorecard to effect. This paper contributes to the existing literature by providing insight into the managers' perspectives in Croatia on international markets using a questionnaire based on a four-dimension approach. The obtained results from the two-step cluster analysis extracted 2 clusters for 4 inputs. The first cluster size included 48.3% of the respondents for domestic market orientation, while the second cluster size was 51.7% for international market orientation. It was observed that the respondents from companies that are oriented to the domestic market mostly agreed with the T3 particle or quality of products/services within the dimension of market performance (average score 4.21) and agreed the least with the F2 particle or realized profit from the dimension of financial performance (average score 3.45).

On the other side, respondents from international market-oriented companies largely agreed with the T1 particle or customer satisfaction within the dimension of market performance (average rating 4.27). The least agreed with the particle F3 or return on

investment within the financial performance dimension (average score 3.55). The research presented the average values of corporate performance assessments evaluated by a balanced scorecard system in the firm's international orientation. Additionally, the respondents from domestic-market companies primarily agreed with the dimensions of market performance components (average score 4.05). In contrast, international-market companies predominantly agreed with the particles from the dimensions market performance (average score 4.17) and knowledge and employees (average score 4.09). Given that the questionnaire was used to meet the researcher's needs, it is important to note that the respondents' responses may be biased and thus have an impact on the empirical study's findings.

The research is limited to managers in Croatia; thus, it is recommended that future research: (i) enlarge the scope of the research by using a larger number of variables (ii) some additional components and variables may affect the comparing association between the markets that were not included and tested in this study. In this regard, future research could consider such dimensions, all to expand the research framework and increase knowledge about the effects of the system of balanced scorecard system in domestic and international markets, (iii) the research was limited to cross-sectional data used to determine the current state of the key performance indicators in terms of a balanced scorecard system. To this end, it is necessary to consider a longitudinal research methodology that should collect data for a certain period, (iv) the sample size limits the generalization of research findings. It is suggested that future studies in this area improve the generalization of research by expanding the incentives for more businesses to be included at the regional level.

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