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# Effects of Change Management on Competitive Advantage in the ICT Sector in the Republic of Croatia

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**ABSTRACT**

The sector of information and communication technologies (ICT) is characterized by dynamic and rapid technical progress, convergence, and system integration, which leads to rapid changes in all business segments and requires immediate and adequate adaptation of the organization to changes. The activities of the ICT sector are of key importance for influencing the growth and development of the country's entire economy, while information and communication technologies are a crucial part of modern business and an indispensable tool in achieving business efficiency and success. To produce the conclusions arising from the hypothesis of this scientific research that change management has a positive effect on the creation of competitive advantage in the ICT sector in the Republic of Croatia, this empirical research included the theoretical framework of change management composed of the determinants of change management in the ICT sector, known as ITIL structural model, then the determinant of one of the latest change management models, the ADKAR model, and determinants of the competitiveness of the Croatian ICT sector. The analysis of the collected data took place in three phases: a) descriptive analysis of the sample; b) assessment of the metric characteristics of the applied measuring scales; and c) data analysis using the multiple linear regression method. Reliability, which is defined as the degree to which measurements are error-free resulting in consistent results, was measured by Cronbach's alpha coefficient, the most popular measure of internal consistency of a set of statements. The multiple linear regression method was applied to predict the dependent variable based on the knowledge that can be obtained from a series of independent variables and to determine the nature of the relationship between said variables. Regression coefficients and t-tests were used to evaluate the strength of the relationship between variables. The population of this research consists of all Croatian companies, regardless of size, whose core activity is defined within the Information and Communication Technologies Sector. The sample was chosen by random selection, to some extent conditioned by the availability of e-mail addresses of the mentioned companies, to which a request for participation in the

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research was sent. The data was collected for five months, and the survey was fully completed by 103 respondents, which is a response rate of approximately 20%. The results of the research confirmed that change management by applying the ADKAR model in the Croatian ICT sector has a positive effect on the competitive advantage of the organization, and as such on the economic growth and development of the economy.

## 1. Introduction

The information and Communication Technology (ICT) sector has many actors and organizations within its ecosystem. According to Hisrich, Stanco, and Wisniewski (2020), the ICT sector is not only responsible for planning, coordinating, and implementing various IT-related projects, programs, workshops, conferences, and seminars but also facilitates universities to produce IT skilled workforce that can contribute and play their role in this ecosystem. The ICT sector is one of the key factors in the economic growth and development of the Republic of Croatia and will continue to be a major contributor to the country's innovation and growth. Fransman (2010) underlines that innovation and growth have become the standard for describing the ICT sector as an ecosystem. According to Han, Ruan, Wang & Zhou (2019), ICT is an integral part of social and economic activities that creates the framework for rapid development and innovation. The early use of ICT had an impact on product automation and production, while the introduction of computers and the Internet had an impact on the economy's competitiveness in terms of investment and production (Han et al., 2019). At the same time, by investing in further development of operations and competitiveness, the ICT sector increases its efficiency and innovation in the business environment through new products, services, and work processes, research and development, investment in human resources, marketing, and infrastructure. This affects the growth and development of the entire economy, but at the same time ICT sector also faces increasing market and technological challenges which makes creating and maintaining a competitive advantage a challenge that needs to be overcome through effective changes implemented by the organization's management. Successful change management, according to Luecke (2003), is necessary for an organization to survive in today's highly competitive and continuously evolving environment. Mansaray (2019) considers that organizations need to re-examine and take a different look at the way they work and understand, adopt, and implement changes in their business operations to respond to developments driven by innovations. Organizational change is necessary for organizations to survive in the modern world and can be crucial in gaining competitiveness.

Competitiveness is a concept defined in different ways. Pirić (2008) defines competitiveness as the relative ability of a country, industry, or micro-entity to produce products or provide services better than other participants in the domestic or foreign market and represents the country's ability to produce goods and services that pass the test of the international market under equal market conditions, with the simultaneous retention and long-term increase of the population's income. Porter (2008) considers that national prosperity is not inherited but created by strategic choices and believes it is not important which products are produced but how they are produced, so the key to the success of an organization is a sustainable competitive advantage in the industry. The essence of the organization's strategic behavior is to connect with the industry as it is the most important segment of its environment (Porter, 2008).

Change management is of particular importance in the ICT sector, as the competitive position of the company and the sector depends on it. On personal and organizational levels change

management requires a new way of thinking, new models, and tools that enable quick implementation of change. Implementation of new technologies in everyday business is the key to creating a competitive advantage, and thus the growth and development of the entire economy. This paper aims to clarify the concepts of change management in the ICT sector in the Republic of Croatia and to investigate their impact on the creation of its competitive advantage.

## 1.1. Literature Review

### 1.1.1. Change Management

Early theories of change management suggested that organizations could not be effective or improve performance if they were constantly changing because the dynamics of organizational change can and do reduce organizational performance potential (Rieley and Clarkson, 2001, p. 160). On the other hand, Burnes (1996) claims that the general applicability and validity of the approach to organizational change depends to a large extent on whether one subscribes to the view that all organizations operate in a dynamic and unpredictable environment to which they constantly must adapt. Organizational transformation is not just a routine change but a fundamental change that substantially may alter an organization's relationships with one or more key constituencies, e.g., customers, employees, suppliers, and investors (Rouse & Baba 2006). In the current era, the adoption of Information Communication Technology (ICT) demands a change in business approach for survival and to be competitive in the global environment (Al-Debei & Al-Lozi 2012).

The relationship between ICT and change has become more complex as technology and ICT systems have improved. In the early days of computerization, systems did not operate within the business process but worked alongside it, with people performing tasks and entering results into the computer system. Today, ICT is no longer considered a technical support but a critical resource leading to organizational value (Kohli & Deveraj, 2004) and is necessary for achieving competitiveness in almost all industries or markets (David et al, 2002). In the ICT sector, according to Addy (2007), ITIL is an acronym for Information Technology Infrastructure Library and is the most well-known structural framework for managing IT services that even more specifically defines change as the process of moving from one defined state to another. Organizational change can't happen if each employee is not ready to change.

Prescriptive models advising senior managers and executives on how to best implement planned organizational change abound in the change management literature. One of those models is the ADKAR model of change management, one of the latest change management models which is focused on the people side of change and is effective for change on an individual as well as an organizational level. It was created in 1998 by the founder of Prosci, Jeff Hiatt. ADKAR model is oriented towards the goals to be achieved in the management of organizational change. ADKAR is the acronym standing for awareness of the need for change, desire to participate and support change, knowledge of how to change, ability to implement desired skills and behaviors, and reinforcement to sustain the change (PROSCI, 2023).

According to the research conducted in the banking sector in India, by Goyal and Patwardhan (2018), the ADKAR model shows that change in an organization starts with employee awareness. Further research in this area could focus on how successful change implementation affects employee performance and job satisfaction, how employees behave toward resistance to change, and the correlation between these two dimensions. Jaaron,

Hijazi, and Musleh (2021) investigated the contribution of the ADKAR model in the use of Building Information Modeling Technology (BIM) in construction projects. The five ADKAR steps were implemented for all engineers (i.e. designers and contractors) in the developed model. These five ADKAR steps are needed to support these engineers' ability to overcome traditional engineering methods and change to BIM and are equal. According to the authors, this research contributes to the literature through the development of an integrated conceptual change management model for the successful adoption of BIM technology and shows how the different phases of ADKAR are managed to guide the change process taking into account the different parties involved in construction projects (Jaaron et.al, 2021). According to Ali, Mahmood, Zafar, and Nazim (2021), more than 3.500 organizations have successfully used the ADKAR change model to manage the human side of change. The authors emphasize previous studies show that a new user should choose the ADKAR model for managing change elements because each phase of the ADKAR change model is clearly explained (Ali et al., 2021).

Finding an adequate model of change management, which enables a quick, timely, and adequate response to changes in the organization, is a key element in realizing the competitive advantage of the ICT sector. According to this, change management is especially important in the ICT sector and requires a new way of thinking as well as new models and tools that will enable the rapid implementation of change. Through the change management methodology, companies anticipate possible difficulties and their resolution to implement the change quickly and minimize the difficulties as much as possible. The use of modern technologies is of great importance for creating a competitive advantage, and thus economic growth and development. Change management is the main tool to achieve these goals. ADKAR is a change management model that can identify why changes are made and help to identify all steps needed for successful change. ADKAR has been chosen because of its focus on changes at both, the individual and organizational levels. This makes it different from other change management models focused only on the organizational change component.

### 1.1.2. Competitive Advantage

Technology has become the most important element for competitive advantage. End-user acceptance of innovative technologies is said to be one of the best success factors for excellent business performance results, while resistance to technology adoption leads to business failure. Due to the importance of information and communication technologies for the economy of the Republic of Croatia, the ICT sector has become the foundation of a society based on knowledge and employment growth. According to Atkison (1999), a growing learning economy needs a smart and strategic basic setting: education, research, and capabilities. The growth and development of the ICT sector on these foundations ensures long-term employment growth and an increase in the living standard. Jobs in the digital society and modern economy require knowledge and skills in the field of information and communication technologies so the ICT sector has an important role in the transformation and optimization of work processes in both, the private and public sectors. Li, Lee, and Kong (2018) believe that because the ICT industry is a driving force for economic development and growth, it is essential to gain knowledge of how ICT works in other industries at different levels. Qossi, Maulina, Purnomo, Muftiadi, et al. (2019) consider information and communications technology (ICT) capability to be one of the approaches companies can use to build their competitive advantage. ICT capability encompasses a company's ability to strategically use information and communications technology functions or applications for its business activities and includes the use of e-mail, websites, e-commerce, web conferencing, intranets, extranets, and other similar tools.

Achieving competitiveness is a central task for every organization, industrial sector, national, regional, and global economy. Competitiveness is a basic tool in supporting the achievement of positive business results and the prosperity of the organization's employees and society, so it must be at the center of the organization's strategic planning. Although competitiveness is one of the most important goals for every organization, in literature there is still a question of whether competitiveness should be measured at organizational, industrial, national, or international levels. There is no single position on the methods of measuring competitiveness or the factors that influence competitiveness. Some studies emphasize the organization's good performance (Garengo et al. 2005; Garg et al. 2003), while others the production (Fleury & Fleury 2003; Lau, 2002), trade (Cas, 1988), or productivity growth (Porter, 1990) as the most important competitiveness factors. The great diversity in the measurement of competitiveness suggests the complexity of the concept and the variation of competitiveness factors. Although literature determines the sources of competitive advantage, it does not provide a clear definition.

## 2. Methodology

To develop a change management model in the ICT sector in the Republic of Croatia, the main purpose of this empirical research is to define and empirically improve the theoretical model of the impact of change management on the creation of competitive advantage in the ICT sector in the Republic of Croatia. The research problem is contained in the hypothesis H1: change management has a positive effect on the creation of competitive advantage in the ICT sector in the Republic of Croatia. To test the hypothesis, statistical analysis using the multiple linear regression method was performed. For that purpose, variables "Personal changes" (OP), "Organizational changes" (ORGP), "Change Management" (UP), and Competitiveness in the ICT sector (CMPT) were created.

The sample of this research covered all organizations of the ICT sector in the Republic of Croatia. The sample was selected at random, somewhat conditioned by the availability of e-mail addresses to which a request to participate in this research was sent. The research was conducted using an online questionnaire to which 103 respondents from 103 ICT companies responded. The rate of return was about 20% (19.8%). There was an equal share of micro-organizations and large organizations, which together make up the majority of 68%, while the smallest share is of medium-sized organizations (13%).

### 2.1. Personal and Organizational Change

To measure personal and organizational changes according to the proposed ADKAR model, five measuring scales were created, each of which refers to one of the theoretical aspects of change: awareness of the need for change, desire to participate and support change, knowledge of how to change, ability to implement desired skills and behaviors and reinforcement to sustain the change (ADKAR, 2023). A five-point Likert scale (1 = strongly disagree, 5 = strongly agree) was used to rate respondent's attitudes and opinions about personal and organizational change in the questionnaire that consisted of six statements for each aspect of personal and organizational change.

Cronbach's alpha coefficient was calculated for both measuring scales to determine their reliability. If one of the measuring scales was not reliable enough, the statements that affect the reduction of the value of the Cronbach alpha coefficient and the reliability of the measuring scale were identified and excluded from further analysis. Results are shown in Table 1.

Table 1.
*Cronbach alpha coefficients of measuring scales personal change and organizational change*

| Measuring scales | Cronbach alpha coefficient | |
|---|---|---|
| | Personal change | Organizational change |
| Awareness of the need for change | 0,90 | 0,91 |
| Desire to participate and support change | 0,77 | 0,81 |
| Knowledge of how to change | 0,85 | 0,79 |
| Ability to implement desired skills and behaviors | 0,82 | 0,71 |
| Reinforcement to sustain the change | 0,85 | 0,80 |

*Source: Author's research*

In the next step, exploratory factor analysis was used to reduce the number of variables for each group of factors separately to reduce the potential problem of multicollinearity. Varimax rotation was used to interpret the factor structure simply and to reduce the number of complex variables. In the evaluation of the exploratory factor analysis, the following criteria were used: total explained variance (≥ 0.50), factor loading (≥0.40), and ensuring the suitability of the sample (≥0.60). Next, the Kaiser and Guttmann rule was used as a factor retention criterion. It suggested retaining as many factors as possible with the eigenvalues equal to or greater than 1. Variables with a factor loading equal to or greater than 0.4 are used in the interpretation of factors.

For personal change, in the fifth step of factor analysis, a satisfactory factor structure was obtained with three isolated factors which explain 73.6% of the variance (Table 2).

Table 2.
*Personal change factor structure*

| Factor | Eigenvalue | Cumulative Eigenvalue | Percentage of explained variance | Cumulative percentage of explained variance |
|---|---|---|---|---|
| Personal implementation of change | 2,752 | 2,752 | 34,401 | 34,401 |
| Personal vision and strategy | 1,615 | 4,367 | 20,189 | 54,590 |
| Accepting and following the course of change | 1,521 | 5,888 | 19,012 | 73,602 |

*Source: Author's research*

The results of the factor analysis point to the conclusion that applied measurement scales have properties of convergent and discriminant validity, given that the associated statements have a high factor loading on only one factor and low factor loadings on the other factors.

To test the hypothesis using multiple linear regression, the variable "Personal change" (OP) was created by summing the results of the respondents on all three personal change factors (Table 3). The results were weighed by the share of each factor in the total explained variance.

Table 3.
*Created variable "Personal change"*

| Variable | N | Mean | Min. | Max. | Std. Dev. | Skewness | Kurtosis |
|---|---|---|---|---|---|---|---|
| Personal change (OP) | 103 | 11,0256 | 8,04 | 14,44 | 1,61061 | 0,269 | -1,060 |

*Source: Author's research*

The values of the coefficient of asymmetry (Skewness) and the coefficient of roundness (Kurtosis) for the created variable "Personal change" (OP) are within acceptable limits as the absolute value of the coefficient of asymmetry is less than +/-3, and the coefficient of

roundness is less than 10. Since the collected data do not show an unacceptable level of univariate normality, variables can be used in further analyses.

For organizational change, after determining the reliability of the organizational change measurement scale, an exploratory factor analysis was performed to assess their convergent and discriminative validity. In the fifth step of factor analysis using the method of principal components, with Varimax rotation and application of the Kaiser-Guttman rule, a satisfactory factor structure was obtained with two factors, explaining 75.5% of the variance (Table 4).

Table 4.
*Organizational change factor structure*

| Factor | Eigenvalue | Cumulative Eigenvalue | Percentage of explained variance | Cumulative percentage of explained variance |
|---|---|---|---|---|
| Encouraging changes in the organization | 2,300 | 2,300 | 38,339 | 38,339 |
| Maintaining changes in the organization | 2,228 | 4,528 | 37,131 | 75,470 |

*Source: Author's research*

In the next step, to test hypotheses using the multiple linear regression method, the variable "Organizational changes" (ORGP) was created by summing the results of respondents on both factors of organizational changes. The results were weighed by the share of each factor in the total explained variance as shown in Table 5.

Table 5.
*Created variable "Organizational Change (ORGP)*

| Variable | N | Mean | Min. | Max. | Std. Dev. | Skewness | Kurtosis |
|---|---|---|---|---|---|---|---|
| Organizational Change (ORGP) | 103 | 10,6368 | 6,00 | 14,51 | 1,72719 | -0,074 | -0,054 |

*Source: Author's research*

As shown above, values of the coefficient of asymmetry (Skewness) and the coefficient of roundness (Kurtosis) are within acceptable limits as the absolute value of the coefficient of asymmetry is less than +/-3, and the coefficient of roundness is less than 10. Since the collected data do not show an unacceptable level of univariate normality, the variable "Organizational changes" (ORGP) can be used in further analyses.

## 2.2. Change Management

Since this empirical research looks at change as personal and organizational change, to measure change management was necessary to look at its existing indicators in the ICT sector. As an indicator of change management was used the ITIL model consists of the following structural indicators of change management in the ICT sector: formulate a high-level plan, obtain approval to proceed, define tasks and dependencies, conduct a risk assessment and back-out planning, define success criteria, obtain approval to proceed, assign resources and procure equipment/materials, schedule change, perform change/tasks, monitor and track task progress, validate completed change, implement change into production/return to service, review actual change against plan, document discrepancies, update CMDB / asset repository, close change request, review requirements(s)/identify goals, (Addy, 2007, p. 187).

To examine attitudes about the importance of structural change management in ICT organizations in the Republic of Croatia, respondents rated the importance of certain elements in ICT sector change management on a five-point Likert scale (1 = strongly

disagree, 5 = strongly agree) in the questionnaire consisting of fifteen statements. The Cronbach alpha coefficient for the measurement scale was calculated to determine its reliability. Statements that affect the reduction of the value of the Cronbach alpha coefficient and the reliability of the measuring scale were identified and excluded from further analysis.

Table 6.
*Cronbach alpha coefficients of measuring scale Changes in the ICT sector*

| Measuring scale | Cronbach alpha coefficient |
|---|---|
| Changes in the ICT sector | 0,95 |

*Source: Author's research*

After establishing the reliability of the measurement scale, exploratory factor analysis was performed to obtain optimal linear combinations of manifest variables from the measurement scale "Changes in the ICT sector" (UP), which later was an integral part of the latent variable "Change Management" (UP). In the next step, the factor analysis using the method of principal components with Varimax rotation and the application of the Kaiser-Guttman rule was performed. A satisfactory factor structure was obtained in the second step of this analysis with two isolated factors, explaining 81.2% of the variance (Table 7).

Table 7.
*Change Management factor structure*

| Factor | Eigenvalue | Cumulative Eigenvalue | Percentage of explained variance | Cumulative percentage of explained variance |
|---|---|---|---|---|
| Planning and implementation of change | 4,900 | 4,900 | 44,542 | 44,542 |
| Change tracking and validation | 4,029 | 8,929 | 36,626 | 81,168 |

*Source: Author's research*

To test the hypothesis using the multiple linear regression method, the variable "Change Management" (UP) was created by the results of respondents on both factors of change management in the ICT sector (Table 8). The results were weighed by the share of each factor in the total explained variance.

Table 8.
*Created variable Change Management (UP)*

| Variable | N | Mean | Min. | Max. | Std. Dev. | Skewness | Kurtosis |
|---|---|---|---|---|---|---|---|
| Change management | 103 | 25,0058 | 9,20 | 27,75 | 3,09670 | -2,298 | 8,358 |

*Source: Author's research*

The values of the coefficient of asymmetry (Skewness) and the coefficient of roundness (Kurtosis) are within acceptable limits. The absolute value of the coefficient of asymmetry is less than +/-3, and the coefficient of roundness is less than 10. Since the collected data do not show an unacceptable level of univariate normality, the variable "Change Management" (UP) can be used in further analyses.

## 2.3. Competitiveness

The great diversity in competitiveness measurement suggests the complexity of the concept and the variation of competitiveness factors. Although literature determines the sources of competitive advantage, it does not provide a clear definition. Considering that there is no single measurement of competitiveness at any level, and based on the determinants of ICT

sector operations, six factors of competitiveness were selected for this study: products and services; research and development; human resources; marketing; and IT infrastructure.

Respondents rated their agreement with the statements related to chosen competitiveness factors on a five-point Likert scale (1 = strongly disagree; 5 = strongly agree). The Cronbach alpha coefficient was calculated to determine the reliability of the measurement scale in the questionnaire which consisted of six statements. If the measuring scale was not reliable enough, the statements that affect the reduction of the value of the Cronbach alpha coefficient and the reliability of the measuring scale were identified and excluded from further analysis. Results are shown in Table 9.

Table 9.
*Cronbach alpha coefficients of measuring scale Competitiveness*

| Measuring scale | Cronbach alpha coefficient |
|---|---|
| Business environment | 0,63 |
| Products and services | 0,79 |
| Research and development | 0,87 |
| Human resources | 0,91 |
| Marketing | 0,90 |
| ICT Infrastructure | 0,93 |

*Source: Author's research*

After determining the reliability of the measurement scales, an exploratory factor analysis was performed to assess their convergent and discriminative validity. In the fifth step of factor analysis using the method of principal components, with Varimax rotation and application of the Kaiser-Guttman rule, a satisfactory factor structure was obtained with four isolated factors, explaining 80.4% of the variance (Table 10).

Table 10.
*Competitiveness factor structure*

| Factor | Eigenvalue | Cumulative Eigenvalue | Percentage of explained variance | Cumulative percentage of explained variance |
|---|---|---|---|---|
| Information and communication technology | 4,223 | 4,223 | 28,156 | 28,156 |
| Human resources | 3,917 | 8,140 | 26,112 | 54,267 |
| Development of products, services, and distribution | 2,337 | 10,477 | 15,577 | 69,845 |
| Financing | 1,584 | 12,061 | 10,561 | 80,406 |

*Source: Author's research*

For hypothesis testing using the multiple linear regression method, the variable "Competitiveness" (CMPT) was created by summing the results of the respondents on all four factors of competitiveness. The results were weighed by the share of each factor in the total explained variance (Table 11).

Table 11.
*Created variable Competitiveness.*

| Variable | N | Mean | Min. | Max. | Std. Dev. | Skewness | Kurtosis |
|---|---|---|---|---|---|---|---|
| Competitiveness | 103 | 15,2888 | 6,16 | 19,97 | 2,57740 | -0,646 | 0,525 |

*Source: Author's research*

Values of the coefficient of asymmetry (Skewness) and the coefficient of roundness (Kurtosis) are within acceptable limits. The absolute value of the coefficient of asymmetry is less than +/-3, and the coefficient of roundness is less than 10. Since the collected data do not

show an unacceptable level of univariate normality, the variable "Competitiveness" can be used in further analyses.

## 3. Results

To test the hypothesis H1: Change management has a positive effect on the creation of competitive advantage in the ICT sector in the Republic of Croatia, the multiple linear regression was performed using the variable "Personal changes" (OP), the variable "Organizational changes" (ORGP) and the variable "Change Management" (UP). All the mentioned variables showed the characteristics of univariate normality in the descriptive analysis.

Regression equation: $Y = \alpha + \beta_1 * OP + \beta_2 * ORGP + \beta_3 * UP + e_i$ (1)

Whereby:
Y = competitiveness
OP = personal changes
ORGP = organizational changes
UP = change management

Table 12.
*Multiple linear regression results (Change Management/ Competitiveness)*

| Variable | Coefficient | Std. Dev. | t(100) | p-level |
|---|---|---|---|---|
| α | 0,342 | 2,064 | 0,166 | 0,869 |
| OP | 0,459 | 0,141 | 3,247 | 0,002 |
| ORGP | 0,386 | 0,141 | 2,747 | 0,007 |
| UP | 0,231 | 0,072 | 3,220 | 0,002 |

| Statistics | Value |
|---|---|
| Multiple R | 0,605 |
| Multiple $R^2$ | 0,367 |
| Adjusted $R^2$ | 0,347 |
| F(3,99) | 19,094 |
| p | 0,000 |
| Std. Err. of Estimate | 2,08223 |

*Source: Author's research*

According to the results of the multiple linear regression performed using the least squares method (Table 12), the equation of the impact of change management on competitiveness, i.e. the competitive advantage of the company, can be estimated:

$\bar{Y} = 0,342 + 0,459 * OP + 0,386 * ORGP + 0,231 * UP$

The results also show that the influence of the constant is not statistically significant, so the equation can alternatively be evaluated without the constant:

$\bar{Y} = 0,459 * OP + 0,386 * ORGP + 0,231 * UP$

According to the multiple linear regression analysis results, it can be concluded that there is a positive and very significant influence of positive attitudes towards personal and organizational changes and change management on competitiveness in the ICT sector in the Republic of Croatia. The following research findings can be given:

1. Positive attitudes toward personal changes have a statistically significant effect on the company's competitiveness ($\beta1=0.459$, $p<0.002$).
2. Positive attitudes toward organizational changes have a statistically significant effect on the competitiveness of companies ($\beta2=0.386$, $p<0.007$).

3. Change management (ITIL) has a statistically significant effect on the company's competitiveness (β3=0.231, p<0.002).
4. Positive attitudes towards personal and organizational changes and change management according to the ITIL model have a positive effect on the competitiveness of the company, i.e. on the creation of a competitive advantage in the ICT sector (F(3.99) = 19.094, p<0.000).

The contribution of positive attitudes towards personal and organizational changes and change management explains 36.7% of the variance of competitive advantage, which would explain about 34.7% of the population. Change management is an important predictor of creating a competitive advantage, and although many other factors influence competitiveness, the model of the influence of positive attitudes towards change and change management on competitiveness is highly statistically significant (p<0.000).

Table 13.
*Correlation matrix of individual indicator variables of change management*

| Variable | Personal change (OP) | Organizational change (ORGP) | Change Management (UP) |
|---|---|---|---|
| Personal Change (OP) | 1,000 | 0,424 | 0,148 |
| Organizational change (ORGP) | 0,424 | 1,000 | 0,374 |
| Change Management (UP) | 0,148 | 0,374 | 1,000 |

*Source: Author's research*

From the table above it can be concluded that there is a moderate statistically significant correlation between the variables "personal changes" and "organizational changes", and also between the variables "organizational changes" and "change management", while the correlation between the variables "personal changes" and "change management" is not statistically significant (p>0.05).

Hypothesis H1: Change management has a positive effect on the creation of competitive advantage in the ICT sector in the Republic of Croatia was proven by the multiple linear regression analysis. The results of this analysis show that positive attitudes towards personal and organizational changes and change management in the ICT sector according to the ITIL structural model have a positive effect on the creation of a competitive advantage in the ICT sector in the Republic of Croatia. The importance of change management in creating a competitive advantage in the ICT sector is reflected in the organization's connection with the industry and its ability to quickly and adequately respond to all demands coming from the organization's internal and external environment. In this way, organizations in the ICT sector build competitiveness in a narrow professional area within the industry to achieve their goals.

## 4. Conclusion

Due to the rapid development of ICT technologies and increasingly pronounced indicators of globalization, the modern economy is turning from a classical to a digital economy. While the classical economy is based on the management of material resources, the digital economy is based on the management of intellectual capital resources. In the digital economy, the ICT sector is a central point and the driver of competitiveness and economic growth. Work processes, management, and decision-making in the digital economy are characterized by rapid and dynamic changes and thoughtful responses to achieve competitiveness and profit growth. In modern business, a successful change management strategy means a way to create a competitive advantage and the only way for an organization to survive in an environment with new competitors every day. Adapting to changes and new market conditions is of key

importance for an organization to achieve its goals and create a competitive advantage. It also brings intangible benefits such as change implementation in business activities which is important for the business improvement and organization's success.

According to the defined hypothesis of this empirical research, the elaboration of the theoretical concept and structural characteristics of change management was complemented by an evolutionary presentation of the factors of personal and organizational changes. The results of this study confirm the importance of change management as one of the key and unavoidable elements of modern business whose goal is to create competitiveness and achieve profit growth. Change management, understood through personal and organizational changes as two integrated change management variables that reflect the organization's ability to adapt to continuous and dynamic market movements, has a significant impact on the Croatian ICT sector. This empirical study contributes to a systematic approach to change management in the ICT sector in the Republic of Croatia to immediately, adequately, and quickly respond to future changes and create a competitive position in the market by focusing on personal and organizational changes.

ICT organizations in the Republic of Croatia, faced with the demands of modern business, are intensifying their efforts in implementing personal and organizational changes to take a leading position on the market and at the same time convey the positive effects of their business to quickly respond to all risks and challenges through effective change management. That makes the ICT sector one of the fastest-growing sectors of the Croatian economy.

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