

Measuring and Enhancing Productivity in ICT SMEs: Strategies for Remote Work Success

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ABSTRACT

Remote working has become a central part of modern working practices in various industries, including the information and communication technology (ICT) sector. In order to understand the impact of telecommuting on the productivity and satisfaction of employees in small and medium-sized enterprises (SMEs), a study based on Herzberg's two-factor theory of motivation was conducted. With the help of quantitative and qualitative methods, including surveys, factor analysis and focus groups, we verified the relevance of motivational factors and hygiene factors in the modern work environment. The results of the research showed that the balance between work and private life is a key motivational factor in telecommuting, which expands Herzberg's theory with new elements. In addition, high digital literacy, flexibility in choosing working hours and greater employee autonomy also proved to be important factors. The main contribution of the research lies in the extension of the application of Herzberg's theory to modern work environments and its implications for organizational practices in SME companies.

Keywords

Productivity, telecommuting, motivational factors, SME ICT, Herzberg's theory, work-life balance.

1. INTRODUCTION

Digitization and rapidly developing information technology have radically transformed work environments. The COVID-19 pandemic has accelerated the transition to remote work, which has brought new challenges and opportunities to improve productivity and employee satisfaction. Despite the adjustments, the key question remains how to maintain or even increase the motivation and efficiency of employees in these changed circumstances. The research focused on examining the productivity of telecommuting in the case of small and medium-sized companies, as these cover a large part of the economy in Slovenia.

In order to find out which factors have the greatest influence on the productivity of employees working remotely, a study based on Herzberg's two-factor theory of motivation was conducted. Using a questionnaire, we collected key data on motivational and hygiene factors. The appropriateness of the statements used was also analyzed by extensive factor analysis. The results of the questionnaire were also used to implement the decision tree method, which allowed us to gain a deeper understanding of the connections between different productivity factors. Based on these findings, questions were formulated for the focus groups, the aim of which was to further explore specific challenges and opportunities related to remote work in ICT SME companies.

2. LITERATURE REVIEW

2.1 Herzberg theory

In modern project management, employee motivation is the key to successful project implementation. Herzberg's theory of motivation, developed in the 1950s, provides an important framework for understanding how various factors influence the satisfaction and performance of project teams. The theory divides motivational factors into hygienists and motivators. Hygienists include factors such as working conditions and pay, these factors do not encourage active work but prevent dissatisfaction [1]. Motivators, such as opportunities for advancement and recognition, however, directly promote engagement and increase productivity [2].

The effective application of Herzberg's theory in project settings, especially in small and medium-sized enterprises (SMITC), provides a better understanding of how motivation affects employee satisfaction and productivity [3]. At the same time, it is also important to consider newer approaches that focus on work flexibility and digital tools, as these elements are becoming more and more relevant in the modern work environment [4]. Key motivational factors such as achievement, recognition and responsibility have a significant impact on the successful implementation of projects in companies [5].

Therefore, it is crucial that within project management we focus on motivational factors such as achievements, recognition and responsibility, as these have a significant impact on the successful implementation of projects in companies.

2.2 The WHF and productivity

The concept of working from home (WFH) has gained tremendous importance in the last decade, as technological advances and changing work environments have changed the nature of employment relationships. Research, as cited by Bedarkar and Pandita [6], points out that employee engagement is an important source of competitive advantage today, as it has a positive impact on company performance. According to Kahn's definition from 1990, engagement is defined as the psychological presence of an employee when performing work tasks [7]. This concept goes back to early studies in the 20th century, where researchers such as Frederick Taylor argued that economic motivators such as higher wages were key to increasing productivity [8]. Despite criticism of his approach, Taylor remains influential for his efforts to optimize efficiency, quality and reduce costs.

Working from home has developed in recent years as an important trend that is associated with various theories and studies of employee engagement. Lillian Gilbreth and Mary Parker Follett emphasized the importance of employee

participation and engagement in the early 20th century, which is reflected again in the concept of WFH today. In the modern work environment, the understanding of WFH must be placed in the broader framework of employee engagement, which is increasingly recognized as a key factor in company success [9].

Productivity in the context of WFH can be defined as the ability of the workforce to produce high and increasing levels of output. It is that labor produces more value than it consumes, leading to savings, investment opportunities, and increased growth rates [10]. Studies such as those conducted by Elton Mayo and his colleagues in the Hawthorne Experiments have shown that social and psychological factors influence productivity and job satisfaction, meaning that physical conditions and high wages alone do not ensure high productivity [8]. Due to the advancement of technology that has enabled working from home, productivity has increased in many sectors, which is also a result of the greater flexibility that this way of working brings [11]. Effective use of digital communication tools and platforms allows employees to stay connected and organized, which is key to maintaining productivity in a remote work environment [12]. However, despite the benefits of WFH, there are challenges such as a sense of isolation, communication difficulties and reduced team dynamics, prompting companies to actively seek solutions to these problems [13].

Setting clear goals and expectations, providing regular feedback, and investing in employee training are critical to increasing productivity within WFH, all of which contribute to greater engagement and job satisfaction. The results of some research have shown that global employee engagement is decreasing, which is worrying and indicates the need for new strategies to maintain and increase employee engagement in the WFH era [14].

2.3 Project in IT sector and WHF

Despite the general principles, IT project management differs somewhat due to the unique characteristics and increased risks associated with these projects. Software development presents a particular challenge due to its abstract nature, which makes it difficult for stakeholders to understand the limitations of the project. This can lead to functionality requests that cannot be fulfilled. In addition to the complexity of IT projects, which is difficult to estimate in advance, problems also arise due to errors in programming assumptions that may turn out to be wrong over time. It is therefore crucial that projects are designed in such a way as to facilitate the diagnosis of the causes of errors [15].

Working from home creates additional challenges and opportunities for IT projects. Effective management of distributed teams requires the use of advanced communication tools and platforms that enable collaboration and information sharing in real time. It is crucial to maintain a high level of communication and cooperation among team members, as feeling isolated can be a barrier to creativity and productivity [16].

In order to effectively manage these challenges, collaborative planning involving all stakeholders and continuous monitoring and control of the project is important. In managing more complex IT projects, agile methods that focus on key processes have thus become popular [17]. In the context of working from home, however, these methods enable rapid adaptation to changes, which is key to the successful implementation of projects in a dynamic environment. At the same time, it is imperative that project managers regularly assess the

engagement and well-being of their teams, as this directly affects project performance [18].

3. RESEARCH METHODOLOGY

The research used a combination of quantitative and qualitative methods, which allowed for a deeper insight into the motivational factors and productivity of telecommuting in ICT small and medium-sized enterprises (SMEs). The main research instrument was a questionnaire based on Herzberg's two-factor theory. A factor analysis was performed to check the relevance of the statements in the survey questionnaire. After the analysis, the results of the survey questionnaire were used in the decision tree method, which helped in the additional analysis and interpretation of the data. Based on the results of the decision trees, questions for the focus groups were formulated, which enabled even more in-depth research into the selected topics and obtaining the opinions and experiences of the participants.

3.1 Questionnaire

In the research, we used survey questionnaires to collect quantitative data from employees, focusing on employees in Small and Medium-sized IT Companies (SMITCs). The survey tool was carefully designed and included scientifically validated items that measure key constructs such as control mechanisms, motivational factors, and productivity. We obtained informed consent for all participants and adhered to ethical guidelines regarding data protection and ensuring confidentiality.

Using systematic sampling, we ensured the representation of employees from five target IT companies who had been working remotely for at least five months. The survey questionnaire was designed in accordance with the research objectives, using an established measurement scale, namely the Likert scale [19], in order to capture all important constructs. The design of the questions was based on a review of existing literature and research on telework and motivational factors, while also including Herzberg's two-factor theory of motivation. The result was a questionnaire that included several sets of statements that the employees evaluated on a Likert scale (from 1 - do not agree at all to 5 - completely agree).

Before starting the main research, we also conducted a pilot survey among IT company employees, which enabled us to check and improve the questionnaire. Pilot testing ensured that the questions were clear, relevant and reliable. On the basis of statistical calculations, we found that in order to achieve an adequate level of statistical reliability, at least 90 respondents must participate. We therefore included 100 employees in the analysis, which enabled us to obtain representative and statistically reliable results. The survey was accessible via the 1KA online platform. In cooperation with the companies that arranged for the invitations of the employees, they duly filled out the survey questionnaires, with a 100% response rate.

3.2 Decision tree

Decision trees are an effective tool in data analysis and machine learning, as they provide a hierarchical structure of decisions based on different input variables. Each internal node in the tree represents a test on a specific attribute (eg employee satisfaction with telecommuting), and the branches show possible test outcomes. At the end of each branch is the so-called a leaf node representing the final decision or class. These visual and analytical tools enable simple interpretation of complex data and are particularly useful in classifying and predicting outcomes based on certain input values [20].

The decision tree algorithm is based on a branching procedure, where for each internal node a test is performed on an attribute (eg whether work motivation is high or low). Based on the results of this test, the tree branches into different paths that lead to the final decision. Each path from the root to the leaf represents a classification rule that provides insight into the decision-making process [21]. The algorithm builds a tree based on input data and is often used for the symbolic representation of knowledge, as it enables generalization of data and recognition of patterns within the data set [22].

The results obtained from the analysis of the decision trees served as the basis for the preparation of questions for the focus groups. Based on the key insights we gained from the decision trees, a hierarchical structure was created that clearly showed the connections between the individual statements in the survey and their impact on remote work productivity. This method enabled not only the identification of key factors, but also the formulation of meaningful questions for the focus group, on the basis of which the understanding of the researched topics was further deepened.

3.3 Focus group

By using a focus group, more subtle and personal aspects of the topic were investigated, which is often not reflected accurately enough in quantitative analysis. This method encouraged an open and collaborative environment in which participants could share different opinions, experiences and perspectives, which enabled a more holistic overview of the research topic. Seven employees who had already participated in the quantitative research were selected to form the focus groups. This enabled an in-depth exploration of the perspectives of employees who had already given their answers in the surveys. In this way, they were able to present their experiences even more comprehensively, and in the analysis these results were connected with the quantitative data already obtained.

The questions for the focus groups were formulated based on the analysis of the results of the decision trees. With the help of this analysis, the key factors influencing the productivity and adoption of remote work were identified, and based on these findings, the questions were directed to a more detailed discussion of the topics discussed. In this way, it was ensured that the questions were structured and aimed at obtaining useful and concrete insights. The focus group was conducted via the MS Teams application and lasted just over an hour. The participants were given the opportunity to express their opinions and experiences, which helped to present all points of view evenly. The obtained data were collected taking into account the basic ethical principles of qualitative research, including ensuring the confidentiality and voluntary participation of the participants.

Qualitative data collected through discussions in focus groups represent an important part of the analysis, as they enable a deeper understanding of the complexity of the researched field.

3.4 Factor analyses

Factor analysis is an advanced statistical method that enables the identification of latent constructs or hidden patterns in data that cannot be directly observed. The method reduces the number of observed variables by combining them into a smaller number of hidden factors, thus enabling a better interpretation and analysis of the data. Through this process, researchers discover interrelationships between variables and simplify complex data sets, allowing for a clearer understanding of research questions [23].

The primary purpose of the factor analysis in the research was to identify the latent constructs behind the observed variables and to understand their influence on the studied aspects of remote work. With the help of factor analysis, we determined which hidden factors appear in the survey questionnaire and how these factors affect the general patterns in the data. Each factor that was identified was described in detail according to its contribution to the understanding of the key constructs that were examined.

The factor analysis was carried out by analyzing the matrix of correlations between different items in the survey questionnaire in order to determine which items are most correlated with each other. Then, with the help of calculated factor loadings, the individual dimensions were interpreted and the factors that best explain the variability of the data were identified. Each dimension was described based on the items that had the highest loadings, meaning that they contribute the most to the explanation of a particular factor. For example, if a group of variables was strongly correlated with telecommuting employee satisfaction, that group of items formed a single factor labeled "Telecomm Satisfaction." In this way, various thematic factors, such as satisfaction, motivation, and productivity, were obtained, which later served as the basic building blocks of the research.

Factor analysis was instrumental in identifying the key factors that influence telecommuting productivity. In addition, it enabled a better breakdown of the data and a more in-depth analysis of the relationships between the variables. This method also contributed to improving the construct validity of the research instruments, as the identified items were grouped into more meaningful groups. In the final stage, this contributes to greater transparency and accuracy of the research results, and at the same time, the basis for further qualitative analysis was prepared.

4. RESULTS AND DISCUSSIONS

All individual parts of the questionnaire (satisfaction, motivation and productivity) were analyzed with quantitative analysis, and demographic data was also analyzed. The article highlights the third strand, which is specifically related to productivity, which is the central theme of the research. Based on the obtained findings, the impact of various factors on the productivity of employees working from home was examined in more detail.

4.1 Results of the survey questionnaire in relation to productivity

The third set of the questionnaire, which included 11 statements about productivity, which are shown in Table 1, gives the following key results:

- The link between satisfaction and productivity: Most respondents agreed that higher employee satisfaction has a positive impact on productivity. Many believed that working from home increases motivation, which in turn also affects higher productivity.
- Working outside normal working hours: As for working outside the required hours, the majority of respondents did not explicitly define this, indicating neutral attitudes on the issue.
- Greater productivity when working from home: A large proportion of respondents believe that working remotely increases productivity, with only a small percentage disagreeing. This indicates a generally positive perception of productivity when working from home.

- Perks and rewards: Most respondents did not have a clear opinion on whether fringe benefits would increase their interest in the job, but financial rewards were recognized as an important factor. More than a third of respondents believe that more praise would increase their interest in the job, although more than half remained neutral on this statement.
- Working time flexibility: a very large percentage of respondents agree that greater working time flexibility when working from home has a positive effect on their productivity, confirming the importance of flexibility for employees.

Table 1. Descriptive statistic for the Productivity

Sub-questions	Answers (%)					Mean	SD
	1	2	3	4	5		
Workplace productivity perception	2	9	85	3	1	2,9	0,49
Home productivity perception	1	0	10	83	6	3,9	0,50
Feeling of overworked	1	6	90	2	1	3,0	0,40
Productivity linked to motivation	1	1	5	86	7	4,0	0,50
Motivation at home workplace	1	2	7	83	7	3,9	0,56
Link between productivity and job satisfaction	1	0	7	68	24	4,1	0,62
Impact of praise on job interest	1	1	56	38	4	3,4	0,64
Impact of financial rewards on job interest	1	1	24	69	5	3,8	0,61
Impact of additional workplace benefits on job interest	1	4	83	10	2	3,1	0,51
Benefits of working from home perception	1	1	11	85	2	3,9	0,50
Effect of adjusted working hours on home productivity	1	0	12	86	1	3,9	0,45

4.2 Factor analysis for productivity

The results of the factor analysis for the productivity construct indicated that the data set was suitable for analysis. The KMO (Kaiser-Meyer-Olkin) test reached a value of 0.839, which confirms the adequacy of the data. Bartlett's test of sphericity showed significant correlations between the variables ($\chi^2 = 1861.847$, $df = 55$, $p < 0.05$), which made it possible to perform a factor analysis.

The results of common values (communalities) showed that most of the extracted values adequately explain the variance of most of the variables, with almost all values above 0.8.

The analysis of variance showed that the first factor that defines the factor of perceived productivity explains 81.585% of the total variance, which means that it is very strong and dominant, see Table 2. The second factor, which explains an additional 5.967% of the variance, was not selected, as its eigenvalue did not exceed 1. This indicates the one-dimensionality of the productivity construct.

Table 2. Total Variance Explained for the construct Productivity

Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	8,974	81,585	81,585	8,784	79,853	79,853
2	,656	5,967	87,552			
3	,451	4,102	91,654			
4	,283	2,569	94,223			
5	,232	2,107	96,330			
6	,176	1,600	97,931			
7	,081	,735	98,666			
8	,060	,542	99,208			
9	,044	,403	99,611			
10	,027	,247	99,858			
11	,016	,142	100,000			

The factor matrix showed that all statements were highly correlated with the extracted factor, with statements relating to motivation (0.958), benefits of working from home (0.949) and adjusted working hours (0.949) having the highest factor loadings, which means that they contribute the most to the understanding of the factor.

Cronbach's alpha for the selected factor, see Table 3, was 0.974, which indicates a high internal consistency of the measurements. This means that the statements in the survey questionnaire were highly correlated and reliably measured telecommuting productivity.

Table 3. Cronbach alfa for the productivity

Statement	Cronbach alfa
Productivity at telework	0.974

4.3 Results of Decision tree

Decision tree analysis focuses on the process of sorting data based on key variables. We start with the statement 'Need strong personal responsibility for my work', where a positive assessment leads to further analyses, while a negative assessment directs the tree to another branch where other questions are addressed. Each subsequent statement is selected based on the variable that most minimizes entropy for the selected subset of data.

Further partitioning steps illustrate the process of reducing entropy and obtaining information relevant to final decisions. This process enables more specific classifications of data, which helps to better understand the factors that affect productivity. This clearly highlights the key factors related to employee satisfaction and efficiency at work.

Based on the analysis, ten key results of the decision trees were selected, which best represent the important connections between the different variables in the survey questionnaire. This decision was based on criteria such as strength of predictive power, clarity of distributions, and relevance to the research objectives. The selected results covered a wide range of topics and questions, which provides a comprehensive insight into the researched area and provides valuable information for further analyses. Among these results, those

related to productivity are highlighted below, as they are key to understanding strategies for measuring and improving productivity in ICT SMEs, which is the central topic of the article.

Below are the key results of decision trees that are directly related to productivity. Based on these results, a question for the focus group was formulated for each individual outcome of the decision tree.

1. Productivity gain when selecting working hours among employees: the finding from the analysis emphasizes the importance of the possibility of choosing working hours for employees when working remotely, see Figure 1. Most of the respondents did not agree with the statements about limitations of mutual trust, lack of team spirit and difficult access to information. Nevertheless, they agreed that greater flexibility in working hours contributes to their productivity when working remotely. The key finding is that the ability to choose working hours is decisive for employees, as it enables them to better coordinate their professional and personal lives, which positively affects satisfaction and productivity.

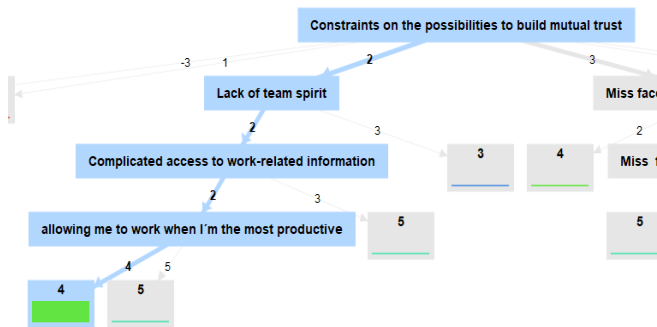


Fig. 1: Choosing working hour among employees

2. Production better at home: the finding from the model shows that most respondents feel more productive at home, see Figure 2. Respondents did not agree with the claims that working from home leads to a lack of feedback or mutual trust. On the contrary, they highlighted important factors such as adjusted working hours and higher productivity resulting from greater motivation. Working from home offers many benefits, such as better work-life balance and better time management.

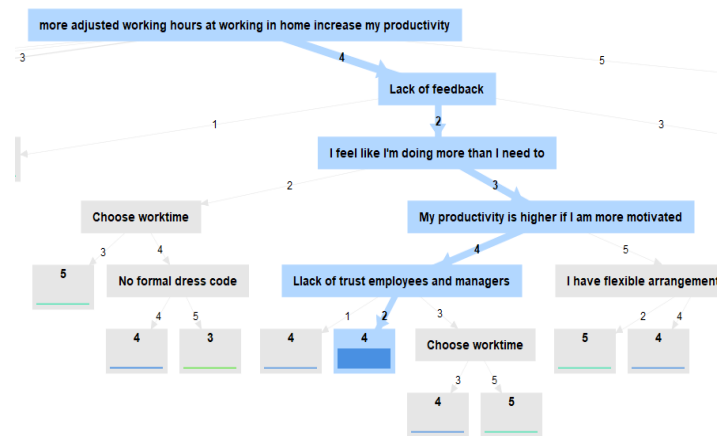


Fig. 2: More benefits contribute to productivity at working from home

No lack in feedback and personal contact with colleagues by WFH: the conclusion from the decision tree reveals that respondents do not perceive a lack of feedback and personal contact with colleagues when working remotely, see Figure 3. They emphasized that flexibility in working hours has a positive effect on their productivity. Research conducted in the wake of the COVID-19 epidemic has shown that employees have become more productive, saving time that would otherwise be spent on travel and avoiding so-called "office conversations".

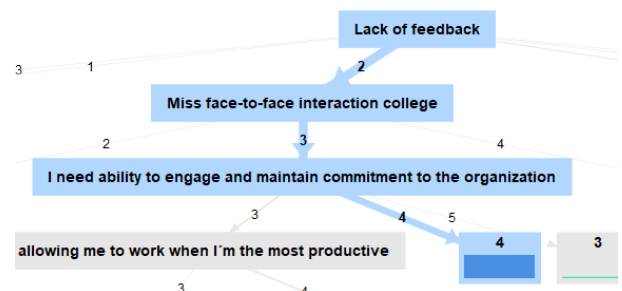


Fig. 3: More benefits contribute to productivity at working from home

Greater motivation, autonomy and freedom by WFH: the conclusion from the decision tree shows that most respondents agree that working from home gives them greater motivation, autonomy and freedom in choosing what and when they will work, see Figure 4. Motivation has a big impact on productivity, as workers who work from home often face challenges that encourage them to self-motivate.

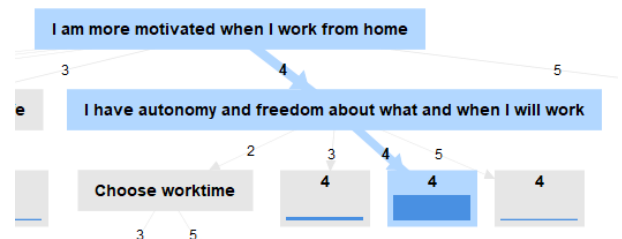


Fig. 4: Higer motivation is associated with productivity

4.4 Results of Focus group

Based on the results of the decision trees, specific questions were formulated, which were the subject of further analysis using the focus group method. The aim of the focus group was to explore in-depth employee perceptions regarding the impact of remote work on productivity and to highlight key factors associated with improving work efficiency in the ICT sector. The focus group included employees from five different IT companies, who previously also participated in the quantitative part of the research. This approach allowed employees' experiences of telecommuting, which they expressed in the original questionnaire, to be addressed in depth. In Table 4, the final results of the decision trees are presented in the right column, and the specific questions that were asked to the focus group were formulated on the left.

Table 4. Key understanding and formulated questions for further investigation

Key understanding from the data models	Formulated questions for Focus Groups
A need for a high level of digital literacy	How important is the level of complexity of digital literacy when working telework in the IT sector?
Productivity gain when selecting working hours among employees	Could productivity be higher when working telework simply because employees can set their own time and therefore actually spend less time on non-productivity?
Improvement of work-life balance	Could working telework, due to its potential benefit of improving work-life balance, contribute to the new normal of doing and accepting telework for jobs in the IT sector?
Time savings due to the lack of commuting	Maybe the reduction of mobility also has certain disadvantages, since commuting can also have some intrinsic value?
Production better at home	How should an employer in the IT sector maintain greater productivity of employees when telework?
No lack of team spirit by WFH	In the case of the IT sector, due to the very nature of the work, where employees with a certain level of personality prevail, could employees have less problems with a lack of team spirit?
No additional benefit with additional workplace in office and job interest	What are the additional benefits that would make you prefer to continue doing your work in the office? Which features of working telework could be highlighted as demonstrable advantages for an employee in the IT sector?
Greater motivation, autonomy and freedom by WFH	How could employers in the IT sector, in the case of employees transitioning to full-time working telework, take care or be sure that the employees will cooperate enough, that they will be creative enough themselves, or that they will be able to do this work for a long time without negative consequences productivity implications?
No lack in feedback and personal contact with colleagues by WFH	How should employees in the IT sector motivate themselves when working telework? And how could

	the employer motivate them to increase productivity when working telework or to maintain it?
No experience of uncertainty and no lack of personal interaction with a supervisor	What are the most important telecommuting challenges that employees in the IT sector have to deal with?

Below is a summary of the results of all the questions that were asked to the focus group.

- Importance of digital literacy: participants emphasized that a high level of digital literacy is essential for telecommuting in the ICT sector. The aspects of mastering digital tools, ensuring security and mastering information were especially important.
- Flexible working hours and productivity: most participants agreed that flexible working hours increase productivity by allowing better focus and reducing distractions during work.
- Work-life balance: participants felt that an improved work-life balance could contribute to greater adoption of telecommuting in other sectors such as finance, medicine and law.
- Reduced mobility: some participants expressed satisfaction with saving time and stress associated with commuting, while others missed certain benefits of mobility, such as a sense of independence.
- Maintaining productivity: participants highlighted regular communication between employees, updated equipment, and financial assistance in furnishing a home office as important factors for maintaining productivity when working remotely.
- Team spirit in the IT sector: due to the nature of work in the IT sector, which often involves more introverted personalities, the participants mostly did not feel a lack of team spirit, as they kept in touch with the help of digital communication tools.
- Additional benefits of working in an office: the participants highlighted the possibilities of training, seminars and financial support for acquiring new skills as additional benefits of working in an office.
- Long-term productivity in remote work: to maintain long-term productivity in remote work, participants highlighted the importance of effective communication, regular monitoring of work and occasional physical meetings to encourage creativity.
- Motivation for telecommuting: participants emphasized that they are mainly motivated by enjoying the work they do, but additional financial bonuses and provided equipment for working from home additionally contributed to maintaining productivity.
- Challenges in working remotely: the main challenges included difficulties in solving technical problems remotely, concerns about security and challenges in clearly reporting tasks completed.

5. CONCLUSION

This research has provided important findings regarding the impact of telecommuting on productivity, organizational culture and project dynamics in small and medium-sized enterprises in the ICT sector. Among the key findings, the roles of organizational culture, level of trust, time management and control mechanisms stand out, which proved to be decisive in the successful implementation of remote work. It was found

that flexibility in the choice of working hours and a better possibility of coordinating professional and private life significantly contribute to increasing the productivity of employees.

In addition, the research shed light on the difference between project and non-project organizational culture and showed that remote work in project environments requires different management and motivation strategies. In this context, Herzberg's theory of motivational factors has been found to offer an important framework for understanding telecommuting employee motivation, but can be enhanced by emphasizing greater autonomy, trust and flexibility.

The research further confirms that clear communication channels, consistent control over work tasks and regular reporting on progress, while simultaneously establishing a creative and supportive work environment, are key to the long-term success of remote work. Based on these findings, recommendations for further research are formulated, especially in connection with the development of models for measuring and increasing productivity in ICT companies, where remote work plays a central role.

5.1 Relation of Study to Previous Research in Literature

The research is based on the widely accepted Herzberg theory of motivation, which, despite criticisms and differences in research results, remains an important framework for understanding job satisfaction. Connecting the theory to today's dynamic work environments, as evidenced by Henning Bundtzen's [24] study, shows that traditional factors that used to be considered hygienic are now turning into motivators. This includes constructive feedback, a culture of open admission of mistakes and incentives for motivation.

The conducted research supports this transformation within modern work environments, especially in the context of telecommuting in SMEs in the ICT sector. The need to adapt traditional theories such as Herzberg's to understand motivation in times of increased remote work is highlighted. An accurate understanding of the motivational and hygiene factors in these environments is critical to effective strategies for measuring and improving productivity, which is also the focus of this research.

5.2 Relation to Project Management

The research makes a significant contribution to the field of project management, especially in small and medium-sized ICT companies (SMITCs), with an in-depth insight into the application of Herzberg's theory of motivation. By highlighting the differences between motivational and hygiene factors, the research highlights the need to address both aspects to prevent dissatisfaction and improve productivity within project teams.

The research highlights the key influence of organizational culture on project success. Higher levels of satisfaction and motivation among telecommuters are associated with higher productivity. Digital literacy is proving to be a key factor for success in remote work, as it improves productivity and communication. It also highlights the importance of trust in remote work environments, where trust is more important than strict control measures. Trust and autonomy have a significant impact on the satisfaction and productivity of remote employees.

The research shows changes in the organizational culture, which is increasingly moving towards project-based approaches, where projects encourage autonomy, innovation and collaboration and lead to better results. These findings have direct practical implications for project managers in SMITCs. A better understanding of motivational factors can help increase team satisfaction and productivity, ultimately improving project performance. In addition, the conducted research innovatively extends Herzberg's theory of motivation to the modern field of remote work, as it investigates how the factors of this model manifest in the context of digital technologies. This offers new insights into the dynamics of motivation, satisfaction and productivity at work, while at the same time reducing the gap between the theories and practice of project management in the digital age.

5.3 Research Study and Practice

The research provides important practical insights into the design of strategies that can help companies adapt to the dynamics of remote work. Based on the key findings, a comprehensive conceptual model of motivation was developed, designed specifically to increase productivity in remote work.

This model includes the following key elements:

1. Satisfaction factors in telecommuting:
 - Flexibility of working hours
 - Achieving work-life balance
 - Time and cost saving
 - Creating a comfortable and stimulating work environment at home
2. Key motivational aspects when working remotely:
 - Flexibility in choosing working hours
 - Satisfaction in performing tasks
 - Harmony between work and private life
 - Emphasizing the impact of working time flexibility
3. The connection between job satisfaction and motivation:
 - Greater satisfaction with remote work leads to higher employee motivation
4. Motivation as a key factor in higher productivity:
 - Increased employee motivation leads to higher productivity when working remotely.

By incorporating these elements, the motivation model provides valuable insights into the key factors affecting efficiency and productivity, particularly in remote IT companies. By recognizing the importance of flexibility, work-life balance, and job satisfaction, organizations can develop motivational strategies that foster a successful telecommuting culture and thereby contribute to greater productivity and better results.

5.4 Contribution to Science

The research represents an important upgrade of Herzberg's theory of motivation, as it introduces the modern context of working from home in small and medium-sized ICT companies (SMITCs). While Herzberg's theory has traditionally been applied in classical work settings, this study explores how the motivational and hygiene factors of this theory are reflected in modern telecommuting conditions.

With findings such as autonomy, flexible working hours, and work-life balance, the research extends the applicability of Herzberg's theory to contemporary work environments. In

doing so, the hygiene factors were upgraded with new dimensions, such as remote work, and a new motivational factor "work-life balance" was identified, which broadens the understanding of motivation and job satisfaction in today's dynamic conditions, see Table 5.

Table 5. Updated Herzberg motivational factors incorporating research findings and the phenomenon of working from home

Hygiene issues	Motivators
Company and administrative policies	Work itself
Supervision	Achievement
Salary	Recognition
Interpersonal relations	Responsibility
Working conditions	Advancement
Working from home	Work life balance

The key scientific contribution of this research is thus the upgrade of Herzberg's theory by including new hygiene factors (such as remote work) and motivators (such as work-life balance) in the specific contexts of IT companies. This research enriches our understanding of work dynamics in the modern world of remote work.

Additional key findings include:

- A need for a high level of digital literacy
- Productivity gain when selecting working hours among employees
- Improvement of work-life balance
- Time savings due to the lack of commuting
- Production better at home
- No lack of team spirit by WFH
- No additional benefit with additional workplace in office and job interest
- No lack in feedback and personal contact with colleagues by WFH
- Greater motivation, autonomy and freedom by WFH
- No experience of uncertainty and no lack of personal interaction with a supervisor

These findings highlight the close relationship between organizational culture and telecommuting effectiveness in the ICT sector, especially in project-oriented companies. The research makes an important contribution to understanding how modern work practices such as telecommuting can enrich traditional theories of motivation, while also opening up new questions for further research in this area.

5.5 Limitations of research

Although the conducted research offers important insights into the organizational culture of teleworking, it is crucial to point out that it was conducted in the specific circumstances of the COVID-19 pandemic, which had a strong impact on working conditions and teleworking practices. This unusual period may have influenced the participants' perceptions, which means that the interpretation of the results is tied to this time. Therefore, for a deeper understanding of teleworking dynamics, more studies are needed that will examine these phenomena outside of crisis situations.

The research is based on samples of small and medium-sized IT companies in Slovenia, which also limits the general validity

of the findings. In the future, it would be useful to conduct similar research in other regions and industries, and in periods when teleworking is not necessarily the result of emergencies. Extending the research to larger samples would allow a wider confirmation of the findings, whereby the impact of different communication methods on productivity and teamwork dynamics in different sectors could be further explored.

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