The Concept of an Effective Remote Work Management Model Based on Mixed-method Research

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Abstract

The article focuses on the topic of remote work, which has permanently become part of the economic landscape with the emergence of the threat posed by Covid-19. To enhance understanding of the complexity of the research problem, the article includes a theoretical construct that serves as the foundation for the entire project. This construct encompasses forces and areas identified through thorough literature review, which influence and condition effective management and organization of remote work.

Keywords: mixed-method research, management, remote work, theoretical models.

1. Introduction

Remote work, as a relatively young phenomenon (in the context of mass practice), it has only recently become possible to gather data and experiences (on a large scale), the analysis of which may lead to completely new and surprising conclusions (because the implications of long-term remote work and techniques for compensating for negatives, for example, through effective management, are still unknown) [4]. In the presented article, the authors focus on this issue, treating it as a scientific "terra incognita" - a research gap. The presented reflections concern a project that is currently underway. Its final form is therefore unknown.

The main goal of the project is to create an effective remote work management model. In order to meet the expectations of the creators, it must adhere to a set of specified initial conditions.

2. Mixed methods research and its justification for use in the considered research area

The interdisciplinary nature of the environment influencing remote work necessitates the use of complex and interconnected research frameworks [1], [7].

The results and conclusions obtained through the synthesis of different methods can be valuable only if the study and its subsequent analysis are properly planned and executed. This can occur, for example, through complementary synergy. The result is an expanded spectrum of problem perception, enrichment and increased acquisition of knowledge, greater accuracy, the possibility of improving existing analytical models, and the examination of previously elusive phenomena and processes [5], [7].

3.   Research model. Methodology

The methodology of the study pertains to actions that have already been carried out, those currently underway, and those that will take place in the future. The research model is highly complex (Figure 1). Undoubtedly, this is a very ambitious undertaking, but one that carries a significant degree of uncertainty and apprehension about the possibility of making a mistake due to the complexity of the project. Modern economy-related issues are highly complex and convergent, requiring a flexible and interdisciplinary approach to problem-solving in order to develop specific solutions characterized by a high degree of universality, reliability, and effectiveness.
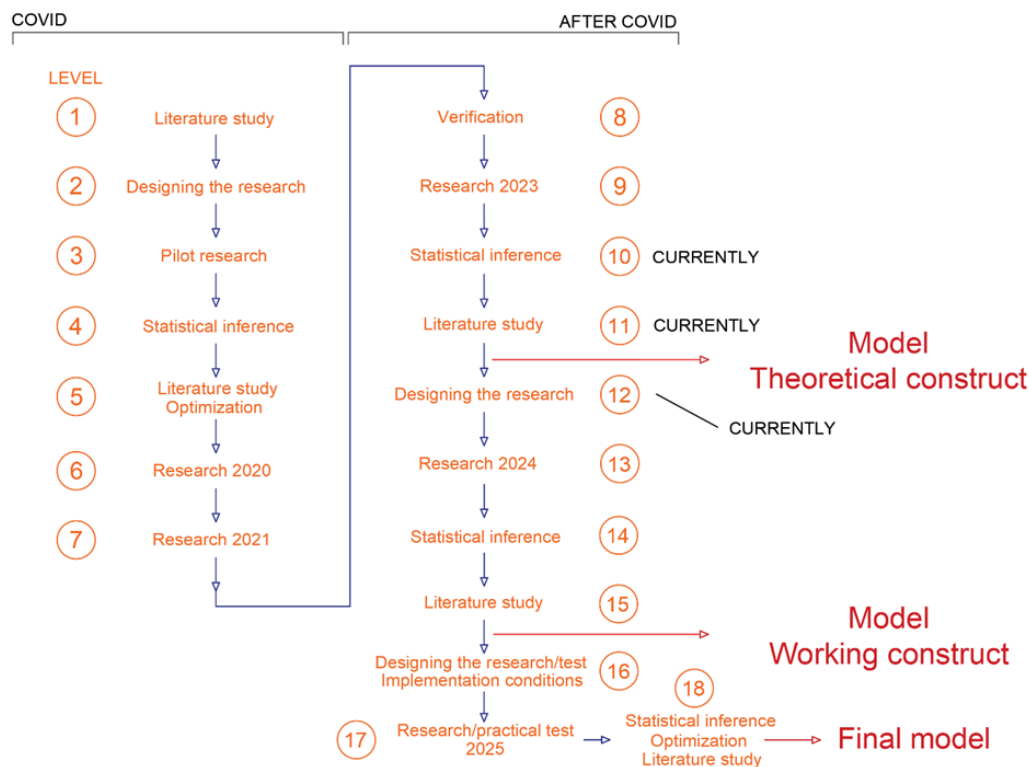

Fig. 1. Research methodology concept (Source: Own elaboration).

The research problem and ultimate goal evolved over time. Initially, the plan was to conduct research on the general conditions of remote work during the COVID-19 pandemic. These studies were conducted in 2020 (level 6) and focused on companies located in the Lubusz and West Pomeranian Voivodeships in Poland. To assess the variability of the phenomenon over time, the study was repeated in 2021 (level 7). Due to the close relationship between remote work and the COVID-19 pandemic, it was decided to examine how employers' preferences changed after the pandemic crisis. Following minor verification (level 8) of the research tools, the study was conducted again in 2023 (level 9).

The relevance and importance of the chosen topic led to the decision to significantly expand the research concept. A new ultimate goal was also adopted, namely the development of an effective and sustainable remote work management model. To meet this

challenge, work began on designing an extended study (level 12), which will take place in the second half of 2024 (level 13).

In statistical analysis, three programs were utilized: MS Excel (including Power Query), Statistica, and Power BI (primarily due to the unique features of the DAX language and efficient and visually appealing visualizations). The applied analytical techniques (including explanatory studies) are listed in Table 1.

Table 1. Techniques used in statistical inference at various levels of the project (Source: Own elaboration).

Level	Technique	Description/aim
4	Cronbach's Alpha Analysis	Test reliability analysis
	Basic statistical analysis and data aggregation	Report, checking the questionnaire's accuracy; pilot
10	Statistical Hypothesis Testing	Verification of hypotheses accuracy
	Cronbach's Alpha Analysis	Test reliability analysis
	Basic statistical analysis and data aggregation	Results visualization, acquisition of new knowledge
	Chi-square statistic, T_{xy}Czuprow, V-Cramer, C-Pearson	Statistical correlation of phenomena
	Comparative analysis of primary and secondary data	Results visualization, acquisition of new knowledge
14	All techniques and studies applied in level 10	Same goals as in Stage 10
	AHP method	Multicriteria hierarchical analysis method
	Expert study (delphi method)	To establish the weights of factors
	Coding and aggregation of data	Ability to form consistent conclusions
	CHAID analysis	Determining objects to classes of the dependent variable using explanatory variable measurements
	Scenario method	To plan remote work management strategies
	Secondary research - stepwise linear regression model	Impact of macro factors on the remote workers
	Stage in project design	-
18	A level dependent on previous research	-

4. General concept of effective remote work management model

The proposal of a general concept of an effective remote work management model is presented in Figure 2.

Approaching the issue of effective remote work management, researchers encounter several challenges [2], [8]. The first and fundamental challenge is the issue of research scale [3]. This determines the use of specific tools, the scope of the study, its duration, and other parameters. The more accurately the research subject is placed in its surrounding environment during the initial stages of work, and the interaction and influences from other groups of factors are identified, the greater the chance of ultimate success [6] (in the form of a high level of quality and accuracy of the developed solution).

5. Conclusion

The assumptions and goals of the ongoing project have not yet been published anywhere (although work is underway to publish a monograph summarizing the research from 2000, 2001, and 2003). Therefore, this article serves as an invitation to constructive criticism and discussion of the presented ideology. This will allow for potential corrections and improvements and broaden the authors' awareness. As a result, in the near future, the final "product" – the model of effective remote work management – will have the chance to become a widespread, well-known, and generally acceptable paradigm in management sciences.

At this point, two significant limitations should be noted. Firstly, due to constraints in volume, the authors' concept cannot be presented in a broader context with a detailed description of all the details and stages. Secondly, the project is a "living organism" that changes its form under the influence of new knowledge. These changes are highly desirable and justified from a scientific point of view, but they may introduce some confusion and inconsistencies for the reader in terms of continuity and coherence of content in the currently created and future publications. The solution to this dilemma will be a comprehensive summarizing monograph, which is likely to be published in 2026. It will contain extensive and exhaustive explanations regarding the changes in the design of individual studies and project stages, which should clarify any doubts.

In mixed-methods research, selecting a specific tool and justifying its superiority over

other recognized methods with similar applications is extremely difficult. Therefore, in most cases, the authors abandoned lesser-known methods with which they had less experience (e.g., ELECTRE TRI), replacing them with others (e.g., AHP). Sometimes, they used several substitute methods (T_{xy}Czuprow, V-Cramer, C-Pearson) to compare results and discard extreme indications, thereby achieving more precise and reliable outcomes.
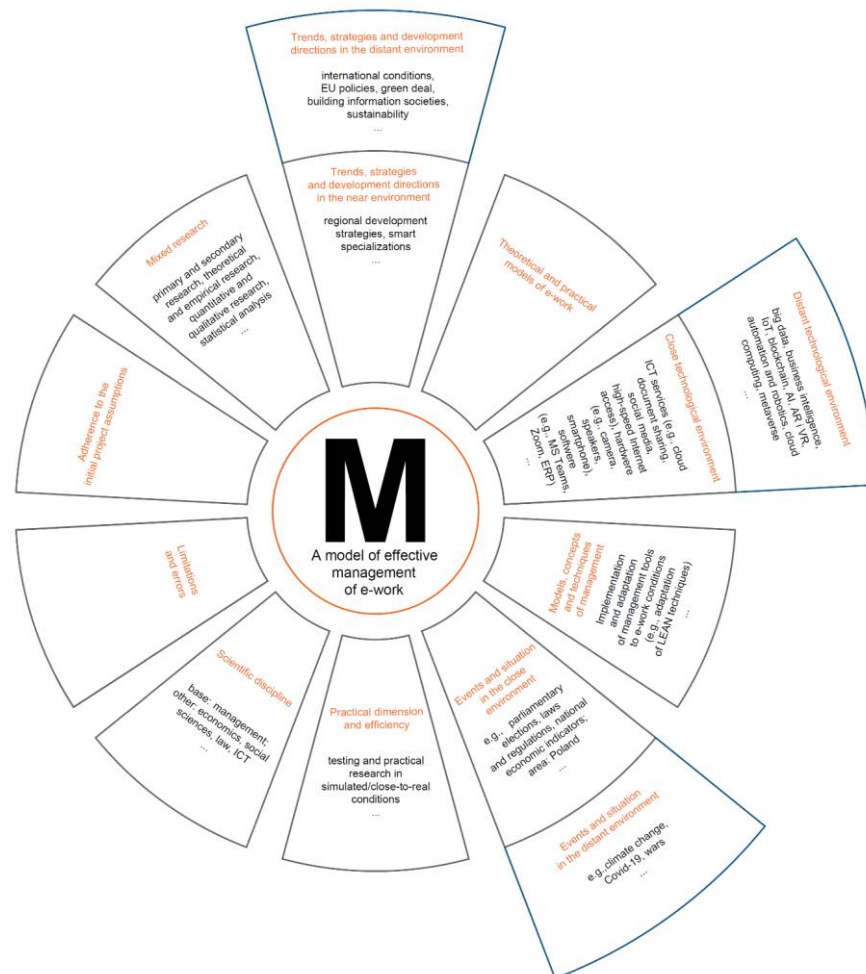

Fig. 2. The general concept of an effective remote work management model (Source: Own elaboration).

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