

# The Importance of Managerial Skills Transfer Management for Organizational Success

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## Abstract

The main objective of the research is to improve the management of the transfer of managerial skills, with a projection on the Romanian economy. The main own contribution in this direction is the development of a methodology to approach the *management of the transfer of managerial skills* (MTMS) to assist decision-makers by structuring decision-making problems, identifying the correspondences between the types of problems and the modeling methods and algorithms for solving them. The realization of this methodology requires several own contributions aimed at theoretical and practical aspects of the studied theme. At the microeconomic level, both theoretical research and empirical studies have highlighted certain objectives specific to each class of people involved in MTMS. The main objectives of the shareholders are to change the value of the shares and dividends as a result of the *transfer of managerial skills* (TMS). From the point of view of managers, their objectives consist in increasing the competitiveness of the organization, developing their own career and personal development, goals materialized from a quantitative point of view in changing the company's profit and personal net income. The objectives of the employees related to MTMS mainly refer to the improvement of the working environment and personal advancement possibilities. For organizations, TMS has the following main objectives: winning new markets, developing and perfecting products and services, attracting funding sources, increasing revenues, securing specialized human resources, diversifying activity, successfully implementing the organization's strategy, and increasing flexibility. This research study supports organizations and managers who wish to engage in a process of improving managerial skills through the transfer of specialist knowledge from organizational, personal or academic sources. The main contributions of the article consist in improving the management of the transfer of managerial skills by developing a methodology for approaching and solving decision-making problems according to their typology.

**Keywords:** managerial skills, transfer, management, organizations

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## Introduction

Ensuring a high level of managerial skills is a determining factor of macroeconomic development. The direct objectives of management skills transfer management (MTMS) are to improve the quality of administration, public policies and development strategies adopted. The indirect objectives of MTMS refer to increasing the productivity of companies, the level of innovation and therefore stimulating economic development.

At the microeconomic level, both theoretical research and empirical studies have highlighted certain objectives specific to each class of people involved in MTMS. Carriger and Quirk (2018) concluded that the main objectives of shareholders are changes in share value and dividends as a result of achieving TMS. From the point of view of managers, their objectives consist in increasing the competitiveness of the organization, developing their own career and personal development, goals materialized from a quantitative

point of view in changing the company's profit and personal net income. The objectives of the employees related to MTMS mainly refer to the improvement of the working environment and personal advancement possibilities. For organizations, the transfer of managerial skills (TMS) has the following main objectives: winning new markets, developing and perfecting products and services, attracting funding sources, increasing revenues, securing specialized human resources, diversifying the activity, successfully implementing organization strategy and increased flexibility (Andriessen, 2004). The development of specialized knowledge and skills, including managerial skills (MS), is stimulated by the international exchange of information, which gives rise to a process of combining knowledge obtained from the international environment with local experiences. Starting from the theoretical models for the analysis of international alliances, an econometric model was created that tests the relationship between the regional research-development activity, which includes the development of managerial skills and the effects of the international flow of knowledge through foreign direct investments, the mobility of researchers from academia and access to global information.

Frank (2022) is of the opinion that the management of the transfer of managerial skills (MTMS) represents a sequence of decisions, which correspond to a sequence of problems. Starting from the MTMS stages, a typology of TMS managerial problems was elaborated. After formulating managerial problems generated by forecasting, planning, organizing and evaluating action strategies, correspondences were created between managerial problems and their modeling methods and solving algorithms were identified, realizing interferences between problems, modeling methods and methods of solving. These methods were also experimented and applied on case studies from Romania, demonstrating possibilities for improving MTMS in economic practice. Hays and Erford (2022) believe that the transfer of managerial skills (TMS) is a particularly complex process, both through the influence of the human factor and through the important effects it has on the development of organizations. Within MTMS there is a need for methods to simplify this complexity so that the best solutions can be identified for the problems that arise at each stage of MTMS. The most modern and effective method of reducing complexity is mathematical modeling. Thus, modeling methods were identified corresponding to each main class of problems that appear within MTMS. Among these modeling methods, those methods that proved necessary for the analysis of representative case studies from empirical research were detailed and applied: methods for planning products destined for TMS, methods for planning the transfer of knowledge trained in this process, planning human resources, the allocation of resources on multiple objectives aiming at a degree of simultaneous or total satisfaction of the objectives, problems of flexible optimization of TMS and problems of developing the expansion strategy of organizations.

## 1. Review of the scientific literature

Managerial skills are a strategic asset, both at the macroeconomic level and at the microeconomic or individual level (Gilbert, 2007). The development of specialized knowledge and skills, including managerial skills (MS), is stimulated by the international exchange of information, which gives rise to a process of combining knowledge obtained from the international environment with local experiences (Addicot et al., 2006). Starting from the theoretical models for the analysis of international alliances, an econometric model was created that tests the relationship between regional research-development activity, which includes the development of managerial skills and the effects of the international flow of knowledge through foreign direct investment, mobility of academic researchers and access to global information (Donahue, 2022). At the microeconomic level, managerial skills are considered the most important strategic advantage of a company (Benbasat and Zmud, 2013). Moreover, organizational theory defines a strategic good as one that simultaneously satisfies the following characteristics: it is rare, valuable and impossible to imitate or substitute for competitors (Morey et al., 2002). Starting from this definition, intellectual capital is considered the only strategic asset, being the only resource that cannot be perfectly imitated by other organizations due to the dependence on the environment in which it is created.

TMS is a process that involves the assimilation and exploitation of specialized information, which can be analyzed through communication theory. The main components of this process are: the source of the transfer (the company, organization or person from whom the skills are taken), the content of the transferred knowledge (by decoding the skills and transforming them into transmissible information), the method of communication, the beneficiary of the transfer (the stage of assimilation and transformation knowledge transferred into managerial skills), as well as the organization that provides the framework for the exploitation of new skills (Booker et al., 2018). The relationship between these components of TMS is often marked by conflicts of interest and multiple influencing factors (Elliot, 2018). Depending on the different components of the transfer process, the typology of TMS involves several classification criteria, among

which we mention the delimitation of TMS according to the source of information in the transfer in: inter-organizational, intra-organizational and extra-organizational TMS (Armstrong and Murlis, 2018). The transfer of managerial skills is a human process, in which the degree of assimilation and fruition of managerial skills depends to the greatest extent on the degree of internalization and combination of knowledge by the beneficiary persons. At this level, the process of transfer of managerial skills resembles a biological process (Pfeffer, 1994). From this perspective, an analysis model based on neural networks has been proposed, which evaluates and predicts MTMS results in conditions where the internal process of knowledge processing is not known in detail (Andreica, 2011). This model can be applied to the problems of classifying and evaluating human resources, forecasting managerial performances, identifying those managerial knowledge that can provide competitive advantages, perfecting a data path within MTMS (Barney, 2016).

The management of the TMS process involves the exercise of the managerial activities of forecasting, planning, organization, control and evaluation. Within each activity, the main objectives, the elements of the decision-making matrix, as well as the most frequent problems that managers may face were identified (Sadler-Smith et al., 2003). The exploitation strategies of the new MSs and their transformation into competitive advantages were also identified.

## 2. Research methodology

This case study supports CFR staff trainers by identifying the main factors influencing promotion and the level of skills assimilated in foreign language courses for staff in management positions, as well as staff involved in European transport coordination. This study answers the question: what is the general profile of people who successfully pass the language refresher courses organized by the National Center for Railway Qualification and Training?

The National Railway Qualification and Training Center (CENAFER) is established by taking over the activity of the Romanian Railways Staff Training and Qualification Centers (CFR) in Bucharest, Craiova, Timișoara, Cluj, Brașov, Iași, Galați and Constanța, which provided staff training CFR since the beginning of the 20th century. The legislative framework that governs the operation of the Center is given by the Ordinance of the Government of Romania no. 58/2004, approved by Law no. 408/2004, with subsequent amendments and additions brought by Law no. 329/2009. The center has the status of a public institution with legal personality and is subordinate to the Ministry of Transport. CENAFER is designated as the specialized national body of the Ministry of Transport that ensures the training, qualification, improvement, verification and professional authorization of Romanian Railways staff, as well as the improvement of the administrative staff of the Ministry of Transport, having several decades of experience in this activity.

Part of the training and specialization courses offered to CFR staff are foreign language courses: technical and specific notions of English, French, German and Spanish. We mention the fact that these knowledge are components of managerial skills, the courses being attended by personnel who carry out activities specific to the development of rail transport and who wish to promote to management positions serving international transport routes (Paris, Vienna, Thessaloniki and Venice), to work at border points, in stations with international traffic or in national means of transport with information communicated in foreign languages. Another category of beneficiaries is represented by the executive staff of the Ministry of Transport who wish to promote and/or participate in European-level working meetings (ERA and UIC) or international conferences. Most of the beneficiaries of the four courses come from the CNCF SA, SNCF-CF SA and SNCF-MS structures.

Considering that these courses are for improvement, only students who can prove specialized knowledge and who have been recommended by their superiors after at least three years of experience in the CFR are admitted. The content of the courses is technical and includes specialized language for the railway, economic, legal, technical and administrative fields. Learners are divided according to the level of training they declare at registration into pre-intermediate, intermediate and advanced level groups. The courses are fully funded by the Ministry of Transport and are of great importance both for job stability, for professional promotion and for increasing the salary level. Course promotion brings a 10% increase in salary for staff in central positions, while operational service staff gain senior positions that bring an average increase in income of 30%.

The duration of each course is 40 hours for executive staff and 80 hours for staff with central functions (lawyers, economists, technicians and administrative staff). The courses run for four hours a day from Monday to Friday, and the trainees benefit from being taken out of production for the duration of the course. Beneficiaries can have the following categories of functions, specific to CFR:

1. *of execution (40-hour courses)*, whose managerial skills are perfected in order to occupy higher hierarchical positions: conductors (who check tickets on the train and provide personalized information); cashiers (who sell tickets in stations and train stations and carry out related activities); warehouse workers (work at CFR Marfa border points); informers (they work in large stations, in hubs and stations with international traffic; they are responsible for transmitting announcements through the station to the public).

2. *driving (80-hour courses)*: economists; lawyers; technicians; administrative staff.

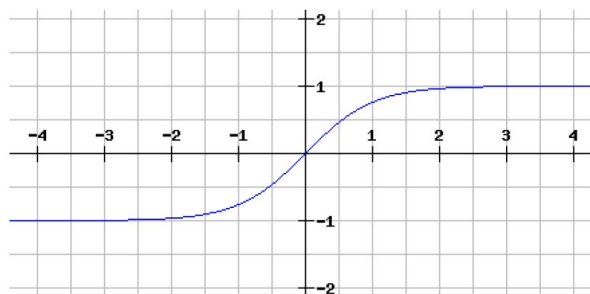
The dependent variable of the model is the probability of language improvement courses, both in pass/fail form and on the grade scale. Following the semi-structured interviews conducted with the Head of Department of the CFR staff trainers, several factors emerged that could have an influence on the outcome of these courses, factors that were included in the model as independent variables as follows:

1. Form of the course: French, English, German or specialized Spanish;
2. Course duration: 40 or 80 hours;
3. Gender of beneficiaries: male or female;
4. Age category: 20-24 years, 25-30 years, 31-40 years and 40+;
5. Ethnicity: Romanian, Roma, Szechuan/Saxon, Hungarian;
6. Geographical area of the workplace: urban or rural;
7. Function: conductors, storekeepers, cashiers, informants, economists, lawyers, technicians, administrative functions;
8. General level of training: high school, bachelor's degree, master's/doctorate;
9. Level of initial language skills: pre-intermediate, intermediate, advanced.

### 3. Research results

In building the model, we split the data set (100 individual observations, with no missing data, from October 2022 ÷ February 2023) into a training group and a test group, using random numbers to assign observations to groups and letting the model use as many observations as it needs to train. The training modality selected was online, as it is most appropriate if the independent variables could be correlated (general level of education and level of language skills). Considering the specifics of managerial skills transfer processes, in which the absorption of information is achieved gradually, the transmission function was approximated with the hyperbolic tangent function (Figure 1), represented as follows:

$$f(u) = \frac{e^u - e^{-u}}{e^u + e^{-u}} \quad (1)$$



**Figure 1. Transfer function approximation (hyperbolic tangent)**

*Source: graph made with the Matlab application*

The model was tested in two variants, using different forms of the dependent variable. In the first phase, the importance of the independent variables for obtaining a certain grade was tested. These results correspond to the evaluation stage of transferred Managerial Competences. The marks in the end-of-course exams were calculated on a scale from 0 to 10, with 10 being the maximum mark. The model reached a 1-hidden-layer, 2-unit equilibrium using 72% of the observations for learning and 28% for testing. After two

consecutive steps without the model error (calculated as the sum of the squares of the deviation of the results) decreasing, the learning process was completed with the following result (Table no. 1):

**Table no. 1. Summary of the TMS evaluation model**

Training	Sum of Squares Error	1.257
	Relative Error	.185
	Stopping Rule Used	1 consecutive step(s) with no decrease in error <sup>a</sup>
	Training Time	0:00:00.02
Testing	Sum of Squares Error	1.167
	Relative Error	.377
Dependent Variable: Note		
a. Error computations are based on the testing sample.		

*Source: data processed with the SPSS application*

As can be seen, the model error is relatively small. The importance of the analyzed factors on obtaining a certain grade on the exam is shown in Table no. 2:

**Table 2. Factors of influence in the evaluation of transferred managerial skills**

Independent Variable Importance		
	Importance	Normalized Importance
Course duration (hours)	.016	7.3%
The gender	.045	20.8%
Age	.185	85.3%
Area of origin	.032	14.8%
Function	.178	82.1%
The level of general training	.217	100.0%
Initial language level	.199	91.9%
Course	.051	23.4%

*Source: data processed with the SPSS application*

Of all the influencing factors analyzed, the level of general schooling is essential for obtaining a certain level in the final examination of the skills acquired in the management training courses (100% importance). This result corresponds to expectations, due to the fact that these courses are of a theoretical nature and therefore correspond to the passability level in general education. The initial level of language knowledge, age and position held also have a decisive influence. At the opposite pole is the length of the course, a surprising result that we attribute to the fact that the requirements for shorter courses are lower than those for 80-hour courses. Also, the area of origin and the gender of the beneficiaries have very little importance in predicting the final passing grade.

The second method of analyzing this form of skills transfer is to test the link between the independent variables mentioned above and the pass rate in the exam. In this variant of the model, which analyzes the success of TMS, the dependent variable is of binary form, which allows us to highlight the percentage of correct predictions made by the model. The model is similar to the one above, with the only difference that only 68% of the variables were needed for learning and only one hidden layer for information processing (Table no. 3 and Table no. 4).

**Table no. 3. TMS analysis model**

Model Summary		
Training	Sum of Squares Error	5.701
	Percent Incorrect Predictions	8.8%
	Stopping Rule Used	1 consecutive step(s) with no decrease in error <sup>a</sup>
	Training Time	0:00:00.01
Testing	Sum of Squares Error	2.169
	Percent Incorrect Predictions	6.3%
Dependent Variable: Rezultat		
a. Error computations are based on the testing sample.		

*Source: data processed with the SPSS application*

**Table no. 4. Analysis model of TMS results**

Classification				
Sample	Observed	Predicted		
		.0	1.0	Percent Correct
Training	.0	11	4	73.3%
	1.0	2	51	96.2%
	Overall	19.1		
	Percent	%		
Testing	.0	2	1	66.7%
	1.0	1	28	96.6%
	Overall	9.4%	90.6%	93.8%
	Percent			

*Source: data processed with the SPSS application*

It can be seen that the model error is much smaller, with only 6.3% of the values predicted incorrectly. From the details of the predicted values, we note that the error is larger for the category of learners who did not pass the course, which is related to the fact that there were relatively few observations in this category (18%). At this assumed level of error, the influencing factors on the exam pass rate that are of particular importance are: age and initial skill level, which provides a slightly different perspective from the first model (Table no. 5):

**Table no. 5. Factors influencing the success of TMS**

Independent Variable Importance		
	Importance	Normalized Importance
Course	117	46.5%
Course duration (hours)	.082	32.5%
The gender	.105	41,6%
Age	.251	100%
Area of origin	.058	23%
Function	.080	31.8%
The level of general training	.131	52%
Initial language level	.199	91.9%

*Source: data processed with the SPSS application*

#### 4. Discussions

By comparing the two models, the following conclusion can be drawn: if the general level of theoretical training has a decisive influence on the level of absorption of new MSs, age is the most important factor that explains the success or failure of the TMS process. In general, it is observed that personal factors such as the individual's gender, ethnicity or age have a much greater importance in promoting the TMS process, but do not influence the results obtained in the assessment of MS as much. By means of the model based on neural networks with hyperbolic tangent function and online training method, the main personal factors that ensure a high level of performance in TMS were analyzed. The results of the model show that the results of the evaluation of the transferred managerial skills (MS) are mainly determined by professional factors: the general level of schooling, the level of language skills, the age and the function of the beneficiaries. The success of the TMS (pass rate in the final test) is, however, influenced more by personal factors: age, type of course, gender of the beneficiaries (male or female) and ethnicity.

The improvement of managerial skills that drive the economic development of companies and regions in Romania largely depends on research carried out on the economic and human generative mechanisms of MTMS.

Thus, among the identified future research directions, we highlight the following:

- ✓ such as the application of the macroeconomic model elaborated in this paper to other regions of the global economy and to other sectors of activity, these conclusions being of interest to all geographic regions or fields of activity that have a development model based predominantly on low costs and less on specialized skills;

- ✓ applying TMS modeling methods to other types of problems encountered in practice;
- ✓ creating a compendium of recommendations and a comparative study of the best MTMS strategies.

Regardless of the activity carried out, managerial skills determine the direction and pace of development of an organization. At the macroeconomic level, the development of managerial skills in the public and private environment has a decisive influence on sustainable economic growth. At the microeconomic level, improving managerial skills represents an important competitive advantage, determines the economic results of organizations, the profitability of investments and the quality of the work environment. From an individual point of view, the transfer of managerial skills ensures the professional and personal development and prestige of people with management positions.

## Conclusions

The transfer of managerial skills is a process in which the human factor plays an essential role. This human component, which includes psychological, subjective, relational, circumstantial aspects cannot be ignored, but it is also very difficult to model through a classic economic model, which are based on stable relationships between the included variables. The use of neural network-based models is one approach that can successfully deal with such aspects of MTMS, in order to draw the contours of the analyzed situation based on data obtained from multiple previous iterations of the process.

The major disadvantage of this method is that the model on which the interaction of the variables is based is not known, but this is also the main advantage: if we knew the relationships between the variables, we could use classical, more explicit mathematical models. However, in the author's opinion, the results obtained from estimates whose foundation is not clear at first glance are still much more frequent and generally accepted in reality with the same ease with which we would withdraw our hand from a needle without calculating them a priori diameter and without knowing for sure how one gets from tactile impulse to discomfort. That is why we believe that models with a strong empirical, experimental character, such as those based on neural networks, should not be marginalized, but on the contrary, we can hope that economic science will progress more and more in explaining and including the complexity of the human factor in the models that elaborate.

In this sense, collecting as much statistical data as possible is essential for determining the level of correctness of the models. This information – which can take the form of macro-data – thus takes on much greater importance as economic theory is entrained in the evolution of mainstream technology. Organizations able to systematize and harness this raw individual information can better anticipate changing societal preferences and thus base their decisions on more secure premises. The presentation of the analysis model in this chapter, located at the border between the biological and social sciences, aims to improve managerial skills to give organizations the opportunity to turn into competitive advantages the opportunities offered by detailed information about potential consumers - information that is increasingly accessible with the development of social media and data storage capacity.

In conclusion, managerial skills are often analyzed only through the lens of a qualitative approach. This perspective creates uncertainty and difficulties in securing the resources needed to implement such a process. TMS is a process that requires significant financial, human and organizational costs, but it is difficult to make a calculation of the return on investment in PTMS if research in the field only provides qualitative and strategic factors for evaluating TMS. The modern management of the transfer of managerial skills also needs quantitative models to substantiate decisions during each stage of this process. The present research emphasizes the continuous need for improvement of managerial skills and wants to stimulate TMS through a systemic, transparent analysis of the decision-making process, as well as through the development of quantitative methods of analysis aimed at providing decision-makers with comparable indicators for the required investment and the results obtained through TMS.

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