ABSTRACT

The objective of the article is to create theoretical and methodological prerequisites for substantiating management methods of transport organisations within value chains and increasing their efficiency by preventing possible contradictions and conflicts when fulfilling an order for the end consumer of services and/or products.

The hypothesis of the study is associated with the assumption that it is possible to determine the specific quantity and quality of methods for managing transport organisations in value chains and identify the relationship between them, which will allow the formation of an integrated management system for chains and various modes of transport.

The methods of classification, synthesis, analysis, induction, and deduction were chosen as research methods while binary matrices formed based on classification features of objects and their dichotomies were used as a tool.

The study has resulted in substantiation of the content of the resource approach to the justification of the methods of managing a transport organisation; development of a classification of administrative, economic, organisational, and socio-psychological methods of managing this organisation; revealing interrelations of methods, principles, and approaches to management of objects of social and economic systems.

The implementation of the obtained results will reduce the likelihood of occurrence of contradictions in the value chains by harmonising the content of the systems managing its links; create prerequisites for reducing the lost profits of this type of chains as well as time and costs for making and implementing management decisions; and for responding in a timely manner to the unique requirements of end users of products and/or services.

Keywords: transport organisation, system, goal, task, principle, method, approach, function.

Acknowledgments: the article was prepared in accordance with the state assignment of the Ministry of Education and Science of Russia for the Institute of Economics of the Ural Branch of the Russian Academy of Sciences for 2023.


The text of the article originally written in Russian is published in the first part of the issue.
INTRODUCTION

Transport organisations are key links in supply chains, ensuring the coordination of supply and demand in different types of markets. Effective management of a transport organisation focused on creating value for end users of services and/or products is its most important competitive advantage. Therefore, special attention should be paid to design, formation, and optimisation of the management system of a given organisation. This management system, in particular, is understood as «a set of interrelated or interacting elements that establishes policies and goals and that allows achieving these goals in a safe, efficient and effective way» [1].

Management systems traditionally include a subject (who controls?) and an object (who or what is controlled?). In the first case, we are talking about a totality of an orderly hierarchy of persons who make and implement management decisions, and in the second case, about persons involved in implementation of these decisions, who are in certain relationships and who process resources in accordance with the rules of business processes. If we recognise that people are the most valuable object of management [2], then the «human resource system» [3] should be singled out as part of the organisation’s management system, the component of which is «human resource management practice (HRMp)» or «the process of attracting, motivating and retaining of employees to ensure the survival of the organisation» [4]. There are some differences between the terms «management system» and «human resource system», therefore, in the future, to eliminate the double interpretation of a particular term related to management of not only human resources, but also the entire organisation, the term «management system» will be used.

The interaction of the subject and object of management involves formation and periodic updating of the components of the management system of a transport organisation, the composition of which and relationships within which are diverse. Among other things, they include management methods [5] or «methods of influencing teams or individual workers to coordinate their activities in the production process» ¹. There are also some differences between the terms «management methods» and «human resource management practices». Therefore, in the future, the term «management methods» will be used as the main term.

Many researchers emphasise the importance of correct application of organisation management methods and confirm their high efficiency, for example, the authors of [6–14]. However, not all experts are sure that good personnel management affects the performance of an organisation, including, for example, the authors of [15–17], referring, among other things, to the lack of empirical data on this issue [4].

Finding out the reasons for insufficient effectiveness of management methods is the topic of a separate study. Nevertheless, it is already possible to put forward a hypothesis about the fuzzy structuring of transport organisation management systems, which provokes ambiguity and unreasonable diversity not only of their components, but also of the relationships between them. The above problem is seriously complicated when it comes to value chain management, which involves design and use of multiple organisational management systems, as well as their integration to better meet the requirements of end users of services and/or products.

The article proposes a systematic approach to solving this problem, which allows not only to integrate methods, principles and approaches to management of transport organisations and value chains, but also to create prerequisites for improving the theory and methodology of human resource management inside and outside the organisation.

REVIEW OF LITERATURE SOURCES

There are different points of view on the composition and structure of the organisation’s management system. According to A. S. Gutterman, the components of this type of system include «policy, planning, implementation and operations, performance evaluation, improvement and management review» ² [18]. If we conduct a preliminary analysis of the list of these components, we can note the following:

1) The list includes the following heterogeneous objects: three management functions (planning, implementation and management review); business process components (operations); management tool


² Some citations represent reverse translation into English from the author’s text in Russian. – Ed. note.
Main components of human resource management practices [compiled by the author]

<table>
<thead>
<tr>
<th>Authors</th>
<th>Components of human resource management practices</th>
</tr>
</thead>
<tbody>
<tr>
<td>J. Purcell [20]</td>
<td>«career development and promotion opportunities; learning opportunities; impact on work and problems; involvement and communication; performance management and evaluation processes; balance between work and personal life»</td>
</tr>
<tr>
<td>P. Boselic, G. Dietz, C. Boon [22]</td>
<td>«training and development, wages and rewards, and performance management»</td>
</tr>
<tr>
<td>G. Dessler [23]</td>
<td>«determining human resource needs, selection, recruitment, training, remuneration, evaluation, as well as concern for labour relations, occupational safety and health, equity issues»</td>
</tr>
<tr>
<td>N. J. Foss, K. Laursen, T. Pedersen [24]</td>
<td>«delegation of responsibility, such as team production; knowledge incentives such as profit sharing, individual incentives and incentives for knowledge sharing; internal communication encouraged, for example, by practices related to knowledge sharing or job rotation; employee training, both internal and external; recruitment and retention, such as internal staff promotion policies»</td>
</tr>
<tr>
<td>K. Laursen, N. J. Foss [25]</td>
<td>«Practices including: (a) delegation of responsibility, (b) knowledge stimulation; (c) knowledge sharing; (d) employee training; (e) recruitment and retention»</td>
</tr>
<tr>
<td>R. Sepahvand, R. B. Khodashahri [27]</td>
<td>«recruitment and selection, training and career development, performance appraisal, compensation and benefits»</td>
</tr>
</tbody>
</table>

(policy); management task (implementation), as well as a statement of the results obtained (efficiency assessment).

2) This list can be clarified and supplemented. For example, motivation, control, integration, regulation can be added to management functions; regulations and a system of motivation can be added to management tools, sustainable development can be added to management tasks, etc.

3) The components of the management system can form logical sequences and have clear relationships. For example, planning is used first, then policy, then implementation and performance evaluation.

4) The management system includes components of different levels. For example, functions, like business processes, consist of operations, while policies, in turn, are part of the organisation’s strategy.

In the above list of management system components, as you can see, the term «human resources» is not used. Therefore, it is necessary to identify the components of the practice of human resource management, which, according to M. Armstrong, comes down to «informal approaches used in managing people» [3]. In addition, one should distinguish between the practices of working with human resources which includes «the process of creating a pool of suitable candidates, recruiting individuals, selection and training» [19] and the practice of human resource management.

Variants of the main components of the practices of human resource management are given in Table 1.

Thus:

1) There is a significant variety of points of view on the content of the components of human resource management practices, while the authors, as a rule, do not provide sufficient arguments to single out these and not other components.

2) Each point of view differs from other points of view by a different number of proposed components of human resource management practice, while this number is also insufficiently substantiated.

3) The components proposed by the authors in specific management situations are relevant to varying degrees, which implies their ranking. Perhaps, in one organisation, first, it is necessary to improve the system of remuneration and rewards, and in another, of staff training.

4) The use of the above components involves different management methods. So, for example, delegation of responsibility, communications, career development, performance appraisal are
administrative methods of management; wages, rewards as well as compensations are carried out through economic methods, and self-managed teams, work-life balance, reduction of status differences and practices related to knowledge sharing or job change are promoted through organisational methods. If we consider the socio-psychological factors associated with the management of the organisation [28], then a group of socio-psychological methods should be attributed to a separate group of management methods. The groups of methods listed above were proposed by O. Nicolescu [5] and A. Ya. Kibanov.

As a result, the following theoretical and methodological aspects of the study can be formulated:

1. The components of the management system can be ordered based on appropriate classification features, which will greatly facilitate their design and implementation in the activities of a particular organisation and value chain.

2. Management methods cannot be effective if they are used in isolation from other groups of management system components, such as goals, objectives, principles, approaches, and functions [29], which requires a systematic approach to solving this problem.

3. The groups of components of the organisation management system listed above should become the basis for design, formation, and optimisation of various types of chain management systems, including value chains.

METHODOLOGY

To study the above aspects of the study, qualitative methods are needed [30–33] and, first, the classification method, which involves:

1. Substantiation and use of qualitative features characteristic of the object of study, as well as environmental factors and their dichotomies; the number and sequence of application of these features is established based on two basic methods related to clarifying the essence of the object of study: analysis of literary sources and a sociological survey of specialists.

2. Creation of logically substantiated combinations of dichotomies of qualitative features of the object of study and environmental factors that contribute to identification of not only the states of this object, but also the phases of its development, depending on the task being solved by the researcher.

3. Formation of binary matrices, which are based on combinations of the above qualitative features and dichotomies of the object of study and environmental factors, allowing to substantiate \(2^x\) variants of this object, where the number \(\langle 2 \rangle\) indicates the number of dichotomies, and \(x\) characterises the number of qualitative features used.

4. For processing the results of the study with the help of computer software, each dichotomy of a qualitative trait can be indicated by the codes \(\langle 0 \rangle\) or \(\langle 1 \rangle\). At the same time, the code \(\langle 0 \rangle\) does not reflect the absence of a dichotomy but emphasises its position opposite to the dichotomy with the code \(\langle 1 \rangle\).

5. Operations related to selection of qualitative features and dichotomies of the object of study and environmental factors, as well as the study of their possible combinations, are used in the descriptor method of research, and operations that help to identify the states of a given object or phases of its development are performed within the facet method of qualitative research.

Binary matrices make it possible to develop a classification of variants of the object of study within the framework of such a research method as analysis. Based on these options, it is possible to form more complex options for the object of study based on synthesis. Any combination of object variants obtained with the help of binary matrices is processed based on deduction and induction methods.

Thus, the specific features of qualitative research listed above make it possible not only to substantiate the number of options for the object of study and their combinations, but also to establish the relationship between them using the relevant qualitative features and their dichotomies, in contrast to those options and their combinations that were proposed and studied previously.

RESULTS

The use of the research methods outlined above makes it possible to clarify the content of the main components of the management system of the organisation and value chains. To do this, it is advisable to use the following relevant qualitative features and dichotomies: «tools for implementation of the organisation’s mission» – guidelines (what does the organisation seek to achieve?), forms (with what help this «what?» will be achieved); the mechanism (how will this «what?» be achieved),
as well as «the stages of the organisation’s mission implementation» (planning and execution). The joint use of these features and dichotomies makes it possible to substantiate the list of components of the organisation’s management system: goals, objectives, principles, approaches, methods, and functions (Pic. 1).

Information in Pic. 1 allows drawing the following conclusions:

1) The components of the management system apply not only to the organisation, but also to the following objects of its external and internal environment: (a) a person applying for a position in this organisation; (b) an official; (c) a division of the organisation; (d) value chain; (e) the end user of services and/or products (Pic. 2).

2) When managing these objects, it is necessary to consider not only the content of the values they want, but also the need to coordinate values with the priority of the values of the end user, as well as a possible change in these values under the influence of environmental factors.

3) When managing the organisation, it is necessary:
   (a) To form these components considering the values of this organisation.
   (b) To structure and to formalise the components of the management system of a given organisation by departments and positions of the management system.
   (c) To organise a recruitment of individuals to fill positions, considering the values of both the organisation and these individuals.
   (d) To focus on creating value for the end consumer, which may require adjustments to the existing management system of the organisation.
   (e) To coordinate the components of the management system with the components of management systems of adjacent links in the value chain. The mechanism of formation of the management system for the value creation channel, including the management systems of the supplier organisation \( S \) and the consumer organisation \( C \), is shown in Pic. 3.

Focus of the links of the chain on value creation involves development of the concept of value management, which provides for harmonisation of the values of adjacent links in the chain, one of which is a supplier, and the other is a consumer of products and/or services. As a basis, it is possible to use the concept of value management within the organisation, justified by S. L. Dolan and B. A. Richley [34].

The value «m» of the consumer organisation \( C \) is the basis for formation of the management system \( C \) of this organisation, which involves establishment of relations \( C-S \) with the supplier organisation \( S \), focused on the value «n», based on which the management system \( S \) is formed. Relations between these organisations are carried out by officials \( C \) and \( S \), respectively. The result of these relationships is the product «i» supplied by the supplier organisation \( S \).

The requirement for manufacture and supply of this product is transferred to the performer \( S \), who uses the appropriate resources \( S_i \) and process...
S for this. The manufactured product \( i \) is acquired by the consumer organisation \( C \) according to the criteria of quantity, quality, cost, and time, which, consuming the product, compares the desired and perceived values, the difference between which is estimated by the integral performance coefficient \( cK_{iC} \). A similar comparison is carried out by the supplier organisation, which also evaluates its value using the integral indicator \( sK_{C} \). If the deviations of these coefficients are acceptable, organisations \( C \) and \( S \) operate within the established relationships, if they are not acceptable, then these relationships are corrected and, accordingly, the quality of the components of their management systems changes. In some cases, relations between organisations may be interrupted.

Previously, the main groups of management methods considered as a component of the organisation’s management system were presented. To substantiate their quantity and quality, it is advisable to use the following relevant features and dichotomies: «object to which the impact is applied» (a person and a group of people), as well as «the nature of the impact application» (relatively stable and situational). The joint use of these signs and dichotomies allows us to confirm the presence of administrative, economic, socio-psychological, and organisational methods for managing organisations and/or value chains (Pic. 4).

The information presented in Pic. 4 can be confirmed based on the classification of resources processed by the organisation (Pic. 5).

Resources, traditionally divided into material, informational, financial, and human [29], create the prerequisites for the use of:

1. Administrative and socio-psychological methods of management used in the relationship between persons making and implementing decisions related to human resources. These management methods are most consistent with the practice of human resource management.
2. Profit-oriented economic methods through cost management and pricing of financial resources. In this case, it is worth speaking about the practice of financial resource management (FRM).
3. Organisational methods aimed at: (a) managing processes involving fixed and working capital, primarily in the form of material resources; and (b) justification and implementation of management decisions based on the use of external and internal information or information.
resources. Depending on the type of resources used, one can single out, respectively, the practices of material resources (MRM) and information resources management (IRM).

The content of Pic. 5 is basic since all the management methods presented in Pic. 4 are applied to human resources; those methods, in turn, can also be structured for the purpose of the subsequent choice of management principles and approaches to its implementation.

The main administrative methods of management can be substantiated based on the following relevant qualitative features and their dichotomies: «factors influencing the relationship between managers and performers» (official powers and forms of interaction), as well as «stages of creating an organisation management system» (design and formation; operation and optimisation). The binary matrix formed based on these features and dichotomies makes it possible to substantiate four administrative methods of management presented in Pic. 6.

The main economic methods of management can be substantiated based on the following relevant qualitative features and their dichotomies: «the form of employee participation in the activities of the organisation» (the performance of labour functions and the adoption of managerial decisions), as well as the «type of the subject of management that achieves the goal» (the organisation as a whole and the employees). The combination of these features and dichotomies allows us to substantiate four economic methods of management presented in Pic. 7.

The main socio-psychological methods of management can be substantiated based on the following relevant qualitative features and their dichotomies: «the type of the object of management in the organisation» (a person and a group of people), as well as «priorities of the organisation’s personnel management» (formation of working groups and achievement of the organisation’s goal). Pic. 8 shows a binary
Form of employee participation in activities of the organisation

<table>
<thead>
<tr>
<th>Fulfilment of labour functions</th>
<th>Making managerial decisions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Management of forms of remuneration</td>
<td>Organisation property ownership</td>
</tr>
<tr>
<td>Management of bonus systems</td>
<td>Reward for reduction of lost profits</td>
</tr>
</tbody>
</table>

Pic. 7. Classification of economic methods of organisation management [developed by the author].

Type of the object of management in the organisation

<table>
<thead>
<tr>
<th>Person</th>
<th>Group of people</th>
</tr>
</thead>
<tbody>
<tr>
<td>Formation of working groups</td>
<td>Adaptation of character and manners of behaviour of the individual to the conditions of performance of labour functions</td>
</tr>
<tr>
<td>Priorities of personnel management of the organisation</td>
<td>Creation and preservation of the socio-psychological climate in groups</td>
</tr>
<tr>
<td>Achievement of organisation’s goals</td>
<td>Focus on creation consumers’ and performers’ values</td>
</tr>
<tr>
<td></td>
<td>Maintaining aspiration to meet the needs of the highest level</td>
</tr>
</tbody>
</table>

Pic. 8. Classification of socio-psychological methods of organisation management [developed by the author].

Form of impact on the organisation’s personnel

<table>
<thead>
<tr>
<th>Individual</th>
<th>Collective</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tactical</td>
<td>Strategic</td>
</tr>
<tr>
<td>Regulation and compliance with the cycle of technological operations</td>
<td>Implementation of a process approach (elimination of cross-functional barriers)</td>
</tr>
<tr>
<td>Control of changes in the organisation</td>
<td>Management of sustainability and sustainable development of the organisation</td>
</tr>
</tbody>
</table>

Pic. 9. Classification of organisational methods of organisation management [developed by the author].

matrix that allows identifying four options for socio-psychological management methods.

The main organisational management methods can be substantiated on the basis of the following relevant qualitative features and their dichotomies: «the form of impact on the organisation’s personnel» (individual and collective), as well as the «type of goal achieved» (tactical and strategic). The joint use of these signs and dichotomies allows us to substantiate four organisational methods of management presented in Pic. 9.

If necessary, each of the methods of managing an organisation can be structured into components, considering the features of this organisation. In addition, in some cases, it is possible to establish priority groups of these methods, as well as rank these methods depending on the specific management situation. As a result, the prerequisites are formed for implementation of one or another style, or rather, combined styles of managing an organisation to increase its productivity and better serve the end consumers of products and/or services.

The information presented in Pics. 6–9, allows us to establish the relationship between main methods of managing an organisation, as well as the corresponding principles and approaches to managing objects of socio-economic systems (Table 2).

Thus:

1. Focusing on the main groups of management methods (Pic. 4), the groups of principles and approaches to management can
## Table 2

Relationships of methods, principles, and approaches to managing objects of socio-economic systems [developed by the author]

<table>
<thead>
<tr>
<th>Methods</th>
<th>Principles</th>
<th>Approaches</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Administrative methods</strong></td>
<td>Principles and approaches to organisation management</td>
<td></td>
</tr>
<tr>
<td>Definition and regulation of official powers and use of power</td>
<td>Correspondence of the knowledge, skills, abilities, and competencies of the employee (performer) to the position held</td>
<td>Structural</td>
</tr>
<tr>
<td>Distribution and coordination of functions, statement of responsibility</td>
<td>Uniformity of distribution of labor intensity of the organisation’s management processes</td>
<td>Directive</td>
</tr>
<tr>
<td>Granting resource management rights</td>
<td>Correspondence of powers and resources used for their implementation</td>
<td>Resource</td>
</tr>
<tr>
<td>Communications management in scalar circuits</td>
<td>Formalisation of managerial influences and subordination of positions at various levels of management</td>
<td>Social</td>
</tr>
<tr>
<td><strong>Economic methods</strong></td>
<td>Principles and approaches to management of efficiency and effectiveness</td>
<td></td>
</tr>
<tr>
<td>Management of forms of remuneration</td>
<td>Correspondence of the labour contribution of performers in achieving the goals of the organisation and the wages they receive</td>
<td>Economic</td>
</tr>
<tr>
<td>Organisation property ownership</td>
<td>Rational loading and use of fixed and working capital of the organisation</td>
<td>Pragmatic</td>
</tr>
<tr>
<td>Management of bonus systems</td>
<td>Equitable distribution of results obtained by the organisation in an unstable environment</td>
<td>Exclusive</td>
</tr>
<tr>
<td>Reward for reduction in lost profits</td>
<td>Search for reserves to improve the organisation’s activities and development of recommendations on their use</td>
<td>Entrepreneurial</td>
</tr>
<tr>
<td><strong>Socio-psychological methods</strong></td>
<td>Principles and approaches to personnel management</td>
<td></td>
</tr>
<tr>
<td>Adaptation of the character and behaviour of the individual to the conditions of performance of labour functions</td>
<td>Maximising the use of the labor potential of the organisation’s employees and achieving a synergistic effect</td>
<td>Adaptive</td>
</tr>
<tr>
<td>Creation and preservation of the socio-psychological climate in groups</td>
<td>Exclusion of factors of negative impact on employees and working groups and effective conflict management in the organisation</td>
<td>Corporate</td>
</tr>
<tr>
<td>Focus on creation of values of consumers and performers</td>
<td>Formation and development of relationships in the organisation and with contractors</td>
<td>Marketing</td>
</tr>
<tr>
<td>Maintaining aspiration to meet the needs of the highest level</td>
<td>Development of the intellectual potential of performers and intangible assets of the organisation</td>
<td>Motivational</td>
</tr>
<tr>
<td><strong>Organisational methods</strong></td>
<td>Principles and approaches to management of business processes</td>
<td></td>
</tr>
<tr>
<td>Regulation and compliance with the cycle of technological operations</td>
<td>Maximum capacity utilization, detection and prevention of force majeure situations when fulfilling consumer orders</td>
<td>Optimization</td>
</tr>
<tr>
<td>Implementation of a process approach (elimination of cross-functional barriers)</td>
<td>Exclusion of losses of lost profit at the junctions of labour functions of performers and departments of the organisation</td>
<td>Process</td>
</tr>
<tr>
<td>Change management in the organisation</td>
<td>Minimization of costs, time and lost profits when adjusting activities and restructuring of the organisation</td>
<td>Situational</td>
</tr>
<tr>
<td>Management of sustainability and sustainable development of the organisation</td>
<td>Accounting for economic, environmental and social aspects of sustainable development of the organisation</td>
<td>Strategic</td>
</tr>
</tbody>
</table>
be distinguished regarding: (a) relationships, (b) efficiency and effectiveness, (c) personnel, and (d) business processes.

(2) Each management method is assigned a management principle. Recall that the most well-known principles of organisation management include principles [35–40], the number of which varies from 4 to 14. As follows from Table 2, the proposed principles of organisation management are a two-level structure. At the first level, groups of these principles are presented, and at the second level, management principles. Since each principle is associated with a specific management method, in accordance with the data in Pics. 4 and 6–9 they are related to each other due to relevant qualitative features and their dichotomies. That is, it can be argued that, in contrast to the already known lists of management principles, the principles proposed by the author are formed based on a systematic approach.

(3) Each management method is assigned a management approach. There are also 16 of them, and their joint use: (a) is carried out based on a systematic approach, and (b) is accompanied by clearly formulated links by analogy with the links of management principles.

CONCLUSION

The results obtained, according to the author, are the basis for further research based on unambiguously presented groups of transport organisation management methods, as well as individual management methods, each of which is associated with the principle and approach to management, as well as based on recommendations for formation of an integrated chain management system values, which reduces the possibility of contradictions and conflicts when creating value for end users of products and/or services.

Each method, principle and approach to management described in the article can be assigned an appropriate binary code that allows processing information about the state of management systems of various types and levels using digital tools for management activities in relation to the transport industry. This reduces the likelihood of errors and, thereby, improves the quality of management decisions and reduces time for their implementation.

In the course of further research, it is supposed to clarify the essence and content of the so-called «self-management» systems of the end user of products and/or services provided by transport organisations; form an approach to monitoring the components of systems of this type; assess the trends in sustainability management and sustainable development of «self-management» systems by the end consumer of products and/or services, taking into account the economic, social and environmental aspects of this type of management; identify the features and mechanism of the formation of the «bullwhip effect» in the value chain management system and develop recommendations for reducing its negative impact on the performance of chains of various types.

REFERENCES

12. Bashir, S., Khattak, H. R. Impact of selected HR practices on perceived employee performance, a study of Public Sector


