The factors of competitiveness management of manufacturing enterprise personnel in conditions of uncertainty


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Abstract:
Personnel competitiveness has always been one of the main advantages of any manufacturing enterprise. Therefore, competitiveness management of manufacturing enterprise personnel is one of the most foreground types of management. The article covers the most widespread issues and difficulties of personnel management implementation nowadays, considering current complicated conditions of uncertainty, which become increasingly sophisticated every time. Moreover, our study demonstrates some possible ways for manufacturing enterprises to overcome existing obstacles and become ready for new ones in conditions of uncertainty. As COVID-19 and martial law in Ukraine contribute to the way of personnel management realization, many manufacturing enterprises have been suffering because of that and have been forced to change their management principles to meet the new conditions. Therefore, the latest theories of personnel competitiveness management are introduced in our science study to help manufacturing enterprises cope with the changing conditions of uncertainty in the modern world.

Key words:
Competitiveness, personnel competitiveness, manufacturing enterprise, uncertainty, COVID-19, martial law in Ukraine.

1. Introduction

In the modern realities of the development of industrial enterprises in the world, a new type of society is formed based on knowledge and information. It adheres to the vector of innovative development. Usually, in the international market, the competitive advantage is given to the manufacturing company that has managed to adapt its development strategy to the external environment, has succeeded in implementing innovations and usually applies the latest theories of personnel management and competitiveness. Thus, it is worth noting that in the process of forming the competitiveness of personnel of modern manufacturing enterprises, many features must be taken into account by entrepreneurs to ensure their effective operation in conditions of uncertainty. In 2022 conditions of uncertainty are still caused by the COVID-19 pandemic and exacerbated by military actions in Ukraine.

In general, the conditions of uncertainty are faced by more and more personnel of industrial enterprises in Ukraine. It certainly affects the entire global personnel market because, due to the escalation of the military conflict, much talented personnel are migrating...
across Europe, allowing industrial enterprises to increase their competitiveness staff from Ukraine. The labour market in current conditions is constantly changing and introducing the latest management theories is the main task of every manager. In today’s needs, to increase the competitiveness of staff, it is necessary to implement the latest and most effective management theories to keep up with uncertainty.

However, given the crucial importance of this economic category, a comprehensive theoretical justification of the role of staff competitiveness in the further effective development of the enterprise in conditions of uncertainty remains relevant. Furthermore, it determines the need for further research in this area.

2. Methodology and literature review

2.1. Methodological framework

Since the topic of our scientific work has not only a three-dimensional theoretical basis but also extensive application in practice, we used such a method of theoretical and empirical research, including analysis and synthesis, comparison and generalization. Furthermore, modern computer technology was used for data processing. After defining the topic, the following systematic work was carried out, which consisted of several stages.

The first stage was the collection of data on the topic, searching for statistical and analytical sources of information, and separating those data that may be useful for the study. The second stage was forming and structuring data according to the criteria of conciseness and logic. The main stage was analysing and synthesizing the received information and discussing the main problems and obstacles to their solution. Then all the received data were supplemented, clarified and edited, as well as the elimination of redundant information. The last stage was the generalization of information, i.e. the formation of conclusions based on the study’s results.

2.2. Literature review

The information base of the study consisted of works of domestic and foreign scientists, practitioners on the management of competitiveness of personnel of the manufacturing enterprise in conditions of uncertainty, current legislation, analytical and statistical data of domestic and international open sources and the results of their research.

As issues covered in our article are standard worldwide, the study was carried out using the results of previous scientific works. Among the foreign authors should be noted the contribution of Drucker P., Porter M., Strickland A., Thompson A., etc. The theoretical and methodological bases of personnel competitiveness management are devoted to the works of Boginya (2003), Buchynska (2016), Kozak (2011), Marchenko (2015), Dunska (2012), Filippova (2019), Kovalenko (2020), etc.

3. Analysis, results and discussion

3.1. Personnel competitiveness

In this context, it is first appropriate to define the concept of “staff competitiveness” and consider its components. Staff competitiveness is a multi-component and complex economic category. Competitiveness is formed as an integral indicator of those qualities due to which a particular employee is better than others for a specific position (from the enterprise’s point of view and due to which the enterprise gives it an advantage) (Nesterenko and Chernyakova, 2011).

Personnel competitiveness is a complex economic category, the essence of which is revealed by the following conceptual approaches to its definition:

1. The ability of managers, practitioners and professionals to generate ideas using all the opportunities that arise in the external and internal environment; timely identify threats to the enterprise; solve problems; invent and implement innovations faster than competitors at all stages of the product life cycle; to ensure the achievement of goals and fulfilment of its mission;

2. Ability to effectively perform management functions and timely make qualified decisions to develop, manufacture and sell high-quality products with unique consumer properties (services) with the most efficient use of resources;

3. The ability to more fully, compared to other candidates for vacant positions, meet the requirements of employers in terms of knowledge, skills and abilities;
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4. Ability to show their personal, professional and business qualities faster and better than other employees to realize their potential under specific conditions prevailing in the enterprise, which allows them to receive appropriate remuneration, achieve appropriate social status and ensure professional growth (Halaz, 2008).

Thus, the personnel is the “driver” of any enterprise. Without the human factor, the effective functioning of the organization is impossible. Without qualified specialists, no firm can achieve its goal. The experience of many foreign companies from Ukraine, Germany, Canada, etc. shows the strengthening of the role of human resource management in the system of factors that ensure competitiveness. To achieve a more stable competitive position, the company must constantly develop staff development programs to provide employees with many necessities, development and improvement professional and general education.

Intangible assets should be included as one of the modern components of staff competitiveness. Successful intangible assets are the result of well-planned strategic activities of the enterprise. An experienced leader, first of all, is engaged in improving the knowledge base of his subordinates. It increases the intellectual value and potential of the enterprise as a whole. Nowadays, not many experienced professionals create specific resources for the company in which they work. Thanks to such “specific personnel”, the value of the enterprise is completed, and the so-called “competitiveness of the enterprise personnel” is formed (Kovtunenko, 2013). The essence of the expansion of intangible assets is to turn ordinary people into experienced “generators” of ideas, i.e. “specific resources” for this company. As a result, such innovators can bring additional profits to the company.

The ongoing development of modern technologies and the IT sector plays a significant role in the process of intellectualization of personnel. It also affects the process of managing the competitiveness of personnel of modern enterprises. Most modern manufacturing companies are increasingly beginning to implement new IT departments in their organizational structure that specialize in optimizing the enterprise’s business processes and increasing its competitiveness. Examples of so-called optimization processes are the introduction of intelligent document management or modern agile methodologies that allow to manage production cycles of the enterprise with special software and achieve the desired goals faster. The development of such advanced technologies, of course, affects the competitiveness of staff in general, as new professionals are involved, and improves the skills of existing personnel.

3.2. Lifelong learning concept

Influential aspects of staff competitiveness also include the concept of lifelong learning, which is becoming more relevant and aware among young people and professionals in various fields. In addition, the desire to develop and be one step ahead of its competitors is a great driving force and “spark” that motivates staff to build their personality further and work tirelessly on themselves.

The concept of lifelong learning is one of the most popular trends, which more and more professionals seek from around the world at the present stage. Awareness and constantly learning new things are becoming a fashion trend in today’s society. The concept of continuing education means conscious continuous improvement and holistic development of the specialist throughout life, increasing opportunities for work and social adaptation in a changing world.

In general, this concept first appeared in the early 20th century. The reason for its emergence was the rapid development of society and the need for a more skilled workforce. However, this concept did not receive approval for a long time until, in 1975, it was adopted by UNESCO. The concept of lifelong learning allows us to act in a new situation, using all our experiences together, and to update and transform it in terms of our own beliefs and values, as well as feelings, feelings and emotions that are manifested concerning this situation and its solution. Therefore, adherence to this concept in managing personnel competitiveness, especially in conditions of uncertainty - is essential for modern manufacturing enterprises.

3.3. Personnel evaluation

Of course, the timely assessment also plays an essential role in managing staff competitiveness. Personnel appraisal is a procedure of checking employees’ work for compliance with specific criteria for the effectiveness of certain actions within the job responsibilities within the company. Most companies have their employee appraisal system, according to which employees are appraised regularly. It is an
opportunity to assess the employee’s progress, praise his/her achievements and work together to achieve goals to increase staff competitiveness and help achieve the company’s goals. Evaluation results are often critical in raising career ladders, bonuses, pay raises, and so on. In addition, regular evaluations help employees better understand what is expected of them, improve communication between management and employees, giving employees proper recognition of their work because the assessment of staff allows concluding the professional development of a particular employee and promptly offering the necessary training or retraining.

Employee evaluation has several goals aimed at increasing the competitiveness of staff. The advantages of professional assessment of employees include (Martynenko et al., 2013):

- helping employees better understand what is expected of them;
- an opportunity for the manager to better understand the strengths and motivation of employees;
- providing employees with valuable feedback on how they can improve their work in the future;
- assistance to the employee and the manager in planning the future career of the employee;
- objective reviews of people based on standard indicators can be helpful for a fair assessment of promotion, promotion and bonuses.

Currently, many methods are used for business evaluation of personnel in personnel management, each of which is relevant at a particular enterprise stage. However, the whole evaluation system is effective only in a comprehensive assessment, the structure of which can be represented as a model (Figure 1), combining three groups of characteristics, including employee quality, work behaviour and performance.

From the presented model, it is seen that the characteristics of the three groups are closely related. It is not surprising because the quality of the employee is the basis for the formation of labour activity, which at the same time serves as a process for the construction of performance.

There are many methods of personnel evaluation used by enterprises and organizations. However, they are conventionally divided into traditional and modern. Traditional methods are focused on the individual employee and based only on the subjective assessment of the head as a result of the analysis of the achievements of the employee. The disadvantage of this method is to provide an evaluation, ignoring the company’s goals and prospects and colleagues’ opinions, which makes it relevant only for large enterprises with a stable external environment. Traditional methods include:

- biographical method;
- ranking;
- the method of a given score;
- graphic profile method;
- method of pairwise comparisons;
- evaluation by results.

Figure 1. Model of comprehensive employee evaluation. Source: authors’ own development.
Modern methods are focused on the organization’s future and assess the employees’ effectiveness in the group and their ability to develop and master new knowledge and processes. They include:
- situation modelling method;
- committee method;
- method of 360 degrees;
- method of business games;
- goal management method;
- method of solving situations;
- method of assessment centre;
- analysis of human resources.

3.4. Factors of personnel competitiveness

Thus, the components influencing the formation of staff competitiveness should include local (internal to the manufacturing enterprise) factors (organization of the day, organization of the workplace, working conditions, wages, labour evaluation, training, incentives and motivation) and personal elements (development of unique qualities, self-education, physical and spiritual growth, self-esteem, self-improvement). The main factors influencing staff competitiveness should be shown graphically in Figure 2.


Since the main features of the formation of staff competitiveness have already been mentioned, it is advisable to shift the focus to managing the competitiveness of personnel of manufacturing enterprises under conditions of uncertainty. However, before considering the conditions of uncertainty, we propose to dwell on the definition of uncertainty and separate its significance in the modern world for manufacturing enterprises.

Uncertainty is the incompleteness or inaccuracy of information, which is the main obstacle to developing the manufacturing enterprise. Unfortunately, uncertainty is gaining momentum with each passing day. Uncertainty haunts everyone now, and all because of the factors of uncertainty, which are increasing with each passing day. These factors destabilize confidence in the economy, business, and the international market. But every business needs this confidence because the company’s stability guarantees its existence and is the foundation for the future development of the manufacturing enterprise.

The conditions of uncertainty include any changes, usually in the external environment of the manufacturing enterprise, to which it is almost urgent to adapt. In the world, there are many factors

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**Figure 2.** Factors affecting staff competitiveness. *Source: authors’ own development.*
and conditions of uncertainty, and it is suggested to note the main ones, Figure 3. One of the most severe and urgent factors of uncertainty today is the COVID-19 coronavirus pandemic and the war in Ukraine, leaving a fatal and inevitable mark on history and causing a critical situation in the world economy.

In this context, it is advisable to consider in more detail COVID-19, which forced the world to become more digitalized. Modern manufacturing companies survived the crisis and could only survive those who could effectively manage the competitiveness of their staff and transfer business processes online. During COVID-19, managers were forced to encourage employees to expand their capabilities and do any variety of work if necessary - and employees adapted to these changes, understanding the critical situation and the needs of enterprises.

The staff used their capabilities in a new way. This crisis during the pandemic showed that by giving employees a chance in a difficult economic situation to support the needs of the enterprise, employees use their potential and show themselves to the best of their ability. Employees began to use their opportunities to the maximum, and managers would never know the employee’s full potential without giving him such an opportunity (Social report, 2021).

As a result of COVID-19, many manufacturing companies have been challenged to rapidly change working conditions for staff in the context of digitalization. As a result, managers were forced to make a large number of new implementations in a brief period, namely:

- review and change the load on different departments of the enterprise in connection with changing needs of the population;
- dismiss staff from some positions that are not relevant during the pandemic;
- hire more people in the delivery department due to the heavy workload;
- monitor the health of staff and prevent the spread of the disease;
- organize safety in the workplace by conducting periodic disinfection and providing staff with masks, gloves, antiseptics, etc.;
- ensure the implementation of established plans, even if most employees are ill;
- to train staff to work in new conditions of digitalization by establishing round-the-clock IT support;
- organize online courses for those who find it challenging to master online work;
- provide staff with appropriate conditions for online work (create online databases and online services and provide staff with proper gadgets);
- transfer staff to work online;
- ensure stable and preferably accessible communication of staff with managers;
- organize periodic meetings and rallies to discuss complaints and suggestions for new theories of personnel management;
- monitor the efficiency of the personnel at home;
- make many reports to monitor the effectiveness of the latest personnel management theories constantly.

**Figure 3.** The main current factors of uncertainty. *Source: authors’ own development.*
We can conclude that managers had to reconsider their views on outdated management methods and act quickly using the latest management theories. Currently, managers face a new challenge – the need to restore staff competitiveness following the effects of COVID-19 and adapt to the new conditions of uncertainty that are presently suffering from hostilities in Ukraine.

The martial law in Ukraine, which began on February 24, 2022, due to the invasion of the Russian Federation, destroyed the economic component of Ukraine and had a tremendous negative impact on the world economy. Due to a large number of occupied cities, destroyed infrastructure, and refugees to neighbouring countries, many small and medium-sized businesses, especially in the manufacturing sector, were forced to close their businesses. The martial law in Ukraine creates new problems for the global economic environment and risks hampering the restoration of confidence in investment in Ukraine’s manufacturing enterprises.

The war has also affected international manufacturing companies with the imposition of large-scale economic sanctions, which have restricted access to energy resources and thus raised prices for materials, manufacture and, as a result, the transportation of products around the world. Due to the global increase in prices, managers of manufacturing enterprises were forced to reduce the staff or increase the amount of work while maintaining pre-war wages or even reducing them.

Due to the hostilities in Ukraine, a large number of people (approximately 4.4 million) were forced to leave the country and leave their jobs. It means that Ukraine’s financial security has significantly decreased due to the migration of the working population abroad. Because all the money received by Ukrainian migrants remains in the country of migration and does not raise the economy of Ukraine, the Cabinet of Ministers of Ukraine adopted several legislative acts to stabilize the situation and reduce the consequences of the war.

Given the above, we offer the following ways and methods of organizing personnel management of a manufacturing enterprise in a state of war:

- if possible, provide housing for displaced persons as one of the types of assistance and employment bonuses;
- hire a psychotherapist or apply to the appropriate company to provide psychological assistance to employees and do so regularly;
- offer health insurance, which must cover the services of a psychotherapist;
- constantly organize webinars and psychological training;
- transfer to remote work all employees who have the opportunity to work from home. After all, it will save jobs even when a person has been forced to go abroad and reduce travel, energy and safety of workers;
- provide employees with the constant communication so that employees have access to contact in case of emergency;
- reduce the working day.

Speaking of international manufacturing companies, we offer the following recommendations:

- simplify obtaining the right to work for migrants from Ukraine;
- facilitate the bureaucracy process and reduce time and procedures.

Society must understand that the consequences of hostilities in Ukraine have already reached the whole world. In case of prolongation, the conflict will only intensify in the territory of Ukraine and all over the world. Therefore, following the proposed recommendations, personnel managers at manufacturing plants will be able to stabilize the situation in the uncertain environment.

Managers are changing organizational thinking, overcoming uncertainty, and investing in building trust with staff to develop an action plan to restore staff competitiveness that will provide a solid foundation for the future in today’s uncertainty. The primary purpose of developing the latest theories of personnel management should be – a shift in thinking: from today to tomorrow. The effectiveness of managers’ use of the basic principles of development of the latest theories of personnel management in conditions of uncertainty will depend on the competitiveness of personnel and the growth of the manufacturing enterprise in general (Figure 4).

All the principles in the diagram are indicated in the same percentage (25% out of 100%). That is, all the principles are equally important and not applying only one of them reduces the effectiveness of
personnel management in conditions of uncertainty by as much as 25%. That is why modern managers should review management policies and make necessary changes based on these principles.

In the modern sense, staff competitiveness is a concept that reveals the nature of the processes of competition from the standpoint of advantage and leadership. The latest theories of personnel competitiveness management have long been studied and developed by various authors. First, however, it is necessary to pay attention to competitiveness as a purely practical phenomenon, as long-term and sustainable development of the enterprise will be a reward for ensuring the competitiveness of staff in the context of digitalization (Dobrianska, 2017).

On the way to adapting to uncertainties, managers who know their business must inspire their staff to overcome all obstacles during this period. But excellent personnel management requires even more followers - and trust nurtures devotion. As a result, many managers have amassed a significant bank of faith, skillfully overcoming the first crazy and unpredictable stages of the crisis in the context of digitalization (Dobrianska, 2015). While some may think of trust as an abstract, unearthly concept, in reality, it is a concrete foundation needed to validate strong relationships with stakeholders in effective governance. Two attributes of trust are fundamental in this regard.

First, trust is an actual exchange of values. Trust is valuable only in interaction with others when its meaning is revealed, for example, with customers, suppliers, employees, investors and team members. Similarly, trust is built only in a relationship where actual compromises provide mutual value. Trust also promotes growth: if invested wisely and prudently, it grows through the confirmation of repetitive experiences; poor investment in trust quickly depreciates. In addition, research shows that trust also yields economic growth and shareholder value, increased innovation, increased social stability and even improved health. Second, trust is most effective in many ways. Trust between stakeholders is formed in four areas: physical, emotional, financial and digital (Figure 5).

It is worth noting that trust begins to form on a human, interpersonal level. COVID-19 has increased the sensitivity of stakeholders to these four parameters and opened up more opportunities for action to strengthen or lose staff confidence in their manager in digitalization. For example, employees’ trust in management may arise when managers think carefully about reorganizing a manufacturing enterprise’s manufacturing process through digitalization (to provide individual staff with appropriate devices and transfer them to remote work, so it will be possible to reconfigure the space on-premises for another team, taking into account social distancing).

Another example of trust management, where managers do their best to save as many jobs as possible, valuing their staff and their contribution to the company, rather than laying off most workers

![Figure 4](image-url)
Managers of the enterprise, who will be able to show loyalty to their staff even in difficult times of crisis and thus confirm that human resources are significant to them, will leave the company in high positions in the market. Manufacturing companies that are focused on people (on their staff) and improving working conditions can count on the appropriate loyalty and trust not only of their employees but also customers. For this purpose, the manager needs to develop the newest theories of management of competitiveness of the personnel based on trust, provide the personnel with constant professional support and organize uninterrupted work, even in the conditions of uncertainty (Prodius, 2009).

In current conditions, the latest management theories are becoming the foundation of leadership, characterized by increasing staff competitiveness due to the spread of digitalization. Also, in these conditions, the volume of intellectualization of work increases, which is why the presence of highly qualified staff in the team is considered the most important strategic resource. It is also facilitated by uniting European states into the European Union and its globalization policy. As a result, there are changes in the workload distribution from physical to intellectual. Therefore, more critical in personnel management is assessing its intellectual potential. Today, more than ever, managers are interested in forming a reliable and professional staff motivated to grow personal skills and qualifications and improve their contribution to achieving the ultimate goals of the manufacturing enterprise (Prodius and Alekseev, 2015).

The COVID-19 pandemic, as a factor of uncertainty, has radically changed our way of life. It forced
us to take a step towards the digitalization of the personnel of modern enterprises. Nevertheless, the opportunity hypothesis in a crisis remains as accurate as ever. History has repeatedly shown that problems stimulate innovation and the development of the latest management theories. Whether technical, scientific or product related to business models or public institutions, all such innovations have one thing in common: they solve problems.

The most striking example of the use of innovation in conditions of uncertainty is the development of digitalization during a pandemic as a major factor in staff competitiveness. COVID-19 accelerates digital transformation in “seven-mile increments”. In response to restrictions imposed to slow the spread of the virus, businesses have switched to digitalization at a rate far above that achieved by all previous corporate investments and government quarantine programs. Although the logic of digitalization remains the same as in the past, three reasons behind this active perception come to mind:

- As always, demand is determined by customer needs. When there is no alternative to online services, customers often focus on solutions that support some semblance of normal business conduct and are willing to accept them, even if they are still developing.
- Opportunities for supply are increasing, so companies are focused on the future and act quickly. As a result, minor issues are deprived of priority, allowing companies to work much more efficiently as bureaucracy is eliminated suddenly.
- Regulators create encouraging conditions for transparent business. Governments intervene through laws, regulations, and support programs, prioritizing crisis response through digitalization. Everyone adopts these regulations because now the public benefit to society is placed above individual considerations.

4. Conclusion

After analysing the impact of uncertainty on the management of competitiveness of manufacturing personnel, we can say that managers today need to be more decisive than ever and make quick decisions. Due to the constantly changing economic situation in the world, manufacturing companies must meet the requirements of today to continue to conduct and develop their business.

It is appropriate to note that manufacturing companies in all countries must understand the causal links between conditions of uncertainty (such as martial law in Ukraine or the COVID-19 pandemic) and the world economic situation. As well as must realize that joining forces will help to cope with most factors of uncertainty to establish the financial process in the world and the organization of stable management of staff competitiveness, based on international standards and principles.

Managers must always consider human resource management’s peculiarities, namely their psychological component. Up to it depends on the personnel and the enterprise’s competitiveness. Therefore, enterprises must take appropriate measures to maintain the psychologically healthy condition of the staff. Examples are psychological pieces of training, webinars, seminars, etc. Furthermore, enterprises should organize constant psychological assistance to employees. As a result, the potential of the staff will be revealed, the competitiveness of the team will increase, and as a result, the profit of the manufacturing enterprise will increase. Managers should always keep humanity and friendliness when organizing the process of managing the competitiveness of manufacturing staff. The trust of staff, and as a consequence of customer trust, is based on the reputation of the manufacturing enterprise, i.e., its methods and ways of personnel management.

In addition, speaking of digitalization, it should be noted that the capabilities of man and machine are most productively used in the development of systems in which people and machines work together, complementing each other’s strengths and balancing each other’s limitations. Therefore, the personnel management scheme will be the most effective because the importance of information technology and digitalization should not be seen as an obstacle but as an opportunity for improvement.

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