

## **EFFECTS OF PSYCHOSOCIAL FACTORS IN THE WORK ENVIRONMENT ON BUSINESS PERFORMANCE WITHIN THE METALLURGICAL INDUSTRY**

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### **Abstract**

One important aspect of business output and performance in the metallurgical industry is a specific working environment and related factors that affect it. In the paper, authors discuss the factors that affect the output and performance of individual workers, particularly in terms of psychosocial aspects of the work environment, whereas within the psychology of work they are generally divided into objective and subjective factors. In each of the groups of these factors it is necessary to consider those with short-term or long-term effects on monitored indicators of workers, as well as those that act upon them directly or indirectly. While changes in the output of individual workers can be monitored at frequent intervals and may be influenced through one-time measures, changes associated with the performance are a matter of a lengthier observation and may be ensured through, and in conjunction with long-term and gradual steps.

**Keywords:** output, performance, work environment, psychosocial aspects of work, metallurgical enterprise

### **1. INTRODUCTION**

The working environment within the metallurgical industry is a specific area in the physical as well as in the psychological sense, where, due to the nature of the activities carried out, more attention is paid to the safety issues. The content definition of the expressional form of psychosocial factors and the working environment is essentially based on the relationship between psychological (mental) health and the perception of safety as a whole. The World Health Organisation (WHO) describes psychological (mental) health as a state of psychological well-being in which the individual realises their potential, is able to cope with the normal stresses of life, can work productively, successfully and is able to contribute to their community. On the other hand, the psychological perception of safety and everything associated with it is also defined negatively—as the absence of risk, actually or potentially disrupting the global state of psychological well-being—the cornerstones of mental health.

The workplace is essentially a second home to every person regardless of their opinion or attitude towards this fact. During the time period associated with a particular workplace, one<sup>1</sup> meets a larger or smaller number of people, through solving various tasks and situations, and may gain pleasant or less pleasant experiences that leave them with positive or negative feelings, either in a short term or long term exposure, often even in a fixed form. The above conditions are substantially transformed into a person's thinking, their psyche, thereby influencing their behaviour, feelings, moods, and to a large extent they also translate into performance, efficiency, effectiveness and reliability of the person at the specific workplace in a metallurgical enterprise.

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<sup>1</sup> An employee working under a secure employment relationship (employment contract), agreement on work activities, work performance agreement or other contractual/business relationship

## **2. PSYCHOSOCIAL FACTORS IN THE METALLURGICAL INDUSTRY WORKING ENVIRONMENT**

### **2.1 Managerial Psychology**

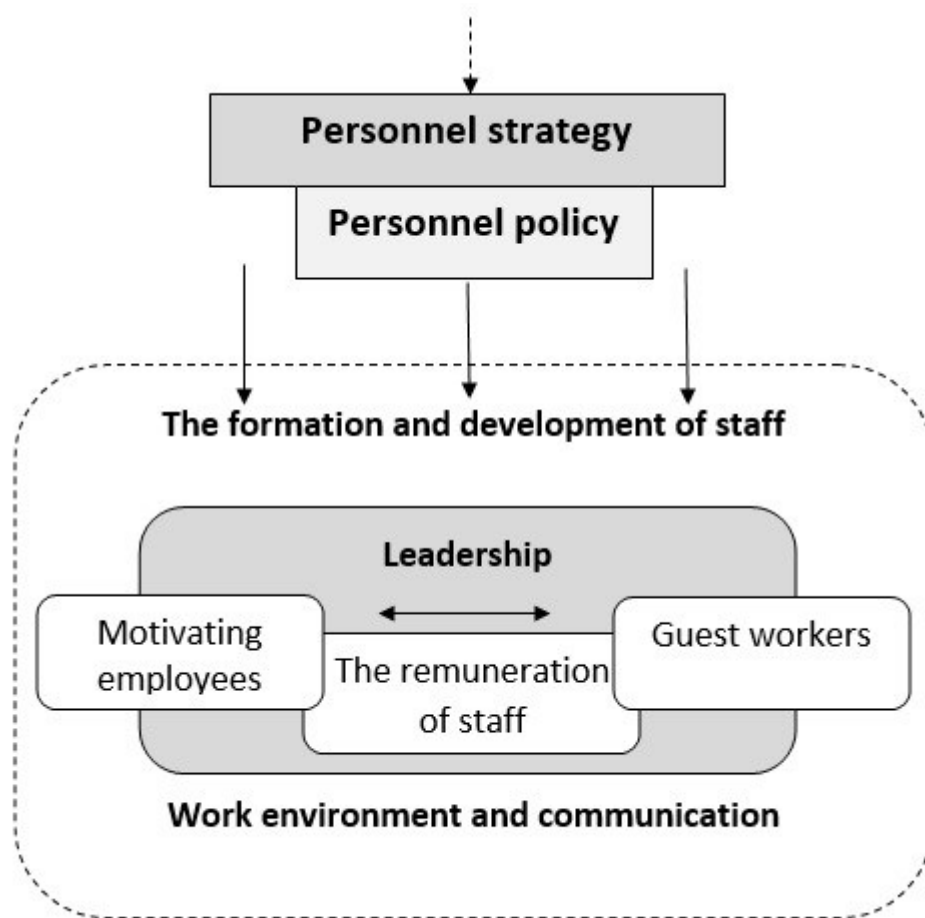
In general, the term psychology means the science of man, which deals with the psyche and its regulatory role, human activity and human personality. Managerial psychology is one of the practical disciplines, which means it focuses on exploring its subject and transforming the knowledge into proposals that can be used in management practice within a metallurgical industrial enterprise.

Management psychology, in conformity with the general definition of the subject of psychology, is concerned with personality and activities of people and managers in the management process of an industrial enterprise. Its content characteristics can be derived by means of, or on the basis of the following theses:

- Work is a group activity.
- The social world of adults is mainly formed on the basis of their activity.
- Attitudes and performance of people are affected by social standards which do not only originate in the working process.
- Recognition, confidence and a sense of belonging are more important to the creation of morale and performance of employees than the conditions under which they work.
- Work habits and attitudes of each individual are under a strong social control by working groups and teams.
- Cooperation in a working group is not random and must be continuously and systematically trained and managed.
- Successful exercise of any control function is dependent on the social determinants of personality and reasonably mastering the social aspects of management positions and managerial roles.
- Personnel activities of managers with controlled working groups or teams are a necessary and integral element of managerial work. [1]

A necessary and determinative psychological element of governance as one of the basic management functions in the metallurgical organisation is leading people. In both theoretical works and practical application, the English word "leadership" is used. The content of leadership rests in purposeful action by a manager to get to know, make use of and deal with a controlled group of workers. Leadership includes all forms of interactions with people during the course of work.

Proper leadership, which is considered an essential task of executives, should ensure purposeful and continuous harmony of concerns and needs of workers with the goals and tasks of the company. Its essence is most often defined as guiding and motivating the subordinates to quality and creative work. However, this requires a clear and realistic business strategy resulting in personnel strategy, personnel policy and activities of formation and development of staff as the basis for defining specific goals for work teams and individuals in the metallurgical enterprise in accordance with Figure 1. [2]



**Fig. 1** The process and elements of leadership (adapted to [2])

Leadership is one of the most important operations in the management of metallurgical enterprises. The way in which the manager's work indeed essentially determines the outcome of their work and the work of their team in addressing a specific work issue and work activities.

## **2.2 Sociology of Management**

Sociology explores such relations between people that have a more permanent nature and form a basis for creating new social entities. They are first and foremost social groups and social organisations. The sociology of management, in conformity with the general definition of the subject of sociology, deals with the organisation as an association of people connected in a network of technical, legal, economic, social, psychological and other relationships.

The subject of management psychology is the organisation and its layout, and follows the structure of relations between workers and units that these workers create, as well as defines phenomena that influence individual behaviour so as to respect the existence of others. The subject of management sociology also includes social processes in organisations such as social change, mobility or dynamic processes associated with groups and teams of people.

The metallurgical industry in a broad sense and a metallurgical company in particular outlines and links, is a closed loop of business processes, with high levels of physical and mental performance. This fact affects both the production of steel itself, but also its further processing and not least shaping the final form of the

finished product, its refinement and handling activities in individual overlapping processes. Physical and mental stress in a metallurgical enterprise are divided and influenced by the degree of automating various processes and we can say that they mostly operate in parallel. After all, transport of heavy glowing forgings, see. Figure 2, for example, causes both of these types of stress.



**Fig. 2** Transportation of ingot 1195 to the Forge store (adapted to [6])

Relationships between the metallurgical enterprise and other social entities also take an important place in management sociology. These relations can be divided according to what subjects they are associated with, as it significantly affects their nature. In this context, they are particularly relationships:

- With economic enterprises and institutions in the economy, where there are essentially partnering, competing or conflicting relationships. The relationship between the enterprise and trade unions or work councils representing the people takes an important place at this level also;
- With the state and state institutions, where there are no partnership relations. The crucial issue is the creation of conditions and operating rules for the enterprise by the state through legislation (legal norms, social and employment policy), but also the action of lobbyists to state agencies;
- With the public, which can be subdivided into relationships with potential future employees, relationships with customers, consumers and clients.

Sociology of management follows, or includes, other applied disciplines of sociology, i.e. sociology of organisations, businesses, industry, labour, management, market and industrial relations.

Besides these disciplines, the sociology of management turns, or should turn, to some other disciplines containing the knowledge that can be used in management, such as the sociology of public opinion (usable in marketing, in relation to the public), sociology of lifestyle (marketing, shaping consumer), urban sociology and regional sociology (market of manpower, logistics on site), sociology of culture (corporate culture), sociology of youth, women and families (relationship with work activity).

### **3. METALLURGICAL ENTERPRISE CULTURE AND ITS INFLUENCE ON THE BEHAVIOUR AND ACTIONS OF PEOPLE**

Business culture in general and specifically in the metallurgical industry significantly affects people's perception, thinking, emotions (feelings) and dealings. It is a decisive factor of what people accept, refuse, or ignore. The business culture reduces uncertainty by providing meaning and values and by facilitating the interpretation of events. [3]

The human psyche and everything related to it is a complex system which is essentially addressed by an important scientific discipline—psychology of work and engineering psychology. Its essence rests in the fact that, under and through a variety of knowledge and theories, it tries to analyse different work situations, as well as material and social conditions of the working environment and working process. In terms of their physical and psychological impact on humans, relationships in the 'man - machine - working environment' subsystem are examined under the umbrella of ergonomics—the scientific discipline dealing with work.

Managers at all organisational levels of the company should know the theory of managerial psychology and sociology and be able to effectively transform it into everyday life associated with the business, if they want to faultlessly and reasonably manage all issues related to their function. Several scientific studies and research works clearly demonstrate the economic recovery of the costs that are invested in recovery: organisational, educational and technical measures, particularly in manufacturing companies, which ultimately brings positive health and psychological effects.

According to many experts and consultants, the owners and representatives of many Czech enterprises constitute the leading cause of creating an unhealthy corporate culture and one of the largest hindrances in their development. Young people are characterised by enthusiasm and courage to push something new. However, they may only do it in favourable environments and conditions. The problem is also that the predominant part of the management consists of older people, often without the competencies (knowledge, abilities, skills) necessary in the new business environment, inflexible in their decision-making, unwilling to change and learn something new—but holding fast to their functions and positions. For a metallurgical enterprise to achieve good results in the performance of individuals, teams and entire business through restructuring, the property ownership must be stabilised and a healthy and strong corporate culture has to be created. The problem is that the process of developing such a corporate culture takes time. The only way to speed up this process of change is to be able to appoint senior management consisting of capable and unconventional people from outside the company. [4]

### **4. THE PERFORMANCE AND RELIABILITY OF THE HUMAN FACTOR**

With regard to negative year-on-year statistical development in various diseases in the EU, it is evident that the psychosocial aspects of the work environment are of appreciable importance in terms of their depth assessment or analysing the root causes and reasons of their long-term adverse position. The analysis carried out by the European Agency for Safety and Health at Work confirms that diseases caused by physical and psychological stress dominate the occupational diseases in the EU. More than 38 percent represent musculoskeletal diseases, followed by neurological diseases, which constitute 21 percent, and respiratory disease, with more than 14 percent.<sup>2</sup>

When identifying the risks associated with the performance and reliability of the human factor within leadership and people management, with acceptance of all factors within the work process, it is necessary in particular to monitor and assess the processes of shaping the attitudes:

- Activation of people, organising the managed rotation of people, creating opportunities for self-empowerment of individuals and support of talent, promotion of creative and innovative activities,

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<sup>2</sup> SITA, October 8, 2014

respecting attitudes and themes, promotion and appreciation of successful solutions, opinions and suggestions from people;

- Optimising the working environment in all aspects, creating a positive and challenging, yet incentivised work climate and promoting team spirit;
- Delegation of authority and responsibility, distribution of roles according to individual dispositions and abilities;
- Level of vertical and horizontal communication and information flows;
- Incentivised and motivational processes;
- Respect and formation of moral principles and discipline;
- Detection and effective use of information on attitudes and reasonable needs of the people.

Large deviations from the ideal definition and conditions of the work environment, characterised by specific factors operating in the course of the work on people in metallurgical enterprises, which in the neuro-psychological areas may include: monotony, time pressure, shift work, forced pace of work, high responsibility and associated authority, health and life threatening work, social isolation, as well as a combination of sensory and mental stress, all of which can negatively affect the adaptogens, and hence the performance and reliability of the human factor, health status, as well as people's outside activities and personal life.

## CONCLUSION

In terms of psychosocial aspects of the work environment and a specific workplace, metallurgical cycle ranks as being very demanding physically and mentally for its manpower.

Failure to respect people's psychological well-being in the workplace, which is compounded by inappropriate psychological stress and pace of work, ambiguous relationships, organisational structure, job description and contrary to the state where everyone knows what to do, as well as troubled interpersonal relationships, uneasy atmosphere of collegiality, mistrust and irresponsibility in the workplace and in particular people, creates a sense of physical and mental discomfort and stress, which people often do not even realise. They do not know that it is these factors that are causally related to their tiredness, poor performance, lack of concentration and a bad attitude to work, which ultimately brings a reduction in their performance and reliability, which is a small step to damaging the health of people and gives rise to incidents with injuries.

For individuals whose health or happiness has been devastated by the effects of stress, the price of stress is clear. With the increasing pace of life, the changing nature of work and family life, stress is a direct cause of a wide range of diseases. In the developed world, stress is a direct cause of four cases (heart attack, stroke, accidents, suicide and homicide) and indirectly involved in another three (cancer, chronic diseases of the liver and bronchitis). [5]

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