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**THE ROLE OF DIGITALIZATION IN THE PROCESS OF  
PERSONNEL IDENTITY FORMATION**

Valery K. Potemkin (a), Darya V. Velmisova (b), Andrei A. Akhtirskii (c)\*

\*Corresponding author

(a) Saint-Petersburg State Economic University, Saint-Petersburg, Russian Federation, valpot49@gmail.com,

(b) Saint-Petersburg State Economic University, Saint-Petersburg, Russian Federation,

daria-babiy@yandex.ru,

(c) Saint-Petersburg State Economic University, Saint-Petersburg, Russian Federation, andrei\_1893@mail.ru

**Abstract**

Digitalization is not only a complex technical or technical and technological process, but also a social process, when desires, aspirations, orientations are integrated, values and norms of behavior are disseminated not only within the framework of a particular enterprise, industry, territorial entity, but also on an interstate level. The implications of widespread and ubiquitous use of digital technologies for social relations and enterprise personnel management have not been determined. The authors have made an attempt to determine the role of digitalization in personnel identity formation. To do this, the authors compare the results of sociological studies of employees value-motivational meanings in two opposed industries: employees in the financial and credit sector (n = 290) and pedagogical employees in orphanages (n = 175). The researchers were interested in how the value-motivational meanings of employees of the financial and credit sphere will be consolidated with the goals of the industry. The study involved respondents representing various socio-demographic, status and professional qualification groups. As a result, the authors have identified the positive and negative consequences of digitalization in the process of personnel identity forming. The article will be useful for managers, civil servants and researchers of identity, values and digitalization.

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## 1. Introduction

One of the most relevant in sociology is the problem of a person's formation, his awareness of himself in society, the adoption of various social roles - an employee, an expert in a professional field, a family member, friend, leader, etc., the need to integrate multiple identities. It is no coincidence that the concept of "identity" is the subject of interdisciplinary research aimed at various aspects of this socio-psychological phenomenon. Thus, in the context of social relations and social practices transformation, attention is drawn to the important question of whether it is possible to unite professional identities (Guo et al., 2019). Using the example of researches, it has been proved that the integration of two professional identities, the correlation of goals, tasks in activities and role expectations, behavior models - allows you to reduce role conflict, increase the performance of academic entrepreneurship, which is inherently innovative. The condition for the successful integration of roles is individual active position in redefining and reconciling the goals of multiple identities (Schaap et al., 2021). Another direction in the study of professional identity is the analysis of the tension arising from the interaction of the employee's intrapersonal attitudes, external social and labor interactions and the organizational context, first of all, employees self-awareness in social and labor relations and their behavior patterns. An equally important aspect of professional identity formation is the self-understanding of employees in their profession, i.e. subjective images of the content and characteristics of professional roles, skills and knowledge, behavioral attitudes, values, physical appearance, tasks performed, goals and results of activities, organizational environment, valence of the profession for its representatives, symbols and collective climate (Bayerl et al., 2018).

Identity research usually focuses on one of two aspects of its formation: personal (describing oneself and one's role in the community) or collective (describing "us" as a community), paying attention to psychological or, accordingly, social problems. In this regard, it seems the most comprehensive study devoted to the role of emotions and cognition as the main psychological processes involved in the formation of personal and collective work identity, and occurring in certain social contexts (Nordhall et al., 2021). In addition, it is noted that identification with the organization is directly related to the formation of group leadership. In particular, it has been proven that in the presence of a strong organizational identity, the feeling of team members' involvement in its success, behavioral models with signs of leadership will be more likely to form (Chrobot-Mason et al., 2016).

At the same time, there are a some negative factors that impede the development of professional and organizational identity, and, as a consequence, inhibit the development of organizations and employees. Negative factors for professional identity formation are the professional roles change within organizational changes, as a result the employee experiences a loss of control (Nordhall et al., 2021), as well as the innovative technologies development, for example, robotics (Savela et al., 2021). The expert method established the direction and degree of digital technologies influence on the indicators of intra-organization activities affecting group identity formation: the clarity of the goals - 22%; organization development - 23%; adherence to values and obligations - 20%; staff motivation - 22%; teamwork planning - 16%; professional communications development - 17%; in-house trust - 15%, etc. (Potemkin, 2021). Digitalization means not only changing the tools used in work activities, but also changing the

very nature of work processes, which is why the internal needs of employees are so important - the need for autonomy, competence, and relatedness (Selimović et al., 2021). In this regard, the problem of analyzing the value-semantic foundations of social roles and the process of their internalization by the personality, the integration of contradictory role requirements in a single system of life-meaning orientations, depending on the social context, is actualized.

In our opinion, value-motivational meanings should be interpreted as a cultural product, a component of the social portrait of society in the context of a particular historical period, changing under the influence of various social processes and reflecting the characteristic features of individual social groups, depending on their age and gender, religious, professional - qualification and other characteristics (Velmisova, 2019). In this regard, the definition of the structure and content of the system of value-motivational meanings is, on the one hand, a necessary condition for the formation of various social and professional groups, and on the other hand, a factor in employees professional identification in the context of their social roles.

## **2. Problem Statement**

Schwab and Davis (2019) wrote that "finally, while digital technologies are increasingly influencing our behavior and fragmenting our life experience, human orientation leads to the emergence of new opportunities for finding life goals and understanding everyday activities" (p. 261). A survey of respondents about the impact of digital technologies on business operations gave a completely unfavorable result: one third of respondents have a clear idea of what the company wants to achieve; every sixth employee focused his work on the most important goals of the team; less than half of the employees are provided with information about the objectives of the operation of enterprises; every eleventh shows the highest level of activity and commitment to the enterprise, etc. (Potemkin, 2021, p. 239). Most of the research on personnel social identity and the role of digitalization in this process covers general issues of diagnostics and analysis of the content side of value orientations, work motivation, intra- and intergroup value contradictions (Potemkin, & Rasskazova, 2020; Saether, 2019). Insufficient attention is paid to a comprehensive understanding of the process of value-motivational meanings formation as a factor in professional identity development and modeling of their impact on personnel performance.

## **3. Research Questions**

The question remains about the nature of the influence of digital technologies on the processes of employees professional identification, whether this factor has a positive effect or slows down the process of employees' identification with the organization and professional social community. The researchers were interested in how the value-motivational meanings of employees of the financial and credit sphere will be consolidated with the goals of the industry. Has a single identity of "financial and credit workers" been formed? Will the levels of commitment and awareness of organizational goals and mission differ in the two different samples? What is the role of digitalization in shaping the social identity of professional groups?

#### **4. Purpose of the Study**

The authors made an attempt to determine the impact of digitalization on personnel identity formation. The analysis was based on the results of a study of the value-motivational meanings of representatives in two professional groups: employees of the financial and credit sector and teachers of orphanages. The comparison was made purposefully because the industries under study are at various stages of digitalization: financial and credit organizations are among the flagships of the digital economy, quickly introducing digital technologies, while institutions for orphans still do not use digital technologies in their activities.

#### **5. Research Methods**

The survey of two groups was carried out using the author's methods of researching value-motivational meanings, implemented in the form of questionnaires based on the Likert scale. The main diagnostic construct is value-motivational meanings, reflecting the relationship of a person with the social and labor reality, as a more general category that connects personal values, motives and life meanings of an employee. The study was carried out in the period 2016 - 2020. The study of the financial and credit sector involved 290 respondents representing various socio-demographic, status and professional qualification groups. The study of pedagogical workers in orphanages included a questionnaire survey of 175 pedagogical workers of various age and professional qualification groups.

The processing of the initial data set was carried out using the SPSS Statistics statistical package, further calculations, the construction of pivot tables and the graphical presentation of the results were carried out in the MS Excel office package, to test the hypothesis about the relationships between the variables, the Spearman, Kruskal-Wallis, Mann-Whitney coefficients were used.

#### **6. Findings**

##### *Results of the study of the financial and credit sector*

It should be noted that the conditions for the value-motivational meanings formation in the financial and credit sphere have a number of unique features. First of all, the financial and credit sphere was among the first sectors of the economy to feel the impact of digital technologies, which entailed a number of socio-economic consequences, incl. changes in the management structure of organizations, reduction and disappearance of a number of specialties, changes in qualification requirements for employees of various status and professional qualification groups, transformation of social and labor relations, etc. The behavioral models of professional success have changed. Thus, the heads of financial and credit institutions note that there are two main trends: traditional banking services are moving to IT giants that accumulate the strongest development teams, and local financial projects appear that cover narrow financial needs, i.e. specialization takes place at the level of enterprises in the financial and credit sector (Petelin, 2019). The development of organizations in the financial and credit sector is associated with an increase in the share of customers served “digitally” (Bastari et al., 2020). Thus, despite the differences in the scale of activity, the intra-industry specialization of certain groups of organizations, the

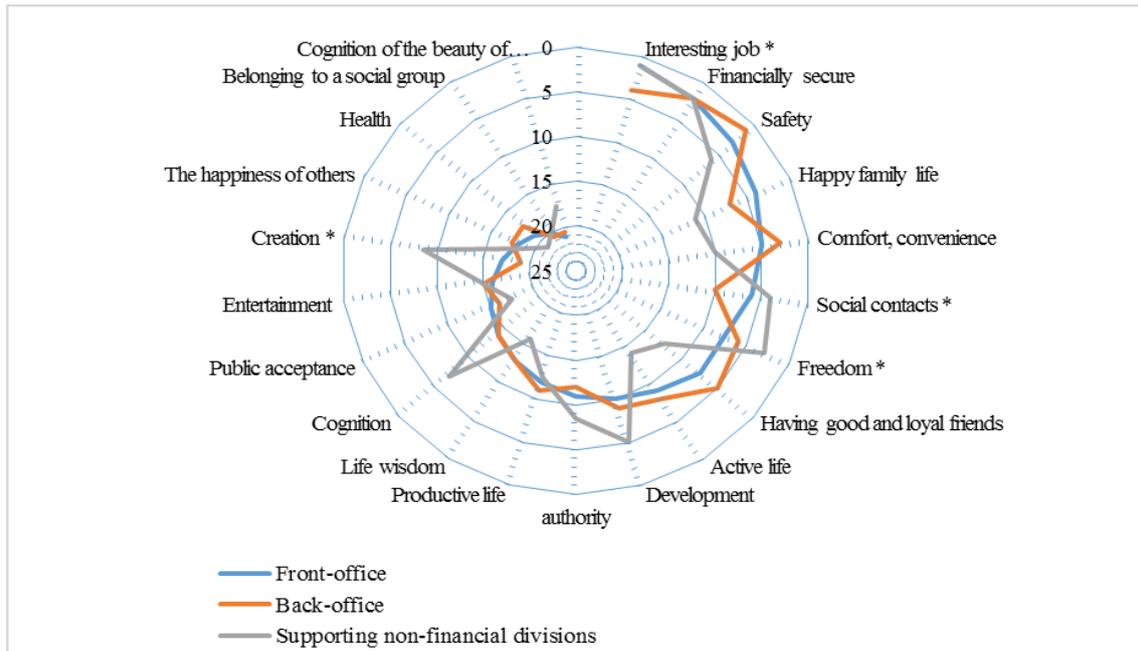
requirement for the absolute digitalization of all business processes is common to all participants in this sector. The second characteristic feature of social and labor relations in the financial and credit sphere is the collective nature of work and the impossibility of providing services by one independent specialist. Based on the included observation and content analysis of documents, three professional qualification groups were identified that take part in the implementation of business processes in a commercial bank: front-office, back-office, supporting non-financial divisions. The quality of interaction between the units of these groups, expressed in speed, accuracy of information transfer, absence of conflicts, etc., directly affects the financial result of the organization, its efficiency and image in the external environment.

On the one hand, digitalization, the introduction of digital channels accelerates information and communication processes, creating a virtual space for interaction both inside and outside the organization. However, the study of the value-motivational meanings made it possible to reveal a number of contradictions, consisting in deep semantic inconsistencies in the ideas of employees about the goals and methods of activity with the requirements of this high-tech industry, as well as their internal inconsistency within the status and professional qualification groups.

Despite the high level of digitalization of the industry, using modern communication tools, designed to form a single information and communication space, there is no unity in the minds of employees in understanding the goals and methods of carrying out job-activities. At the same time, the unity of the goals of the activity and group consistency of role models of successful behavior are among the most important features of professional identity.

A meaningful analysis of the results obtained allows us to speak of the presence of three professional and qualification groups, differing from each other in the nature of the tasks performed, goals of activity, qualification requirements for employees, ways of organizing joint work, and at the same time, characterized by intragroup unity in understanding the characteristics of the professional role performed ideas about the ideal worker, his ways of activity. At the same time, attention is drawn to the fact that such a meaning as "belonging to a social group" is of low importance for representatives of all professional and qualifying groups, i.e. is not seen as valuable or personally significant. Given the underdevelopment of social management in the financial and credit sphere, inattention of the management to the socio-cultural dimensions of motivation (Plotnikov, 2010), the use of a predominantly authoritarian management style, this indicates an insufficiently formed need for employees to identify with the enterprise. This conclusion is confirmed by the fact that there are no clear boundaries of the social and professional group "bank employees" or "employees of the financial and credit sector", there is not only a unified grading system and professional standards, vocational training, but also a unified information and communication industry space. The formation of identity in the digital environment is characterized by the absence of internal value-semantic prerequisites in the form of employees' understanding of their new role, goals and current models of behavior in the new working conditions.

Figure shows data on the structure of value-motivational meanings of employees of the financial and credit sphere, belonging to professional qualification groups (Figure 1).



**Figure 1.** The structure of value-motivational meanings of employees of the financial and credit sphere

*Results of the study of value-motivational meanings of pedagogical workers of orphanages.* The functioning of orphanages in Russia is carried out without the use (or partial use) of information technology. Management activities are carried out on the basis of traditional methods of influencing personnel. However, as the result of the study of value-motivational meanings, it was found that among the teaching staff of orphanages there is a sense of unity in professional activity. Adherence to such meanings as "independence and freedom of action" is characteristic of teachers of all professional qualification groups; "Have a high income"; "Combine personal hobbies with professional activities"; "Look for new adventures and live brightly"; "Fairness and honesty"; "Harmony with people and the world." And also devaluation of the meanings "the opportunity to achieve success"; "The opportunity to improve qualifications"; "Upgrade status" or "have additional benefits." The meaning of "work pleasure" is strongly correlated with the meaning of "fairness and honesty" ( $r = 0.9, p = 0.01$ ) and the meaning of "harmony with people and the world" ( $r = 0.8, p = 0.01$ ).

At the same time, the problematic situation reflecting the involvement of employees in the labor process and their involvement in the goals of the organization is the level of employee awareness. Over the course of four years, only 37.7% of teachers were satisfied with this parameter. Hence, by the way, the dissatisfaction of teachers with the level of the most important indicator of the identity of personnel for orphanages is "the awareness of the institution's mission by the staff". At the same time, it is statistically confirmed that the satisfaction of teachers with relations with colleagues and the administration and their development will be influenced by the awareness of the staff of the orphanage institution of the general mission of the institution ( $r = 0.75$ ).

In addition to this, we have statistically registered a significant difference between the satisfaction of young teachers (under 30) and other age groups. The former feel less "the recognition of their labor by the administration" ( $p = 0.05$ ) and are satisfied with the "awareness of the mission of the

orphan institution by the whole team" ( $p = 0.05$ ). Based on these indicators, it can be argued that in the organizational context, the necessary norms and the formation of the identity of new employees are not being instilled.

Assessment of the degree of satisfaction with the labor process by pedagogical workers of orphanages is shown in the table (Table 1).

**Table 1.** Assessment of the degree of satisfaction with the labor process by pedagogical workers of orphanages

Value-motivational meanings	2016 г.			2020 г.		
	Importance	Satisfaction	+/-	Importance	Satisfaction	+/-
Convenient schedule	8.6	7.4	-1.1	5.1	4.6	-0.5
Recognition of labor by the administration	9.0	7.1	-1.9	5.1	3.7	-1.4
Recognition of work by colleagues	8.1	7.8	-0.3	-	-	-
Recognition of labor by children	8.9	7.4	-1.5	5.1	4.5	-0.6
Good relationship with the administration	9.3	7.7	-1.6	5.1	4.0	-1.1
The opportunity to take part in important and important events together with the team	-	-	-	4	4.1	0.1
Opportunity to achieve success, improve status	-	-	-	3.9	4.1	0.3
Opportunity to study, improve qualifications	-	-	-	4.1	4.3	0.2
Interest in work	9.2	9.1	-0.1	-	-	-
Good relationships with colleagues (teachers)	9.1	8.8	-0.3	5.2	4.6	-0.6
Awareness by the whole team of the center's mission, of involvement in one common cause: to teach children in difficult life situations, to live independently in our society, to raise a full-fledged citizen of russia.	-	-	-	5.1	3.3	-1.8
Awareness	8.4	6.4	-2.0	5.1	3.7	-1.4
Timeliness of wages	9.8	9.9	+0.1	-	-	-
Salary level	9.0	8.0	-1	5.0	4.0	-1
Amount of premiums, allowances	9.0	6.9	-2.1	5.0	3.5	-1.5
Distribution of awards	9.0	6.5	-2.5	4.7	3.2	-1.5
Availability of benefits	7.4	5.0	-2.4	4.0	3.3	-0.7
Compliance of the personal business qualities of the head of the center with your expectations	-	-	-	5.0	4.5	0.5

Note: The 2016 study used a 10-point rating scale. The 2020 study used a 6-point rating scale

As a result, the heads of orphanages ( $n = 25$ ) note that orphanages are very autonomous, closed from each other, characterized by a low level of interaction and are not united by a common strategy of educational work with orphans at the state and regional levels; the pedagogical process in orphanages is fragmented and chaotic; the lack of a common understanding of the mission and purpose of the educational process between orphanages, and their isolation from each other is reflected in the labor process and socialization of orphans.

## 7. Conclusion

The use of information technology in the process of personnel identity formation is controversial. Using the example of a sample of teaching staff, it can be stated that the formation of a single value-semantic field, as a predictor of identity in teams, can be carried out without the use of digital

technologies. The process of professional identity forming has systemic and structural nature, which begins from the professionalization in high school.

This conclusion is also confirmed by the second sample under study, “employees of financial and credit sector,” who are among the first to use digital technologies in their professional activities. However, the absence of a unified system of legal regulation and professional training slows down the processes of forming identity in collectives.

However, digitalization can serve as a tool for the development of value-motivational meanings, consolidating the professional identity of employees. As we have empirically registered, the absence of communication system links between orphanages creates a misunderstanding of general approaches in the pedagogical process, which directly affects the social adaptation of orphans. At the same time, the development of digital technologies and the communication system in the financial and credit sector clearly demonstrate their imperfection and unattainability of the main results in the formation of a common understanding of the goals and methods of carrying out activities within the professional community. There are discrepancies in the understanding of the objectives of the activity between the professional qualification subgroups, and “belonging to the community” is not significant for employees. Thus, based on the generalized theoretical and empirical material, we can conclude that the process of forming the identity of personnel in companies cannot be carried out based only on digital technologies.

## References

- Bastari, A., Eliyana, A., Syabarrudin, A., Arief, Z., & Emur, A. P. (2020). Digitalization in banking sector: the role of intrinsic motivation, *Heliyon*, 6(12). <https://doi.org/10.1016/j.heliyon.2020.e05801>
- Bayerl, P.S., Horton, K.E., & Jacobs, G. (2018). How do we describe our professional selves? Investigating collective identity configurations across professions, *Journal of Vocational Behavior*, 107, 168-181. <https://doi.org/10.1016/j.jvb.2018.04.006>
- Chrobot-Mason, D., Gerbasi, A., & Cullen-Lester, K. L. (2016). Predicting leadership relations: The importance of collective identity, *The leadership Quarterly*, 27(2), 298-311. <https://doi.org/10.1016/j.leaqua.2016.02.003>
- Guo, F., Lloyd, D., Restubog, S., Cui, L., Zou, B., & Choi, Y. (2019). What determines the entrepreneurial success of academics? Navigating multiple social identities in the hybrid career of academic entrepreneurs, *Journal of Vocational Behavior*, 112, 241-254. <https://doi.org/10.1016/j.jvb.2019.03.003>
- Nordhall, O., Knez, I., & Willander, J. (2021). Emotion and cognition in personal and collective work-identity formation: variable and person-oriented analyses, *Heliyon*, 7(6). <https://doi.org/10.1016/j.heliyon.2021.e07210>
- Plotnikov, G. V. (2010). *Realizatsiya motivatsionnoy funktsii oplaty truda v bankovskoy sfere* [Implementation of the motivational function of remuneration in the banking sector] [Doctoral Dissertation]. Krasnodar.
- Petelin, N. (2019, December 13). Interview: Chto nuzhno kliyentu, esli bank emu ne nuzhen? [Interview: What does a person need if he does not need a bank?] *Banki.ru*. Retrieved from: <https://www.banki.ru/news/columnists/?id=10911413>
- Potemkin, V. K. (2021). *Cifrovaya tekhnologicheskaya ekspansiya v sisteme upravleniya personalom* [Digital technological expansion in the personnel management system]. In V. K. Potemkin (Ed.), *Sotsial'nyye problemy chelovekoorientirovannogo upravleniya predpriyatiyami i organizatsiyami: sbornik izbrannykh nauchnykh statey* [Social problems of human-centered management of enterprises and organizations: a collection of selected scientific articles]. Info-Da.

- Potemkin, V., & Rasskazova, O. (2020). Digital competence of employees and the value of human resources in the development strategy of enterprises. *2020 IOP Conference Series: Materials Science and Engineering*, 940, 012098. <https://doi.org/10.1088/1757-899X/940/1/012098>
- Saether, E. A. (2019). Motivational antecedents to high-tech R&D employees' innovative work behavior: Self-determined motivation, person-organization fit, organization support of creativity, and pay justice, *The Journal of High Technology Management Research*, 30(2). <https://doi.org/10.1016/j.hitech.2019.100350>
- Savela, N., Kaakinen, M., Ellonen, N., & Oksanen, A. (2021). Sharing a work team with robots: The negative effect of robot co-workers on in-group identification with the work team, *Computers in Human Behavior*, 115. <https://doi.org/10.1016/j.chb.2020.106585>
- Schaap, H., Van der Want, A. C., Oolbekkink-Marchand, H. W., & Meijer, P. C. (2021). Changes over time in the professional identity tensions of Dutch early-career teachers, *Teaching and Teacher Education*, 100. <https://doi.org/10.1016/j.tate.2021.103283>
- Schwab, K., & Davis, N. (2019). *Tekhnologii chetvertoy promyshlennoy revolyutsii* [Shaping The Fourth Industrial Revolution]. Eksmo.
- Selimović J., Pilav-Velic A., & Krndzija L. (2021). Digital workplace transformation in the financial service sector: Investigating the relationship between employees' expectations and intentions. *Technology in Society*, 66, 101640. <https://doi.org/10.1016/j.techsoc.2021.101640>
- Velmisova, D. V. (2019). *Tsennostno-motivatsionnyye smysly rabotnikov finansovo-kreditnoy sfery v kontekste modernizatsii obshchestvennykh otnosheniy* [Value and motivational meanings of employees of the financial and credit sector in the context of the social relations modernization]. Info-Da.