

Work-Related Identity of Clinical Research Sector Employees in Poland Against Professional Transformation of the Industry

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Abstract

Purpose: Established professions and knowledge workers identify more with their professional groups than with their organisations. The purpose of the study was to find what kind of work-related identities are shown by clinical research sector employees in Poland, what is the intensity of those identities and which one is dominant.

Methodology: The study started with qualitative interviews dedicated to professional changes and to work-related identity. The latter was selected for the main quantitative part of the study and its five types were defined related to the trained profession, the practised profession, organizational, relational and task-related work identities. Intensity of these pre-defined identities was tested with a use of a questionnaire completed by 147 representatives of the sector under study. Statistical analysis of the collected data verified the research hypotheses that assumed a certain gradation of these work-related identities.

Results: Professional identity related to the practised occupation was placed on the highest level followed by task-related identity. Relational and organisational identities were classified on the third and fourth levels. Identity related to the trained occupation achieved the lowest score. The employing organization type had no effect on the manifested professional identity.

Originality value: As a developing new occupation, the study group itself was an interesting population for studying work-related identity. Combining the qualitative and quantitative methods enabled evaluation of the results against the professional changes shaping the sector, which can have an impact on building the work-related identity of its employees.

Keywords: social identity, professional identity, organisational identity

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Introduction

The process of formation and decline of professions and occupations is an ongoing one. Nowadays it happens even faster than in the past and one can observe new occupations appearing in the labour market. New occupations are sourced by individuals from various professional groups leading to changes in their professional careers (Abbott, 1988). As a result, many employees do a job that is not consistent with the education they have (SW Research, 2014).

The following sections of this article presents the transformation of the Poland labour market and the factors that influence the changes are discussed, which is followed by a description of various types of work-related identity that can be developed by employees. The phenomenon in which established professions and knowledge workers tend to identify more with the profession they represent than with their organisations is also described. The article describes a group of employees, representatives of the knowledge workers, who changed their professional careers and practised occupations different from their education.

The results of the current study show that although many of the study group members represent established professions (physicians, pharmacists) or other medical occupations, their professional identities related to the trained occupation is expressed on a lower level than any other work related identity. Professional identity related to practised occupation and identity related to the performed activity/project achieved the highest score. Identities related to the organisation and relational identities were placed in the middle.

Professions and Occupations

The term *profession* was used as early as in the 16th century to describe free professions, which at that time included doctors, lawyers or priests. Professions arose when organized groups of people possessed knowledge and abilities that were unique and valuable for the society (Carr-Saunders and Wilson, 1933; Mac-Donald, 1995; in: Pratt, Rockmann and Kaufmann, 2006), and the society was willing to grant them certain levels of prestige and autonomy (Larson, 1977; in: Pratt et al., 2006).

Most characteristics defined in attributive theories that describe professions are not relevant to newly created occupations or to the contemporary labour market. Similarly, not all stages or strategies of professionalization can be assigned to newly created

occupational groups (Czarkowska, 2010; Jemielniak, 2008). Many occupations that arise in the modern world can be assigned to a group of knowledge workers, hired by “knowledge-intensive” organizations. A knowledge-intensive organization is one in which most of the work performed is of an intellectual character and delivers products or services that require a high level of competency, using the knowledge of their employees as their key resource. It is an organization in which most tasks are performed by well-educated and qualified employees (Alvesson, 1995; Morris and Empson, 1998; Starbuck, 1992; in: Alvesson, 2000).

Professional Transformations In The Labour Market

The process of formation and decline of certain professions and occupations is an ongoing one. As opposed to organizations, which have a clearly defined beginning (usually the moment of registration required by the law), the birth of a profession is much harder to place in time. First representatives of a profession or occupation, scattered across many different societies, may see themselves as pioneers and be unaware of the existence of other people performing the same kind of work. Pioneers who contribute to the development of a professional group are often no longer available to researchers once they become interested in this new occupation. Nowadays one can observe very dynamic changes that bear witness to the formation of new professional groups and also see the decline of those whose services are no longer needed by the society (Nelsen and Barley, 1997).

Newly established activities are usually undertaken by existing professional groups. As a result, people educated in a certain field change their professional careers and start performing work that cannot be directly related with their education. There are numerous reasons for workers to change their occupation and to take up work that is inconsistent with their education. Some of them are forced to do so as they are unable to find a job in their field of expertise; others decide to change their occupation when a new interesting position opens in a developing area, where specialists in in have not yet developed (Abbott, 1988).

The aforementioned March 2014 study of “Young people on the labour market” was performed on a group of 1,202 young people, all students and graduates of Polish universities. It showed that only 44% of them had a job consistent with their education and others performed different work. Among graduates looking for a job, as many as 83% of them were willing to take up a job not matching their education.

Factors Influencing The Labour Market

External factors

One of the external factors that strongly influenced the contemporary labour market is technological changes. Machines and robots often replace physical workers and create jobs for specialists who invent, construct and then operate high-tech devices. Technological development created fields that had to be dealt with by properly educated people, scientists and engineers with various specializations (Abbott, 1988; Nelsen and Barley, 1997).

Another significant factor that influenced the labour market was the establishment of large organizations. Such organizations created a large number of job vacancies, both internally and externally. Inside large organizations, administrative and managerial roles appeared. An organization also orders various external services, thus generating work for other professional groups (Abbott, 1988).

Another factor leading to the creation of new occupations was social changes and increasing wealth of the society. Such changes made many people more eager to delegate work to other people that they once used to take care of on their own, as part of their unpaid domestic or family duties like done in weaving, and nowadays done by babysitters or housekeepers (Nelsen and Barley, 1997).

Internal factors

High expectations in numerous aspects of life force representatives of certain professions and occupations to focus on their key responsibilities and delegate simpler tasks to other professional groups cooperating with them. An example of that is delegation of repetitive calculations and tests by engineers to engineering technicians, or medical technicians specialized in various fields who take over some responsibilities of physicians and registered nurses. Sometimes the result of such a process is the appearance of a new professional group that takes over a certain part of responsibilities of a previously existing profession or occupation (Abbott, 1988; Nelsen and Barley, 1997).

New professional groups can also develop as a result of specialization, which is inevitable when the required knowledge and skills exceed the capabilities of one person. An example of this type of specialization and division within a professional group is physicians. Consequently, this forces specialization within a profession or occupation that leads to the creation of a separate professional group (Abbott, 1988).

Study Group

One of the relatively new business areas in Poland is the clinical research business. Representatives of this sector are thus a good study group to observe changes in the labour market as previously described, as they are a new developing group that sources employees from various occupational groups, causing them to convert professionally. The professional transformations in the clinical research market in Poland, in light of the political, economic and social changes followed by the study group, are described in the subsequent sections.

Factors initiating the clinical research sector in Poland

Clinical research on a large scale (i.e., commercial research) has been performed in the world since the beginnings of the past century, but until the 1990's it was carried out mostly in the USA, Canada, Japan and Western European countries (Varsavsky and Platonov, 2004). The clinical research sector in Poland developed as a result of growing competition and searching for new markets for this kind of activity by the pharmaceutical industry. The introduction of global standards for performing clinical research in the 1990's allowed using clinical data collected in any country that kept those standards. Political and economic changes occurring at that time made Poland a reliable market to perform this kind of activity. The first clinical studies began in Poland in 1994; however, the biggest growth occurred in the middle of the 1990's (GCPpl, 2004). After Poland joined the European Union (EU) and accepted its directives that regulated the rules of clinical research, Poland became a reliable market to perform this kind of activity. EU membership additionally improved the practical part of performing clinical trials, for example, by simplifying the process of transporting medical equipment between countries. These changes encouraged the pharmaceutical industry to establish businesses in Poland, creating ground for a new previously non-existent sector of clinical trials in this part of Europe (Karlberg, 2008). Since 2009, over 400 new clinical studies have been registered in Poland each year (PriceWaterhouseCoopers, 2015). Today, Poland is one of the top ten clinical trials markets and the number of investigational centres registered in Poland is comparable with Great Britain (Clinical Trial Magnifier, 2015).

First professions in the business

The clinical trials sector, as a new medicine-related business, was first dominated by physicians employed in it. A difficult situation in Polish medicine at that time made it easier to recruit physicians to work in the pharmaceutical industry. In the 1990s

and early 2000s, medical universities in Poland educated many physicians, and that led to a situation in which not all graduates of medical universities could find employment. Young physicians at the beginning of their careers found it hard to accept proposed financial conditions and difficult working conditions. The clinical research market was an attractive alternative for them, both for financial reasons and for the possibilities of professional development and international cooperation.

“I was just so surprised, first of all by this total inability and those feudal relations, (...). And there was the financial aspect, also really frustrating.”

Changes opening the market for new professions

Since 1995, admissions to medical universities have been limited, which resulted in a lower number of new graduates in the mid-2000s. At the same time, remuneration of doctors increased and more than double growth occurred between 2002 and 2010.

Additionally, new forms of employment appeared in the market of medical services, allowing physicians to have more options to choose and to find employment in a place where atmosphere and relations at work were more satisfying for them.

“(...) They make their own decisions, they work where they like, where they can and if something’s wrong, they can just resign and go somewhere else.”

New professions taking over the market

With a smaller inflow of physicians and growing needs of the market, new professional groups started to apply for work, mostly people with education in chemistry or biology, as well as other medicine-related fields. Young graduates of majors such as pharmacy, biotechnology, biology and chemistry started to feel frustrated for not being able to work in the area that they were educated in.

“So they finished biotechnology and suddenly it turns out there is no money, that their job is just pointless and dull somewhere, in some laboratory, there’s no creativity, and low salary comes along with that.”

What is more, many pioneers in the business are still active in the sector of clinical research, which allows making use of their knowledge and experience during the research. This group can be treated as knowledge workers. It also possesses a unique

set of attributes that can influence the development of work-related identity in an interesting way.

Education – trained occupation

This category is interesting due to a significant diversity in the types of represented education profiles. Some workers within the clinical research sector are physicians or pharmacists, which means that they represent classic professions by education. Others represent medicine-related professions and occupations (biologists, chemists, biotechnologists). There are also those with educational profiles that are not related with biological sciences. They have decided to change their occupations. Many of them are people who were able to develop a strong professional identity related with their trained profession due to a long educational process.

Occupation

It is a new professional group that appeared in Poland with the development of clinical research in the middle of the 1990's. This group belongs to the category of knowledge workers.

Employer

Clinical research can be performed by a variety of institutions and scientific organizations for the purposes of science, or by organizations whose purpose is to discover, test and introduce a new medicine to the market. Most clinical research carried out in Poland is led by such commercial organizations. Clinical trials can be performed directly by a sponsor (a pharmaceutical or biotechnological company) or a contract research organization (CRO), which is an organization whose sponsor orders the performance of certain tasks related with clinical research. In the first case, employees carry out the orders of their own organization, working on its products. In a CRO company, an employee performs certain tasks for various sponsors. Both types of organizations are usually big international corporations that can have a significant role in the development of an employee's work-related identity.

Identity

Transformations in the labour market, the appearance of new occupations and professional conversion of representatives of existing professions create an interesting

background for considering how those changes influence work-related identities of employees.

Social identity

Identity is a term consisting of two main components: individual identity and an unlimited number of social identities. Individual identity is an idea of an individual about oneself, which is unique and specific for that one person only (Postmes and Jetten, 2006; in: Ashforth, Harrison and Corley, 2008). Each social identity is shared with other members of the group (Ashforth et al., 2008).

The creators of social identity theory were Henri Tajfel and John Turner, who defined it as the part of one's own personality awareness that comes from the knowledge of which social group or groups an individual belongs to, along with the meaning and emotional value attached with belonging to each particular group (Tajfel, 1981; Tajfel, 1982; in: Ashforth et al., 2008). The three factors defined as cognitive, evaluative and affective are the basis for the social identity theory, they are its core and appear in the most concise definition of this term. The broadest definitions of social identity additionally include behaviour (Ashforth et al., 2008).

Social identity is created around a certain category, i.e., a group defined by a set of traits common to all of its members. An individual notices similarities between oneself and other members of the group, perceiving oneself and others as a common social group, which subsequently becomes the basis for building one's social identity. According to the social identity and categorization theories, members of social groups can associate themselves with various social groups, identify themselves with them and strive to accentuate differences between their own group and other groups (Tajfel and Turner, 1985; in: Ashforth and Mael, 1989).

Work-related

An individual can present multiple social identities. Various social situations may cause one specific identity to become dominant, influencing the thoughts, emotions and behaviour of an individual in a unique manner (Gecas, 1982; Dutton et al., 1994).

Work-related identity is a form of social identity that individuals can develop in their professional environment. In the professional area, the source of social identity can be different groups functioning within a working organization, the organization itself or the task in which the person is involved.

Organisational identity

Organisational identity is presented by people who above all feel a member of the working organization (Ashforth and Mael, 1989).

The concept of organisational identity was particularly thoroughly examined in the last 20 years. Numerous theoretical and empirical papers on the subject of social identity and work-related identity were written, both in organisational studies and social psychology, and both from a static (essential) point of view, i.e., analysis of dominant identity of an individual or social groups, and from a dynamic (post-structural) point of view (Sveningsson and Alvesson, 2003; Ibarra, 1999; Pratt et al., 2006; Larson and Pepper, 2003) that is the process of developing an identity.

Definitions of organisational identity proposed by researchers of the essential stream include many similarities. At some points, they differ in varying degrees to match another term, which is organisational commitment (Cornelissen, Haslam and Balmer, 2007; Van Dick, Wagner, Stellmacher, Christ and Tissington, 2005). A complex analysis of the definition of organisational identity proposed by different authors was performed by Edwards (2005).

Van Dick (2001, 2004) developed the social identity theory by identifying four elements of identity: affective, cognitive, evaluative and behavioural (actions). The last volitional element (actions) extends the definition to include a non-subjective element. The author explained that members of social groups who identify themselves with a group they belong to, compare their own group with other groups, attempting to make their own group look as good as possible in that comparison, is the ground for their self-esteem. This makes them work hard for the benefit of the group, to make the comparison look as good as possible, giving them personal satisfaction. Therefore, according to the author, the willingness to work for the benefit of the group within one's role and making additional efforts outside of that role is a justified element of organisational identity.

Relational and collective identity

Some researchers distinguish a relational identity and a collective identity (Ashforth et al., 2008; Brewer and Gardner, 1996; Sluss and Ashforth, 2007). An employee who identifies oneself with co-workers, supervisors or subordinates presents a relational identity which relates to an interpersonal level. An employee who identifies oneself mostly with their working group or department presents a collective identity on a group level. It is easier for an individual to identify with a smaller group than a big organization,

as the latter poses a greater threat to the identity of an individual. In a small group, it is easier to find similarities and common traits with its other members, with whom one also spends the most time (Ashforth et al., 2008; Van Knippenberg and Van Schie, 2000).

Professional identity

Professional identity is based on the identity theory, which is a different concept than the social identity theory in that identity is not a result of belonging to a group, for example an organization or a professional group. Instead it is related with roles fulfilled in the society, including professional ones, as well as other social roles (Styker and Burke, 2000; Ashforth et al., 2008; Burke and Reitzes, 1991).

Professional identity is a set of attitudes, beliefs, values and experiences through which an individual defines oneself in their professional role. It is a sense of belonging to a group of people, for which a mutual category is a certain education or current profession or occupation. Professional identity is particularly flexible in the initial stages of professional life and then it becomes adjusted to different professional situations (Schein, 1978; in: Ibarra, 1999).

Professional roles are chosen at the beginning of a stage of professional formation, even before starting work in a given organization. Thus, professional identity related with one's acquired profession has the chance to develop earlier than other work-related identities (Bamber and Iyer, 2002).

Many professions, especially those that require long specialist training and boast a high level of prestige, present strong professional identity and loyalty towards their professional group, which often dominates their organisational identity. It was described that a very high level of professional identity was presented by physicians, for whom belonging to a professional group was more important than organisational membership (Pratt et al., 2006). Similar phenomenon was observed among journalists (Russo, 1998) and lawyers (Gouldner, 1957).

Groups of knowledge workers do not have uniform educations, characteristic for established professions, which is the basis for development of professional identity. This is along with unique knowledge and experience that come from a uniform educational process that can form a category competitive to belonging to the organisation. They can base their legitimization on knowledge that is more of an organisational character (Alvesson, 2000). Nevertheless, the dominant professional identity was observed in the groups of knowledge workers that don't belong to traditional professions.

Strong professional identity has been described in groups of IT workers (Czarkowska, 2010, Jemielniak, 2008; Marks and Scholarios, 2007) and financial auditors (Bamber and Iyer, 2002).

It was also shown that professional and organisational identities can coexist, especially when the organization meets the needs and goals of the profession. The efforts of the organization to support the professional identity of its employees at the same time reinforce organizational identity (Bamber and Iyer, 2002; Johnson, Morgeson, Ilgen, Meyer and Lloyd, 2006; Kunda, 1992)

Situational/task related identity

Another type of identity is task-related identity, also called situational identity. An employee who shows situational/task related identity develops that identity in a certain professional situation related with a performed task, its realization and aiming towards a specified goal. This type of identity is easy to develop, but also easy to lose, when the unique situation that triggered it or a task performed by a certain group comes to an end (Rousseau, 1998).

Free mercenary

Another case is a situation when a person does not identify oneself with any social group, but develops a strong individual identity: entrepreneurs working on their own. Such people usually do not show great loyalty towards their employer and they become individual entrepreneurs (Alvesson, 2000). This attitude is similar to the described attitude of a “free mercenary”, i.e., an employee who does not identify oneself with any organization, and only performs certain tasks for its benefit. Such an employee performs work for an organization only if that is in accordance with one’s individual goals, and the relation between an employee and an organization is purely rational without any emotional significance (Kozmiński, 2004).

Significance of work-related identity

Work-related identity influences the behaviour and attitudes of employees, positive and desired, as well as negative. E. Mayo in his studies in the 1930s showed that job satisfaction is associated with a sense of belonging to a group (Adair, 2000). Job satisfaction is one of a desired effects of work-related identity and the relation between them was described in many papers (Czarnota-Bojarska, 2010; Ricketa, 2005; Van Dick, Hirst, Grojean and Wieseke, 2007; Feather and Rauter, 2004).

Alvesson (2000), Kunda (1992) and Deetz (1995) described strong motivation leading to high productivity in knowledge workers who identified with the job they were doing. Positive effects of identity are engagement and productivity. High work engagement was presented by soldiers and college alumni (Mael and Ashforth, 1992), as well as by accounting office employees (Bamber and Iyer, 2002) who showed work-related identification. Work-related identity ensures a high level of motivation and productivity without any direct control. Normative control is especially important in the groups of knowledge workers where direct control would be difficult to apply (Barker, 1993; Ellemers, Gilder and Haslam, 2004; Jemielniak, 2008; Johnson, Chang and Yang, 2010; Kunda, 1992).

Identity has also an impact on absenteeism, turnover and loyalty (Allen and Meyer, 1996; Alvelsson, 2000; Dukerich, Golden and Shortell, 2002; Kostera, 2008; Ricketa, 2005; Van Knippenberg and Van Schie, 2000).

Increased work-related identity can also have negative and undesirable effects like workaholism (Alvesson and Robertson, 2006; Kunda, 1992), low creativity (Bouchikhi and Kimberly, 2003; Haslam, Ryan, Postmes, Spears, Jetten and Wembley, 2006), or consent to unethical behaviours (Ashforth et al., 2008; Kong, 2015; Kostera, 1996).

The subject of work-related identity is particularly interesting with regard to groups of knowledge workers, influenced by many competing identities, whose work is barely structured and not clearly defined. Knowledge organizations are characterized by low hierarchy levels and low possibilities of work control, which forces knowledge workers to act on the basis of their own understanding. That is why knowledge regarding social groups that work-related identity of employees is built on becomes especially important (Alvesson, 2000).

Aims of Research and Method

The research consists of two parts: the initial exploratory qualitative study followed by the main quantitative part, both preceded by a “desk research.”

Qualitative part of the study

In the first exploratory qualitative part of the research, 27 unstandardized and unstructured qualitative interviews were held with chosen representatives of the business. The investigator turned to a dozen people from the industry with an invitation to

participate in the study. Additionally, each interviewee was asked to recommend another person in the industry who could be asked for an interview. People invited to the research could represent different perspectives and opinions on the business of clinical research in Poland. They were hired or contracted by CRO companies or worked in clinical research departments of pharmaceutical companies. The group consisted of people working in different positions, fulfilling various roles in the sector and having different experience, education and employment history. The scope of responsibilities of the different professional roles in the field of clinical research is fluid and changeable depending on the company and the characteristics and needs of a specific project. Furthermore, these roles are often temporary because most often every employee starting work in the industry must begin his/her career performing in an administrative role and then develops a chosen career path. The hierarchy in this sector is flat and employees represent a similar level of education and as a result, the differences between them are not large. Additionally, the group is very limited. It is estimated that approximately 1,200 people work in Poland as clinical research associates/clinical trial monitors (PriceWaterhouseCoopers, 2010). Many fewer people perform other functions related with leading clinical research. This allows assuming that approximately 1,500 people work in this sector in Poland. Therefore, the researcher decided not to concentrate on the one selected role in the group but invited all representatives willing to take part in the study.

The main goal of this qualitative part of the study was to collect information in two main topics selected for this exploratory research: professionalization and work-related identities in the study group. These topics were quite broad and the plan was to select more precise topics based on the information collected for further quantitative analysis. The interviewees were asked about various aspects of their professional lives that could indicate any manifestations of a particular work-related identity and signs of professionalization. They were asked about their professional careers, professional backgrounds and plans, how they started work in the industry, how they feel in their current professional roles, what they like or dislike in practised occupations. There were also many other questions focused on topics related with professional transformations occurring within the group, processes of professionalization, signs of work-related identities and elements that can influence them.

During the evaluation of the results of this exploratory qualitative part of the study, work-related identity was chosen as a main topic for the second quantitative part of the research. As a result of the previous desk research and analysis of information collected during the first exploratory qualitative part, five types of work-related identity were chosen for qualitative analysis.

- Situational/task related identity – identity of an employee performing certain task(s).
- Organisational identity coming from a sense of connection with the organization of work.
- Relational identity coming from one's relations with co-workers, supervisors or subordinates.
- Professional identity coming from one's trained occupation.
- Professional identity coming from one's practised occupation.

Information related to work-related identity collected during interviews helped to design the main quantitative part of the study in their aspects. First, all knowledge collected during the qualitative part of the study allowed building the study hypotheses. Interview sections saying something about work-related identity were selected and categorized into one of the five pre-defined identities. This evaluation showed that task-oriented identity had been mentioned most frequently, signs of the organizational identity existed but were expressed less often, and that identity oriented on trained or practised occupation was more frequently denied than confirmed by interviewees. Based on the most frequent responses, the conclusion was made that the situations identity was the dominant one in the research group after organizational and relational identity and the professional identity, both related to trained occupation and the practised occupation, was the weakest one. Based on this observation from qualitative research, which was published in a separate paper (Kozierkiewicz, 2013), the hypotheses were stated for evaluation in the main quantitative part of the study.

The second aspect by which this qualitative part of the study helped to design the quantitative part was that the knowledge collected was used in the process of the quantitative research tool construction intended for data collection. Situations described by interviewees, real live examples and language they used helped to prepare a questionnaire used in the main quantitative part of the study.

Finally, this exploratory part of the study was used to describe professional transformations of the clinical research labour market in Poland that frame a background to the professional identity presented by the employees. The article next presents some narratives from this part of the study that illustrates the professional transformations of the sector as a background for the main analysis of the work-related identity in the group.

Quantitative part of the study

The aim of the main quantitative part of the study was to evaluate the work-related identity of the researched group in the form of a static image that occurred after the previously described transformations in the business. The objective was then to examine how strong each type of the five work-related identities predefined after the qualitative part of the study was in the group of clinical research workers in Poland and which was the dominant one.

In this study, identity is understood in a broad manner, including three basic elements defined by the creators of the social identity theory, as well as the behavioural element proposed by Van Dick (2004). The *cognitive* element indicates that an individual is aware of belonging to a group; the *evaluative* element, indicates that an individual considers belonging to a group is valuable for them; and the *affective* element is an employee emotional relation with a group or an organization. Additionally, a fourth element is used to describe *behaviours*, which is a broad aspect of identity indicating the presence or lack of a given work-related identity. The research tool in the form of a survey questionnaire was prepared in such a way that there were two questions for each of the elements listed in the assumed broad definition of social identity (awareness of belonging to the group, emotional factor, evaluative factor and behavioural factor). The questionnaire included two questions from the organisational identification questionnaire proposed by Mael and Ashforth (1992), and all other questions were designed for the purposes of this research based on information collected in the qualitative part of the study. The questionnaire was based on a five point Likert scale, where scores '4' and '5' were used when the responder agreed or strongly agreed with a pre-defined signs of the given identity, '3' was the middle score and scores '2' and '1' were used when a person disagreed or strongly disagreed with the described signs of the given identity.

The research was carried out by means of an online questionnaire, addressed to a group of employees of CRO companies, and clinical research departments of pharmaceutical companies in Poland. Each person asked to fill in the questionnaire was also requested to send it to other colleagues working in the business. In this way, completed questionnaires were collected from 147 respondents with the snowball sampling method. The only available information on the number of clinical trials market employees in Poland came from an industry report previously cited (PriceWaterhouseCoopers, 2010), which estimated that about 1,200 people are working in Poland as clinical trials monitors. The clinical trials market in Poland since 2010 is a stable one so it was assumed that these estimates are still valid. The total numbers of employees that includes line managers, administrators or other supportive roles is unknown, so one can only assume

that there are far fewer. The author estimates that clinical trials market in Poland employs about 1,500 people. 147 questionnaires were collected in the study, almost 10% of the study population. It was not possible to select a random sample in the study because a list of all employees in the industry was not available. For this reason, a snowball method was used for a sample selection that did not allow concluding that the sample was representative.

The analysis of information collected in the qualitative part allowed the author to formulate the following research hypotheses:

Hypothesis 1: The dominant identity of the clinical research sector employees in Poland is the situational/task-related identity related with the performed activity/project.

Hypothesis 1.1: Situational/task related identity is stronger in the employees of clinical research departments of pharmaceutical or biotech companies than in the group of CRO employees.

Hypothesis 2: The group of clinical research sector employees in Poland presents organisational and relational identities, but they are weaker than their situational/task related identities.

Hypothesis 3: Professional identity in the group of clinical research workers in Poland is weaker than situational/task related identity and organisational identity.

Hypothesis 3.1: Professional identity-related with the practised occupation is weaker than situational/task-related identity and organisational identity in the group of clinical research workers in Poland.

Detailed hypothesis 3.2: Professional identity related with the trained occupation is weaker than situational/task-related identity and organisational identity in the group of clinical research workers in Poland.

Work-Related Identity Among Clinical Research Employees

Understanding that the changes in the clinical trials market in Poland over the last 20 years have caused the flow of occupations to result in a variety of individuals doing work in this market, it was interesting to see what set of work-related identities were

presented by this group. 147 questionnaires were collected in the study but four of them were incomplete and as such were excluded from the analysis. The intensity with which the clinical trial market employees revealed each of the five predefined work-related identities was calculated and expressed in the mean values (Table 1 and Figure 1).

Table 1. Descriptive statistics (N=143)

work-related identity	M	SD
organisational identity	3,73	0,64
professional identity – trained occupation	3,09	0,71
relational identity	3,78	0,54
professional identity – practised occupation	3,98	0,51
task relates/situational identity	3,92	0,55

M – mean, SD – standard deviation

The mean values for the five predefined work-related identities have a close-to-normal distribution, which is why for their comparison a parametric ANOVA test was used. ANOVA single-factor analysis of variations with repeatable measurements indicated that there are statistical differences between the variables. To check what the differences relate to, a *post hoc* analysis was conducted with correction for multiple comparisons developed by Bonferroni, which compares the level of all identities between one another. The analysis showed the following significant differences between work-related identities:

Professional identity – practised occupation achieved the highest mean value (M=3.98). This value did not differ significantly from task-related/situational identity (M=3.92), but was significantly higher than:

- Professional identity, trained occupation (M= 3.09),
- Organizational identity (M=3.73),
- Relational identity (M=3.78).

Task oriented/situational identity achieved the second highest mean value (M=3.92). This value did not differ significantly from professional identity related to practised identity (M=3.98) and from relational identity (M=3.78), but was significantly higher than:

- Organizational identity (M=3.73),

- Professional identity, trained occupation (M=3.09).

Relational identity achieved the third mean value (M=3.78), which did not differ significantly from organizational identity (M=3.73) and task-related/situational identity (M=3.92), but was:

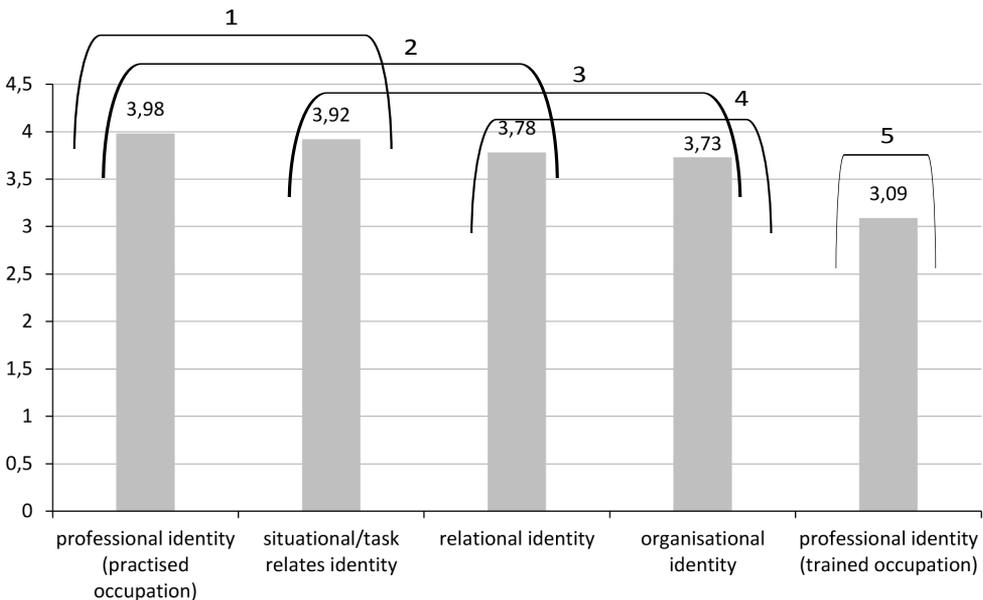
- Significantly lower than professional identity related to practised occupation (M=3.98),
- Significantly higher than professional identity related to trained occupation (M=3.09).

Organizational identity achieved the mean value that put it in fourth place (M=3.73). This value did not differ significantly from relational identity (M=3.78), but was:

- Significantly higher than professional identity related to trained occupation (M=3.09),
- Significantly lower than task-related/situational identity (M=3.92) and professional identity related to practised occupation (M=3.98).

Professional identity related to trained occupation (M=3.09) was significantly lower than any other work-related identity.

Figure 1. Work-related identities (mean values)



The dominant identities across the whole group that were classified on a higher level were professional identity related to practised occupation (M=3.98), and situational/

task related identity ($M=3.92$), which achieved the second highest score but the difference between these two was not statistically significant. Both mean results are above the medium score of '3' on a 5-point scale used in the study questionnaire, meaning that the group identifies with these two categories. As they received the highest scores, it can be expected that the influence of these two identities on the employees is the strongest. Relational ($M=3.78$) and organizational identities ($M=3.73$) achieved a score that was lower than task-oriented and professional identities related to the practised profession. Scores above 3 indicate that the group identified with these sources, but its influence on a group will be lower than the influence of the high-level identities. The lowest work-related identity mean was calculated for professional identity related to the trained occupation ($M=3.09$).

These results confirmed hypothesis 2 because, as it was assumed, organizational and relational identities achieved a score higher than medium and neutral score of '3' and both types of identities are weaker than situational/task-related identity. The weakest score obtained for professional identity related to the trained occupation also allowed confirming hypothesis 3.2. The highest score achieved unexpectedly for professional identity related to practised occupation influences the remaining hypotheses. Hypothesis 1 was assessed as partially confirmed because even though the professional identity related to practised occupation achieved the highest score, it was not significantly higher than task-related/situational identity that was the dominant identity. Hypothesis 3 was also assessed as partially confirmed because one of the professional identities, related to trained occupation, achieved the lowest score while the second one, related to practised occupation, provided quite the opposite score. That was why hypothesis 3.1 was rejected.

Subgroup results

Mean values for each of the five selected identities were also calculated for all subgroups according to the demographic information collected in the questionnaire and presented in Table 2. The analysis of the whole study group used 143 questionnaires. However, one of them did not include all demographic data describing the respondents and had to be excluded from the subgroup analysis. Because of that, only 142 full questionnaires were taken into account for the subgroup analysis. The higher number of respondents in the professional role category was because some of the respondents pointed to more than one professional role.

Table 2. Demographic description of the study population

gender	females 106	males 36					
age	below 30 years 28	30-40 years 68	more than 30 years 46				
education	physician 23	pharmacist 16	other education related to medicine 79	other 24			
professional role	Administra- tor 16	CRA/monitor 63	Study Lead/ Project manager 47	Line mamanager 22	Other roles (quality, trainings, regulatory) 12		
company	CRO 83	Pharma or Biotech 54	Freelancer 5				
expeirience (years)	<1 yeat 10	1-2 years 18	3-4 years 22	5-6 years 18	7-8 years 23	9-10 years 10	> 10 years 41
Number of comanies	1 64	2 40	3 27	4 5	5 6		

To verify hypothesis 1.1, the differences in mean values of professional identities were analysed between employees of pharmaceutical and biotechnological companies and the CRO companies. Since the compared groups (as verified beforehand) were not equal in terms of the number, non-parametric analyses was conducted using the Kruskal-Wallis test to check the influence of the place of employment on the achieved mean values for particular identities.

No significant differences were observed between subgroups divided by the type of employing company (pharma, biotech, CRO, freelancer). This observation rejects detailed hypothesis 1.1, which assumed that the situational/task related identity is stronger in the case of employees of clinical research departments of pharmaceutical companies than in the group of employees of CRO companies.

Demographic variables affecting work-related identity

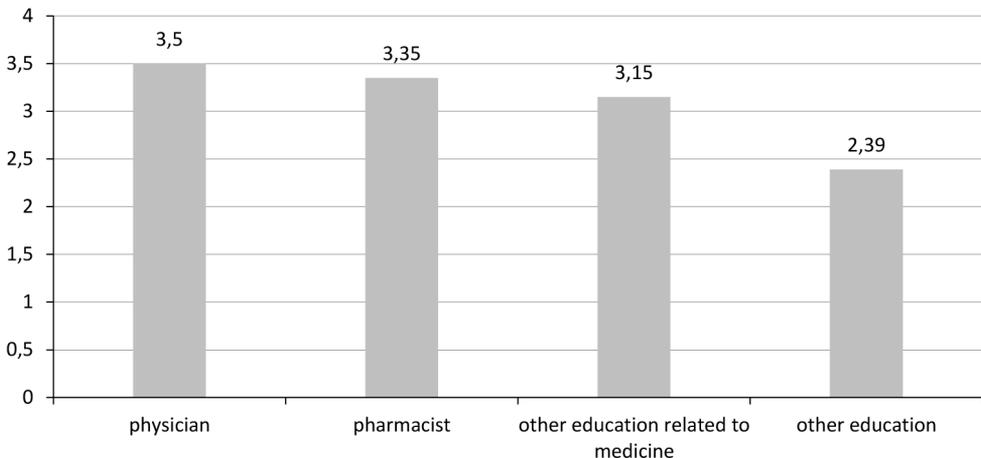
Significant differences were found between subgroups divided according to possessed education and according to roles within practised occupations.

Education

Groups divided in terms of the possessed education were not equal in terms of their number so to compare the mean values for them, a non-parametric Kruskal-Wallis test was used. This test indicated the existence of significant differences only in the case of the professional identity related to trained occupation, so to check what these differences exactly consisted of, multiple comparisons were completed between the groups using Gabriel's test.

Physicians ($M=3.50$; $SD=0.59$), pharmacists ($M=3.35$; $SD=0.60$) and employees educated in biological science related to medicine ($M=3.15$; $SD=0.62$) had significantly higher professional identity related to trained occupation in relation to employees with non-medical type of education ($M=2.39$; $SD=0.63$). The last group's score in their professional identification related to trained occupation below medium was '3' (Figure 2).

Figure 2. Professional identity related to trained occupation in the educational subgroups, mean values (N=142)



Roles within practised occupation

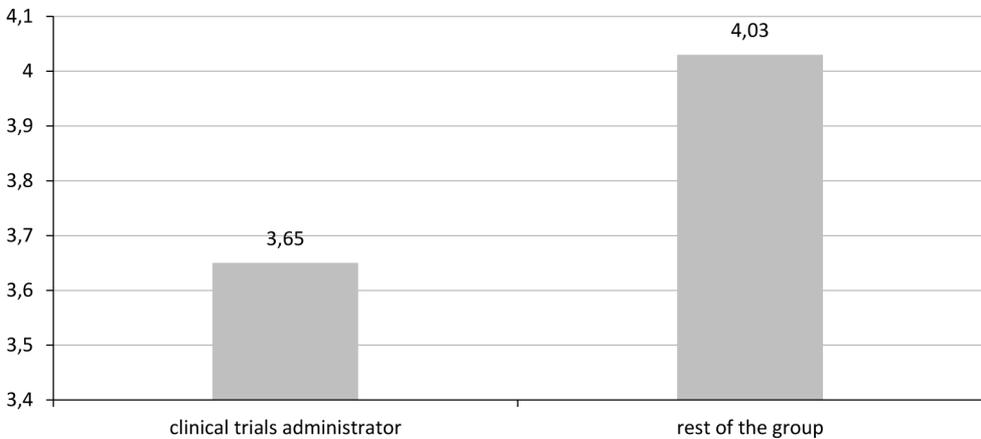
In the case of occupational roles, the mean values for particular professional identities calculated for each of the subgroups, divided in terms of the fulfilled occupational role, were compared with the rest of the study group. In the case of clinical trial

monitors, a comparison was completed using a parametric Student's t-test because (as verified beforehand) the group of monitors was equal, in terms of the number, with the remaining part of the study group. The remaining groups divided according to the fulfilled occupational roles are not equal so a non-parametric Mann-Whitney U test was used to analyse the differences between mean values of professional identities.

Clinical trial administrators

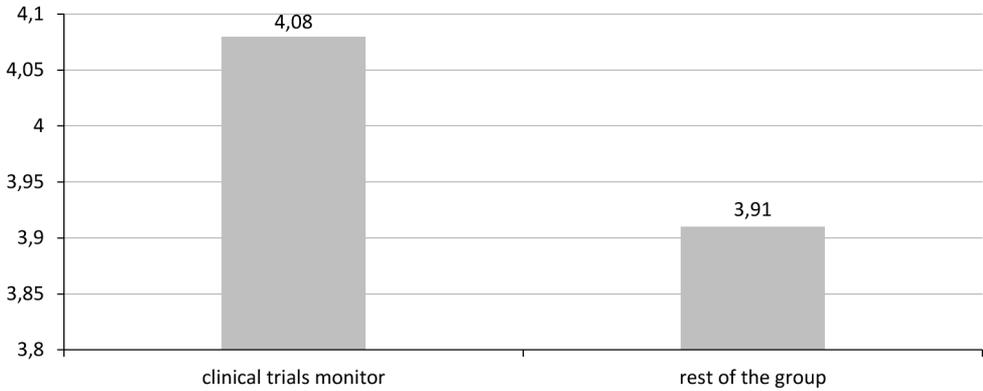
Clinical trial administrators have a significantly lower professional identity related to practised education ($M=3.65$; $SD=0.56$) than the rest of the group ($M=4.03$; $SD=0.49$).

Figure 3. Professional identity related to practised occupation (N=142)



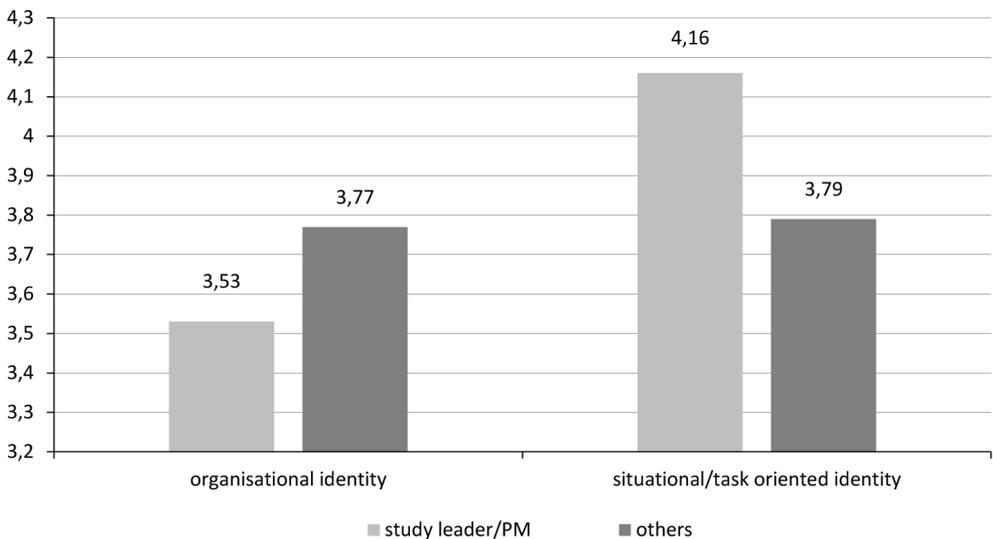
Clinical trial monitors

An analysis of Student's t-test showed that the mean values of professional identities calculated for the group of people carrying out the role of clinical trial monitor differed significantly in terms of statistics as compared to the rest of the study group only in the case of the professional identity related to practised occupation. The clinical trial monitors had a significantly higher professional identity related to practised occupation ($M=4.08$; $SD=0.46$) as compared to the rest of the study group ($M=3.91$; $SD=0.54$).

Figure 4. Professional identity related to practised occupation, mean values (N=142)

Study leaders and project managers

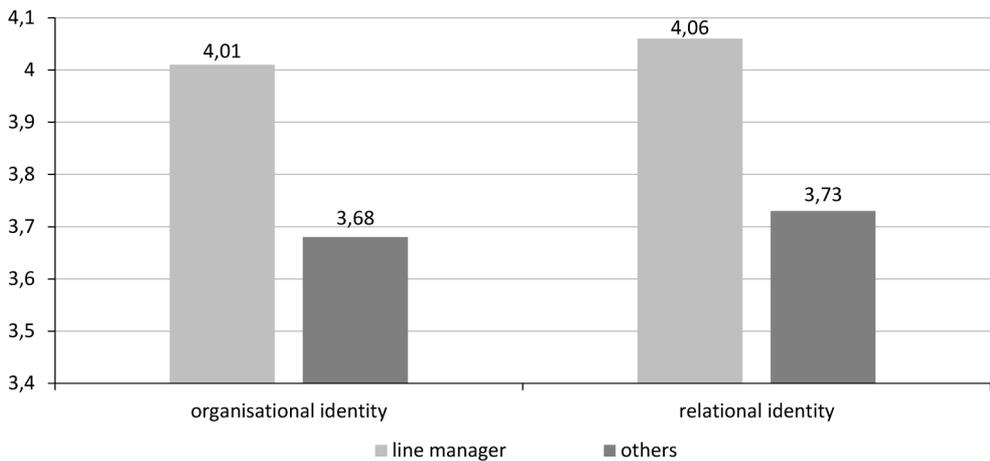
In the case of study leaders and project managers, the activity they are involved in (the project they are leading) competes successfully with other sources of identification. Situational/task related identity is developed in this group on a higher level than in the rest of the group, and respectively, other identities like organisational and professional related to the trained occupation, are expressed with a lower intensity than in a group (Figure 5).

Figure 5. Organisational and task related/situational identities, mean values (N=142)

Line managers

Line managers, directors and people managing the monitors' work had significantly higher organisational identity and relational identity than the rest of the group. People and organisation is the most important element of their job and usually they are not directly involved in any studies or projects, so task related identity does not compete (Figure 6).

Figure 6. Line manager organisational and relational identities, mean values (N=142)



Summary and Conclusions

The study hypotheses assumed a certain gradation of the intensity of work-related identities, with task related/situational identity at the top, followed by organisational and relational identities and both types of professional identities at the bottom. This order was proposed after analysis of information collected during qualitative interviews with study group representatives. All types of identities, except one, were expressed according to this assumed order. Professional identity related to the practised occupation was an exception. The study hypotheses suggested that the intensity of this identity would place it on the very end and that the employees would express stronger identification towards performed tasks, organization and relatives than to their practised occupation. The study results showed quite the opposite situation, as this type of identity is placed on the highest level together with the situational/task related identity.

As previously noted, the study hypotheses were formulated based on the observations made in the first qualitative part of the study in which the interviewed representatives

of the group expressed a high engagement in the projects they were involved in, but also the temporary nature of their roles and lack of attachment to the current occupation. It is difficult to say if the observations made with regard to professional identity related to the practised occupation mean that employees identify themselves with this new occupation, or if they are not able to distinguish between the occupation and the task they are involved in. It is possible that members of a “young” occupation think about their new occupation more like a temporary role and do not distinguish it from the current activity, which is the project for which they are responsible. On the other hand, they do not identify with their trained occupation. Further clarification in this area is a potential topic for future studies.

The analysis done on subgroups brought forth interesting observations showing the influence of one of the most important social identity antecedents, which is high status and prestige in certain work-related identities. Social identity theory (Ashforth and Mael, 1989; Alvesson and Robertson, 2006) and categorization theory state that people tend to identify with groups with higher position and higher prestige. Medics, especially physicians, are in this kind of high prestige group. It was observed that employees educated in medicine (physicians, pharmacists and those educated in biological science) had a higher level of professional identity related to their trained occupation than employees with non-medical types of education. Many studies have previously shown that established professions like physicians or pharmacists identify more with their trained occupation than with other sources of identification. Similarly, employees working on administrative positions identify less with their practised occupation than the rest of the group. Their administrative roles are the lowest in the hierarchy and are not related to the high prestige, so at the same time are not high competitors to the other sources of identity in the workplace.

The subgroup analysis also showed how the most important element of the job shapes the influences of the work-related identity. Monitors, whose job is related to the key activity of monitoring in the study, identified with this practised occupation on a higher level than the rest of the group. Study leaders/project managers identified mostly with the task (project) they were responsible for. Their task-related/situational identity was higher than in the rest of the group. Line managers had higher organisational and relational identities than the rest of the group. People and organization were the most important elements of their professional activities and the study showed these two elements shaped their work-related identities in the highest way.

Limitations and further research

Identity as a social phenomenon is a dynamic concept. The study results showed the static situation that can change under the influence of a changing environment. The sample representative level was difficult to define because respondents were not randomly selected for the study from the general population, but rather the snowball sampling method was used.

The observations described in this study can be interesting both for theoreticians studying the topics of work-related identities and for practitioners managing employees working in the clinical trials sector in Poland, as well as for other practitioners managing knowledge workers. Studies on antecedents and consequences of various work-related identities would all be of value to the study data presented.

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