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INNOVATIVE WORK BEHAVIOR AND PSYCHOLOGICAL CAPITAL – ANALYSIS OF RELATIONSHIPS

Summary. The purpose of the this study is to identify individual predicators of employees' innovative work behavior (IWB), defined as generating, promoting, and implementing ideas. Research to date confirms the relationships between innovative behavior and these individual predicators, which strengthens the justification, and need, for including psychological capital – comprised of hope, optimism, efficacy and resilience – into research as an explanatory variable.

The study included research which covered employees from medium-sized and large companies operating in Poland. As hypothesized, innovative work behavior was found to be related to employees' psychological capital. The results of multiple regression analysis show that three dimensions, "self-efficacy", "hope" and "resilience", are the main predictors of innovative work behavior.

Keywords: innovative work behavior, psychological capital, creativity in organizations

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Streszczenie. Celem badania jest poszukiwanie podmiotowych uwarunkowań innowacyjnego zachowania w pracy, rozumianego jako generowanie, promowanie i wdrażanie pomysłów. Stwierdzone w dotychczasowych badaniach związki zachowania innowacyjnego ze zmiennymi podmiotowymi uzasadniają potrzebę włączenia do badań kapitału psychologicznego – obejmującego nadzieję, optymizm, skuteczność i odporność, jako zmiennej wyjaśniającej.

Badaniami objęto pracowników różnych szczebli średnich i dużych firm, działających na terenie Polski. Zgodnie z hipotezą innowacyjne zachowanie jest związane z kapitałem psychologicznym. Wyniki wielokrotnej analizy regresji ukazują,

że trzy wymiary: „przekonanie o własnej skuteczności", „nadzieja", „odporność" są głównymi predyktorami innowacyjnego zachowania w pracy.

Słowa kluczowe: innowacyjne zachowanie w pracy, kapitał psychologiczny, kreatywność w organizacjach

1. Introduction

The increase of interest in innovative employee behavior stems from the search for factors which facilitate the competitiveness of firms based on human capital, as it is more and more often stressed that, at present, economic value is created, to a significant extent, on the basis of intangibles such as optimism and hope (Kianto, Hurmelinna-Laukkanen, Ritala, 2010).

Innovative employee behavior is related to key aspects of organizational effectiveness: generation, promotion and implementation of new ideas which benefit performance (Sanders et. all., 2010). Thus, both theoreticians and the practitioners are concerned with determining individual and organizational predictors which can later become a foundation for creative activities to be undertaken in the workplace. The recognition of such predictors is of crucial relevance for the practice of human capital management in any organization – it allows to stimulate the aforesaid behaviors by utilizing the competence potential of the employees, and to create an appropriate organizational environment for the development of such behavior.

The starting point for the analysis of predicators of innovative work behavior should be those subjective variables that have the greatest influence on the professional functioning of the individual. One of them is psychological capital (Luthans, Youssef, Avolio, 2007a), which is an attempt to aggregate certain psychological resources that are essential to the explanation of human behavior. The analysis of the relation between psychological capital and the professional functioning of the individual indicates its significance both in the professional performance (work efficiency) (Avey, Nimnicht, Pigeon, 2010; Peterson et al., 2011) and in the motivational aspects (well-being and work satisfaction) (Luthans et. al., 2007b).

The relationship between innovative behavior and those subjective variables, as determined in research to date (Janssen, 2004; Ramamoorthy et. all., 2005; Houghton, Neck, 2002; Sanders et. all., 2010; Carmeli, Metair, Weisberg, 2006; Jafri, 2010; Yuan, Woodman, 2010), justifies the need to include psychological capital in studies, as a variable explaining the creative activity of employees. As to date, it has not been the subject of thorough empirical exploration.

The purpose of this article is to present the results of research on the relationship between innovative work behavior and individual dimensions of psychological capital.

2. Theoretical Considerations and Hypothesis

2.1. Innovative Work Behavior (IWB)

The term "innovative behavior" (West, Farr, 1989; Scott, Bruce, 1994; Kleysen, Street 2001; Yuan, Woodman, 2010) is a construct related to employee's individual characteristics within specifically undertaken forms of activity. It is defined as the sum of the individual's intentional actions which are aimed at generation, promotion and realization of new ideas within a work role, group or organization, in order to benefit role performance, the group or the organization (Janssen, 2000), at any level of organization (West, Farr, 1989). It comprises, among others, the development of ideas related both to new products and technologies, and to administrative procedures which serve to improve relations at a workplace and notably increase their effectiveness (e.g. search for new technologies, promotion of new means of goal achievement, application of new work methods).

Innovative work behavior includes intended introduction and use of new and improved methods of action, therefore it constitutes an intentional activity leading to a defined result. Other features of this behavior include: generetiveness, effectiveness, complexity/ multidimensionality, processiveness, heuristics.

Innovative work behavior develops in a manner akin to a process (as it is possible to isolate certain stages in its course), and so is the fact that they do not only encompass activities related strictly to generation of ideas, but also to taking action which facilitate their promotion. From such a perspective, innovative behavior reveals itself as a multiphase process, within which an individual recognizes a problem and, subsequently, generates new ideas, promotes them, builds support for their implementation, and finally develops an appropriate model for using them to benefit the organization (Kleysen, Street, 2001; Yuan, Woodman, 2010).

The decision to implement a specific solution based on some defined, very rational criteria that takes the current and future situation of the organization into account (in the case that the innovation project is in a large scale enterprise) reflects one of the perspectives of the innovation phenomenon, namely the efficiency-oriented perspective (Yuan, Woodman, 2010). This implies that innovative behavior is supposed to bring measurable effects to the employee, in addition to the organization, e.g. improvement of effectiveness within the professional role, the feeling of more adequate compatibility of perceived job demands and a worker's resources, increased job satisfaction, and better interpersonal communication (Janssen 2000). This, in turn, enhances motivation to perform creative activity in the workplace. Therefore, innovative behavior of an employee is created by their expectations for the potential effect this behavior has on job efficacy. An important aspect in taking action

aimed at implementing an idea is to find the basis for converting an idea into capital, and to obtain social acceptation for its performance, as well as to build the relationship capital for its implementation. This reflects the second perspective of understanding innovation, i.e. the socio-political perspective. Generation of an idea is the starting point for actions that are directed at convincing others on the value of the idea, obtaining acceptance and support of the decision makers, gaining cooperation and building the relationship capital, which are indispensable in the implementation process. This requires skillful management of one's own image (Yuan, Woodman, 2010).

Scott and Bruce (1994) point out three types of behavioral tasks which constitute innovative behavior: generation, promotion and realization of ideas. However, it has been suggested considering some other activities within the realm of innovative behavior (which could be treated as its dimensions): opportunity exploration, idea generation, championing and application (de Jong, de Hartog, 2010).

The analyses of various types of activities of creative nature conducted by Kleysen and Street (2001) allowed to isolate 17 types of behaviors which together fit into 5 general dimensions of innovative behavior. These are: *opportunity exploration*, *generativity, formative investigation, championing* and *application*.

The above characteristics allows to state that the competences necessary to undertake and efficiently realize innovative behavior exceed those which are usually associated with individual innovativeness. To clarify this point, consider creativity. An integral characteristic of innovative behavior is the realization of ideas, yet this realization aspect does not have to be present in the case of purely creative behavior. Nevertheless, the fact remains that implementation of ideas has a creative character as well, since the process is often related to a need to solve all kinds of problems of organizational, technological, social, etc. nature. From this point of view, it seems justified to search for innovative behavior predictors within a wide range of individual and organizational (and also situational) variables, and to determine the conditions under which they can be undertaken and successfully implemented.

The number of determinants which are included into the field of analysis in relation to this issue is constantly increasing and continues to stir scholars' interest. Both organizational (De Jong, Kemp, 2003; Ramamoorthy et. all., 2005; Janssen, 2000) and individual determinants have been undergoing empirical verification. As far as **individual** determinants are concerned, the analyses included: the relationship of innovative behavior with, among others, personality (George, Zhou 2001; Kelly, 2006; Sung, Choi, 2009), initiatives (Talke, Salomo, Mensel, 2006), proactivity (Kim, Hon, D. Lee, 2010; Seibert, Kraimer, Crant, 2001), distributive and procedural justice (Janssen, 2004; Ramamoorthy et. all., 2005), perceived job challenge (De Jong, Kemp, 2003), the perception of organizational climate

(Scott, Bruce, 1994), expected positive performance outcomes (Yuan, Woodman, 2010), self-esteem and perceived insider status in the organization (Chen, Aryee, 2007), self-leadership competences (Houghton, Neck, 2002; Carmeli, Metair, Weisberg, 2006), job satisfaction (Sanders et. all., 2010) and commitment (Jafri, 2010).

In the context of the analysis of the relationship between innovative work behavior and psychological capital, all the dimensions (self-efficacy, optimism, hope and resiliency) should be taken into consideration and related to individual stages of innovative behavior: problem recognition, activity initiation and generation of ideas and their implementation.

2.2. Psychological Capital

Psychological capital is a positive psychological stage of an individual's development, characterized by: 1) having confidence in the ability to take on and put in the necessary effort to succeed at challenging tasks (confidence in self-efficacy), 2) making a positive assessment on the possibility of success now and in the future (optimism), 3) persevering toward goals and, when necessary, redirecting paths to goals in order to succeed (hope), 4) when beset by problems and adversity, sustaining and bouncing back and even beyond to attain success (resiliency) (Luthans, Youssef, Avolio, 2007a; Luthans, Avolio, 2009). Thus, psychological capital is a constellation of motivational and behavioral trends arising out of four components: self-efficacy, optimism, hope and resilience. All these components are vital from a perspective of professional activity.

The current exploration of the influence of psychological capital on professional functioning of individuals has included the analyses of its relationship with employee's performance (Avey, Nimnicht, Pigeon, 2010; Peterson et all, 2011), leadership (McMurray et all, 2010; Caza et all, 2010), feeling of satisfaction (Luthans, Avolio, Avey, Norman, 2007), climate, commitment (McMurray et all, 2010) and trust (Walumbwa et all, 2011). Apart from the direct influence of psychological capital on employee's results, there is also an indirect influence, the supporting **organizational climate,** which is a moderator of the relationship between psychological capital and its **effects** (Luthans, Norman, Avolio, Avey, 2008). However, both psychological capital and a positive, supporting professional environment are necessary to achieve professional results. It creates not only favorable conditions for employee's high performance, but also it conditions their engagement and feeling of job satisfaction.

Psychological capital comprises the following dimensions: self-efficacy, optimism, hope and resilience.

Self-efficacy (Bandura, 1997) is one's belief in one's ability to have influence on courses of action. It is the key element of motivation and determines courses of action, perseverance,

how much effort must be put forth in given endeavors, what emotions accompany it and the resilience to obstacles and failures, (Bandura, 2001). It also influences the mobilization of cognitive resources needed to perform tasks. Therefore, it plays a self-regulative role, which is essential in all the stages of innovative behavior.

Confidence in one's own self-efficacy favors taking on initiatives related to innovative activity. Certainly, this evaluation is rather subjective and includes valuing individual predispositions and evaluating task difficulties, which results in the conviction in the ability (or lack of ability) to tackle it. Moreover, self-efficacy affects the perception of obstacles and the potential of reaching goals and, at the same time, determines the individual's expectations of effects of their own actions. As Bandura (1997) argues, when one's self-efficacy is high, they are more likely to put more effort into a given task where the activity will be continued even in face of obstacles. Thus, self-efficacy contributes to employee's performance.

Conviction about one's self-efficacy may have a general character, but when it has a specific character, it applies to a particular range of activity, situations, or even tasks. In the context of innovative behaviors it seems worthwhile to mention "the sense of creative self-efficacy", which reflects an individual's belief in possessing the ability to produce creative outcomes (Tierney, Farmer, 2002, p. 1138).

Based on this conviction and on anticipated organizational support, an employee may formulate innovative goals, enabling them to direct attention, mobilize forces and develop a strategy of operation. Self-efficacy is also vital in further steps of the innovative process, namely in the idea implementation step. This does not only concern the price for the possibility of carrying out own ideas in the context of adequate competencies, but also the aspect of authorization to decide whether and which idea is going to be chosen for implementation and what methods and resources are going to be used. Lack of decision-making power in such a situation will induce the employee to look for support and social approval for the realization of the suggested solution.

Self-efficacy is related with expected positive performance outcomes; this variable was analyzed by Yuan and Woodman (2010) in relation to innovative work behavior. The expected positive performance outcomes are the belief of the employee that their efficacy of work is expected when innovative behavior will bring improvement of performance or effectiveness (expressed e.g. by higher capability of reaching goals, work quality or lower number of mistakes) and benefits from their work role or works unit (Yuan, Woodman 2010).

Optimism represents another element of psychological capital and is perceived as a personality trait, constant in time and independent of the situation, which is characterized as a generalized expectancy regarding future outcomes (Scheier, Carver, 1985). It is related to constructive thought schemes which enable to build one's confidence in their own success

and to raise the probability of positive situations for the individual. This perspective has its consequences on undertaking and successful performance of tasks. Above all, it stimulates activities to reach the set goals. When the outcome of a person's action is seen as very desirable, optimism would tend to correlate with the actual performance (Avey, Nimnicht, Pigeon, 2010). Optimism is related to the style of justification and signifies a trend towards stable, internal attributions for positive experiences and external attributions for negatives ones, e.g. failures (Seligman, 1998). Attributing failure to temporary, local and external causes helps the individual not to lose motivation for action.

Apart from optimism functioning as a motivator, it can also be a certain activity regulator; owing to selective perception (focusing on positive aspects of a task), the individual continues the performance of various tasks (also more difficult and unpleasant ones) and leads them to a successful end. Thus, the individual may use strategies based on **constructive thought strategies**, which are included in self-leadership strategies (Houghton, Neck, 2002). These strategies include the evaluation and challenging of irrational beliefs and assumptions, mental imagery of successful future performance, and positive self-talk. Carmeli, Meitar and Weisberg (2006) underline that constructive thought pattern is essential during the first stage of the innovation process – recognizing problems and generating new ideas and solutions. For further stages of innovative behavior, behavior-focused strategies gain significant importance because they are designed to increase self-awareness, leading to the successful management of behavior involving necessary but perhaps unpleasant tasks. These strategies include self-observation, self-goal setting, self-reward and self-evaluation aimed at improving one's own actions.

Talking about optimism, an opposite pole should be also mentioned, namely that of "unrealistic optimism", which is an inclination to neglecting potential risks and the evaluation of subjective chances to avoid unpleasant incidents. Such perception of reality is defensive, contrary to "realistic optimism", which allows for the possibility of failure, but assumes an interpretation of occurrences beneficial for the individual. This realistic optimism influences the performance and supports further effort; expecting positive results from actions decreases the probability of resignation from further activity (Avey, Nimnicht, Pigeon, 2010).

The basis for optimism seems indispensable from the point of view of innovative behaviors directed towards creation (recognizing problems and generating ideas), and oriented on realization of ideas (idea promoting and performance). A similar situation occurs in another dimension of psychological capital – **hope**.

There are a lot of similarities between hope and optimism, because hope is the awaiting that current actions will have positive results in the future (Zimbardo, Boyd, 2008). Therefore, similarly to optimism, hope is a kind of belief related to reaching goals. Snyder's

model (1991) of hope defines it as a positive motivational state that is based on experience of success, derived from goal-directed activities and plans for their performance. This feeling is connected with the belief (cognitive process) that an individual is able to reach goals that are achievable (realistic goals) but, on the other hand, are challenging. Achieving a goal requires determination, will power, energy, control and ability to generate alternative ways of reaching this goal. The final component of hope enables one to separate it from other components of psychological capital – resilience, the belief in own efficacy and optimism. People who have high hope, direct their efforts towards achievement of goals and their abilities towards overcoming obstacles to reach success.

As Zimbardo and Boyd (2008) emphasize, hope is one of the components with future orientation. The future is for the individual the main motivational area and future perspective creates space for exposure of both optimism and hope. Hope enables to build faith in one's own capabilities in dealing with challenges (realism-based hope). "Future-oriented" people are characterized by a tendency to accept a postponed reward; they perceive long-term gains as more profitable than short-term ones, which reinforces them in their actions, even when facing difficulties. It is hope that creates "emotional safety" and reinforces the individual's involvement in striving for their goals.

From the point of view of dealing with problems that may arise during the innovative process, the last component of psychological capital becomes particularly important – **psychological resilience.** It combines with other traits, such as endurance and flexibility. Endurance enables efficient functioning in difficult, demanding or even dangerous conditions and flexibility is essential in situations requiring adaptive behaviors, e.g. adaptation to change.

Psychological resilience is the ability to make a successful comeback (to regain balance) after being assailed by problems, failures, crises or even after positive events (Luthans, Youssef, Avolio, 2007a). It also enables to deal with stressors (e.g. at work) and, at the same time, to keep a high level of performance. In case of difficulties, endurance ensures the use of mechanisms that reduce or eliminate "deficiencies" in employee functioning and enables them to come back to goal-directed activity (Avey, Nimnicht, Pigeon, 2010). Research emphasizes that people have natural capabilities to regain and even to increase their adaptive abilities in adverse conditions (Miller, 2005).

There are three core principles of resilience (Reich, 2006): control, coherence and connectedness. The feeling of control is combined with the belief that the individual has personal resources to achieve goals. The belief in the ability to influence the outcome of events (behavioral control) is related to a specific type of activity in stressful situations, the adaptation of problem – directed strategy.

The sense of coherence is composed of three principle elements: understanding, self-help and reasonableness and expresses the individual's need for predictable events and removal of uncertainties. It makes people search for the meaning of things and to gain understanding of circumstances at hand, even in the face of very difficult situations, and at the same time providing resources enabling them to deal with a given situation. It allows for mobilization of resources to overcome the stressor and increases integrity of cognitive, emotional and behavioral possibilities, which improves the individual's activity effectiveness. Thus, the individual's perception of a problematic situation becomes clear, which favors proper decisions and emotions accompanying a difficult situation, stimulating the individual to start constructive activity.

Next, the "sense of connectedness" relates to behaviors of people experiencing very stressful situations that direct them to band together (self-organizing). Particularly in the face of danger people show a tendency towards an increased need of affiliation, which is related to search of social support. Social support is also an important moderator of response to stressful experiences. It reduces or neutralizes harmful effects of the stressor.

Abilities connected with psychological resilience are essential for constructive reaction in stress-generating situations and for long-term effort directed towards dealing with challenges, while keeping high performance.

Overall, it may be stated that the study of the relationship between innovative behavior and psychological capital is relevant because each of the components are an important element that determine innovative activity. The belief in the ability of achieving creative results will support efforts in the execution of the idea (creative efficacy), and will similarly support the belief in success now and in the future (optimism). Persistence in carrying out the idea by using alternative methods of achieving a goal and confidence in success will be the result of hope, and thanks to psychological resilience the individual will be able to cope with problems that appear on their way.

In view of the above, it is justified to assume a research hypothesis:

Hypothesis 1. *Psychological capital is positively related to innovative behavior*

Hypothesis 1a. *Self-efficacy is positively related to innovative behavior*

Hypothesis 1b. *Optimism is positively related to innovative behavior*

Hypothesis 1c. *Hope is positively related to innovative behavior*

Hypothesis 1d. *Resilience is positively related to innovative behavior*

3. Methods

The goal of the research was to establish one of the individual determinants of innovative behaviors – psychological capital. The problem addressed in the research concerned the verification of the assumption that there is a relation between the occurrence of employees' innovative behaviors and their psychological capital.

3.1. Measures

Innovative behavior (dependent variable). The variable was measured with 14 item Innovative Behavior Questionnaire developed by Kleysen and Street (2001). The data was provided by choosing an answer to every statement from a 6-point scale, where: 1 – "never"; 6 – "always". In the process of cultural adaptation of the instrument, statistical analyses were performed for the sake of secondary verification of reliability. The coefficient of reliability α for the whole instrument amounted to 0.94. On the basis of the factor analysis (KMO = 0.929; $\chi^2 = 2016.359$; df = 91; $p < 0.001$) performed by the method of Principal Component Analysis with Varimax Rotation (using Kaiser Normalization), two factors were isolated: *recognizing problems and initiating activities* (factor 2, α = 0.83), and *generating ideas and implementing them* (factor 1, α = 0.92). Jointly, they account for 62% of variance.

Psychological capital (independent variable). Psychological capital was measured using a 12-item, shortened version of the Psychological Capital Questionnaire (PCQ)[1], empirically validated by Luthans, Youssef, Avolio, (2007a). The PCQ-24 measures six items of each of the psychological resource capacities of confidence, hope, optimism and resiliency. The scale of the items are anchored from "1" (strongly disagree) to "6" (strongly agree). In this study, the average coefficient alpha was 0.87. The coefficient of reliability for the factors are the following: efficacy alpha 0.76; hope 0.70; resiliency 0.74; optimism 0.73.

The research methods also accounted for the controlled independent variables, relevant for the analyzed dependent variables, which comprise: age, sex, education, job seniority, job position, company size, and line of business.

3.2. Sample and Procedures

The surveys covered 246 employees from companies diversified as to their size and line of business. The majority of employees who participated in the survey represented large companies (68%) from the sector of: *processing industry and, production* (27%), *financial agency services and banking* (12%) and *telecommunications* (10%). Among the respondents,

[1] Permission for use granted by the authors.

the majority were employees within the age range of 26-35 (60%), with university education (92%), holding managerial positions (69%), mostly with work experience of over 5 years (55%). Among the respondents 64% were female and 36% male. The survey was anonymous and the questionnaire was sent to the respondents via electronic mail. 538 questionnaires were distributed, and 246 of them were answered and returned.

3.3. Results

The first step in the research procedure was to search for a relationship between innovative behavior and the measured variables, based on *r-Pearsona* correlation analysis. Correlation coefficients for specific variables are presented in Table 1.

Table 1

Correlations among researched variables

Variable	1	2	3	4	5	6	7	8	9	10	11
1.Generating ideas and implementing them	1										
2. Recognizing problems and initiating activities	,806**	1									
3. Self-efficacy	**,434****	**,480****	1								
4. Optimism	**,323****	**,370****	,459**	1							
5. Hope	**,410****	**,438****	,572**	,502**	1						
6. Resilience	**,421****	**,388****	,518**	,512**	,492**	1					
7. Company size	-,054	-,049	,011	,182**	,133*	,067	1				
8. Education	-,012	-,030	-,042	-,016	-,088	,115	,109	1			
9. Job position	-,237**	-,219**	-,134*	-,032	-,172**	-,066	,102	,157**	1		
10. Job seniority	,073	,061	-,001	,049	-,002	,045	,239**	,007	-,184**	1	
11. Sex	,122*	,056	,082	-,032	-,011	-,023	,040	,122*	-,069	-,087	1
12. Age	,092	,059	,112	,120*	,018	,033	,300**	,041	-,258**	,507**	-,025

* $p < 0.05$, ** $p < 0.01$

The results of the research entitle to claim that there is a significant statistical relationship between the factors of innovative behavior and psychological capital. It concerns all the dimensions of psychological capital: efficacy, optimism, hope and resilience.

Source: Author's own data.

The most powerful positive relationship was observed in self-efficacy. This result is not surprising, particularly in the context of analyses of the relationship between creativity and personality traits, where one of those traits is self-confidence (Barron, Harrington, 1981). The belief in capabilities to undertake and continue effort needed to succeed in difficult tasks seems to play an essential role in generating, promoting and realizing ideas. It has been shown

that the belief in self-efficacy has an influence not only on professional qualifications, but also directly or indirectly, on the efficient performance of professional goals, similar to the effects of optimism and hope (Stajkovitch, Luthans, 1998).

Self-efficacy, optimism and hope may stimulate employees to initiate activities and to achieve fixed goals (connected with creating and implementing ideas). This is significant for one of the innovative behavior dimensions, namely "recognizing problems and initiating activities". In contrast, psychological resilience enables one to cope with stressors during the implementation of solutions and to maintain a high level of performance when setbacks occur, providing the mechanism to limit or eliminate the loss of functioning and allowing employees to "bounce back" to goal directed efforts (Avey, Nimnicht, Pigeon, 2010). Therefore, it seem that resilience has a greater significance for "generating and implementing ideas", which is confirmed by the study's results.

The variance analysis of innovative behavior factors and psychological capital revealed the influence of its individual dimensions on creative activity.

Table 2

Results of multiple regression analysis for predictors of innovative behavior

Dimensions of innovative behavior	Predictors	B	SD	Beta	T	p	Model
Recognizing problems and initiating activities	**Self-efficacy**	,475	,114	,278	4,175	,000	Adjusted $R^2 = 0,28$; $F(4,273) = 27,739$; $p < 0,000$
	Hope	,316	,120	,177	2,636	,009	
	Resilience	,198	,122	,106	1,627	,105	
	Optimism	,164	,105	,100	1,565	,119	
Generating ideas and implementing them	**Self-efficacy**	,332	,105	,214	3,153	,002	Adjusted $R^2 = 0,25$; $F(4,273) = 24,078$; $p < 0,000$
	Hope	,272	,111	,168	2,452	,015	
	Resilience	,357	,113	,210	3,172	,002	
	Optimism	,048	,097	,033	,500	,617	

Source: Author's own data.

The first model for the factor of "recognizing problems and initiating activities" is well-fitting and reliable (F = 27,739; p = 0,001). It explains 28% of the variance of the obtained results.

The most powerful predicator of innovative behavior turned out to be the self-efficacy dimension of psychological capital and it explains 8% of the variance of the obtained results ($\beta = 0.278$). Thus, the stronger the employee self-efficacy is, the more often they manifest innovative behavior.

The second model for the factor of "generating ideas and implementing them" also appeared to be well-fitting and it explains 25% of the variance of the obtained results. In this case, the strongest predictors are the three following dimensions of psychological capital: self-efficacy – explaining 5% of the variance of the obtained results, resilience – explaining 5% of the variance of the obtained results and hope – 3%.

The obtained results allow to claim that the key determinant of innovative behavior related to psychological capital in the regression model turned out to be self-efficacy, which mostly explains the variability of results related to problem recognition and initiation of activity, as well as (although to a lesser extent) idea creation and implementation. In view of the aforementioned results, *H1a* might be acknowledged as confirmed.

In the case of the second stage of the innovative process (generating ideas and implementing them), resilience is quite essential in the regression model. It constitutes the basis of *H1d* positive verification.

The other two factors of psychological capital, i.e. hope and optimism, are weaker predicators of innovative work behavior, although they are linked with innovative activity. Therefore, based on the obtained results, it can be claimed that also H1b and H1c research hypotheses are empirically supported.

3.4. Discussion

The conducted study concentrated on the relationship between innovative work behaviors and subjective factors, expressed as psychological capital.

In the context of verified research hypotheses it was determined that manifestations of innovative behaviors related to problem solving, initiation of activity and implementation of ideas are connected with all the dimensions of psychological capital.

The obtained result indicates that the specific character of innovative activity, related to big cognitive effort, the performance of various and long-term activities, the necessity of gaining resources needed to conduct the idea and the construction of relationship capital for idea implementation, explain the significant role of all factors of psychological capital in creating innovative behavior. However, with a particular indication of self-efficacy (including creativity efficacy), which reflects the belief of individuals in their own capabilities of obtaining creative results (Tierney, Farmer, 2002). This result is convergent with data determined in other studies, in which individual innovativeness is combined with the sense of personal worth and self-acceptance (Robertson, Myers, 1969). A confirmation of the obtained results are also drawn from the analyses performed by Yuan and Woodman (2010), who determined the relationship between innovative behavior and another subjective variable – "expected positive performance outcomes". This variable is connected with personal traits

(self-confidence, self-control) that reinforce the employee's belief in their self-efficacy. High creativity efficacy and high self-expectations for creative behavior were strongly related to creative work involvement (Carmeli, Schaubroeck, 2007). Activation of self-efficacy is much influenced by highly cognitive capabilities (observed in creative people); these capabilities increase the likeliness of positive experiences related to the performed tasks, which, in turn, increases self-efficacy and leads to gaining new skills. Then, self-efficacy plays a motivational role in the aspect of creative activity initiation. The regulatory role of self-efficacy is expressed by the fact that its high level favors long-term effort to perform tasks and, thus, also related to efficacy. Both aspects are essential in the case of tasks specific to creative activity – recognizing problems and initiating activities and generating ideas and implementing them.

Studies on self-efficacy as a moderating variable in the analysis of the influence of cognitive ability and conscientiousness on efficacy show that cognitive ability and conscientiousness relate to self-efficacy but it depends on the task complexity. The study results show that self-efficacy mediates the relationship of cognitive ability and conscientiousness with performance on simple tasks, but not on complex tasks (Chen, Casper, Cortina, 2001).

The obtained study results allow for the assumption that the influence of the individual dimensions of psychological capital varies in the context of different forms of activity that compose innovative behavior. While self-efficacy is fundamental for initiation of activity, that is activities oriented towards the creation of ideas and their implementation, the influence of resilience is more accentuated in the "generating ideas and implementing them" stage. At this stage, the employee undertakes various activities that may be related to stress, e.g. the necessity to overcome barriers that hamper innovations, conflicts being the result of dysfunctional cooperation of the innovative team, lack of access to necessary resources, etc. When such difficulties occur, resilience provides mechanisms to limit or eliminate "deficiencies" in employee functioning and allows to come back to goal directed efforts (Avey, Nimnicht, Pigeon, 2010).

In the presented studies, optimism and hope had lesser impact (compared with the other factors of psychological capital) on innovative behavior. Their meaning became more significant in relation to "problem recognition and initiation of activity". This point is confirmed with data quoted in literature that both optimism and hope are related to setting goals, planning and promoting actions (Peterson et al., 2011).

To summarize. In view of the analysis of the relationship between psychological capital and innovative work behavior it can be stated that the synergy of all dimensions of

psychological capital shall be fundamental to both the individual stages and the effectiveness of the innovative process.

3.5. Limitations and directions for future research

The review focuses mainly on individual (psychological) aspects of innovative work behavior in organizations as published in research papers. In future studies for determining innovative behavior, other organizational aspects related to psychological capital should be taken into account. It seems that further research in the field in question should also cover a larger group of variables of individual and organizational character, analyzed within an interactive model, since the expression of organizational innovative behaviors occurs in a specific context, which may include factors of facilitatory nature, and also factors of inhibitory nature.

It would be crucial to include psychological capital in those analyses as a moderator of impact of subjective and organizational variables.

From the perspective of research limitations, it should be pointed out that the analyzed results were limited by the lack of control over the variable of "social desirability", which in the case of the scales based on a self-report may lead to a distortion of empirical material. Another limitation concerns the scope of the performed study. It would be interesting to include cross-cultural analyses, related to the influence of psychological capital on innovative behaviors in various countries. Such analyses should be conducted on big groups of respondents, who represent different market sectors.

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