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PERSONALITY TRAITS AND PROFESSIONAL RESPONSIBILITY – PRELIMINARY MODEL

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ABSTRACT

Purpose: Purpose of this paper is analysis of connections between personality traits and effective functioning on different levels of professional responsibility. The main aim of this study was building a model which could explain in what way personality moderates coping with responsibility stress.

Methodology: Two research questions were stated: What personality traits distinguish managers from other groups with personal responsibility of decision (with higher and lower level of responsibility); and: What stable personality and emotional control traits can predict effective professional functioning on different required levels of personal responsibility decision? Three groups of people (N=110), with different level of responsibility were examined: managers – characterised by middle level of personal responsibility, Air Traffic Controllers (ATC) – very high level of personal responsibility and representatives of different occupations with low level. Two questionnaires were used: to measure personality traits (Neo-Pi-R, Costa&McCrae) and emotional control (ECQ Brzezinski).

Findings: Comparing of analysed groups shows many significant differences in four of the five big dimensions and specific traits. So, it is possibly to say, that probably only special types of persons can be effective as manager, like as ATC. Also, two path models were estimated. Initial model was poorly fitting the data, but the second one is characterized by very good fit indices. It shows, that some personality traits effect responsibility level directly, and in the highest way - Values. Excitability in general has negative influence on responsibility level.

Value/originality: The main originality of this paper is comparing managers with ATC group as a specific kind of responsibility. This approach make possible to state conclusions about real role of special personality traits to be effective in coping with stress responsibility.

Keywords: professional responsibility, personality traits , managers, air-traffic controllers, organizational psychology

Classification: research article

PURPOSE OF THE STUDY

The purpose of this paper is to analyse the connections between selected personality traits and the effective functioning on different levels of professional responsibility.

Management, nowadays, is very difficult. Enterprises functioning in rapidly changing environments require managers to be a special kind of person with the aim of effective coping with challenges.

We can distinguish some specific conditions that make management difficult.

First of all, there are conditions related to global situations. Globalization processes make even quite small firms (SMEs) similar to MNEs, especially during decision processes (Berger *et al.*, 2012, Shimizu *et al.*, 2012), while external conditions change very fast. On the other hand, at a time of global crisis, necessary decisions can be unpopular sometimes, especially for employees, causing managers meeting with many negative emotions which they have to cope with (Mazzei and Ravazzani 2011, Ricard *et al.*, 2012, Metz *et al.* 2012, : Zagelmeyer and Gollan 2012).

The second thing is the expansion of ICT. As a result, managers have more information; and the information, even from other countries, is coming immediately. It is difficult to assimilate and process so many pieces of information; to try to select the important pieces and then make the best decisions for the company (Rei, 2004; Girard, 2005; Rajabzadeh *et al.*, 2012, Tao and Min, 2011, Carlevale 2011).

The third thing is the relationships with a large group of people. In many cases, these relationships have only a business nature, but some of them are not satisfied (due to type of person/personality or, for example, the subject of negotiation). It is also a reason of stress present in a manager's life.

The last thing is the level of personal responsibility taken for a decision. Every manager takes their own, personal responsibility for the effects of a decision they have made. The level of responsibility is related to the level of competence, but being even very competent employee is not enough to effective functioning as manager (Holmlund-Rytkönen and Strandvik 2005). This situation is caused by personality traits, which are very important in understanding a manager's functioning, such as consciousness, openness or possibilities to control emotions (Markowić, 2008; Service nad Carson 2010; Dragoni, 2011).

However, a manager's level of responsibility, especially in small and medium firms, although quite high, is not very high. So it is interesting to see, what personality structure characterises the people who must cope with a very high level of responsibility. It was decided that Air Traffic Controllers (ATC) can be a good control group for managers. The level of responsibility among ATCs is very high, because in the case of a mistake or a wrong decision, there is a real risk of an air crash and human death (Metzger and Parasuraman, 2005).

METHODOLOGY

Among many different factors, which are related to effective management, we can distinguish personality traits. It is known, that they are important, because managers finally take full responsibility for their decision and cope with decision's stress in a way which is characteristic for them. External conditions, quick changes and even technologies and possibilities of getting more information, make the deciding process more stressful. On the other hand, this process must be rather quick, as a response to an actual situation. Managers try to cope with this stress and decision responsibility in a different way and with a different level of effectiveness. The aim of the presented research was an attempt to find specific traits, which allowed managers to be effective in coping with responsibility stress.

Two research questions were stated:

RQ1. What personality traits distinguish managers from other groups with personal responsibility of decision (with higher and lower level of responsibility)? And, as a specific detail: How much personality profiles differ in groups?

RQ2. In what way stable personality and emotional control traits can predict effective professional functioning on different required levels of personal responsibility decision?

To find the answers:

It was decided to examine three groups of people (N=110), which differ in the level of responsibility. The main group was managers – characterised by a middle level of personal responsibility (n=60), and two control groups: one of them was Air Traffic Controllers (ATC) – a very high level of personal responsibility (n=25), and the last – representatives of different occupations (DO) with a low level of responsibility (n=25). Subjects were qualified to participation in that study, by students Agnieszka Trybuś and Magdalena Bogacka-Neugebauer, who also administered tests to the subjects and coded data. Authors want to thank them for their support in this study.

To find personality traits we has decided to use the Costa and McCrae approach, which is well known as the Big Five model, because of its relative stability of traits and, additionally, the possibilities to make cross-culture comparisons. The Neo-Pi-R questionnaire by Costa & McCrae in the Polish adaptation was used to measure personality structure. To examine one's possibilities to control emotions, a short scale was used, which measures internal predispositions to cope with emotional states. This scale was constructed in Poland by Brzeziński, and the basic theory lies among biological approaches.

Statistical analyses were made by using the IBM SPSS 21 statistic programme.

FINDINGS

1. Differences in personality structure

The first step to find answers to the research questions was comparing the personality traits among the three groups.

The first analysed trait was Neuroticism. This personality factor shows emotional stability and susceptibility to experiencing negative emotions.

Tab. 1. Differences between groups in ANOVA statistics for Neuroticism trait

Personality Trait	ANOVA		Managers n = 60		ATC n = 25		Others n = 25		Managers - ATCs	Managers - others
	F	p	M	SD	M	SD	M	SD	Post-hoc p	Post-hoc p
Neuroticism	10,486	,000	4,67	2,09	2,84	1,77	5,32	2,12	,001	,369
Anxiety	18,515	,000	5,18	2,05	2,68	1,75	5,44	1,47	,000	,833
Angry hostility	10,366	,000	4,95	1,57	3,44	2,12	5,60	1,76	,008	,306
Depression	7,561	,001	5,10	2,67	2,96	1,99	5,28	2,48	,001	,950
Self-consciousness	1,821	,167	5,08	2,28	4,52	1,83	5,64	1,75	,491	,500
Impulsiveness	1,308	,275	6,77	1,93	6,08	2,68	6,16	1,80	,357	,446
Vulnerability	10,922	,000	4,13	1,91	2,76	1,64	5,28	2,15	,009	,035

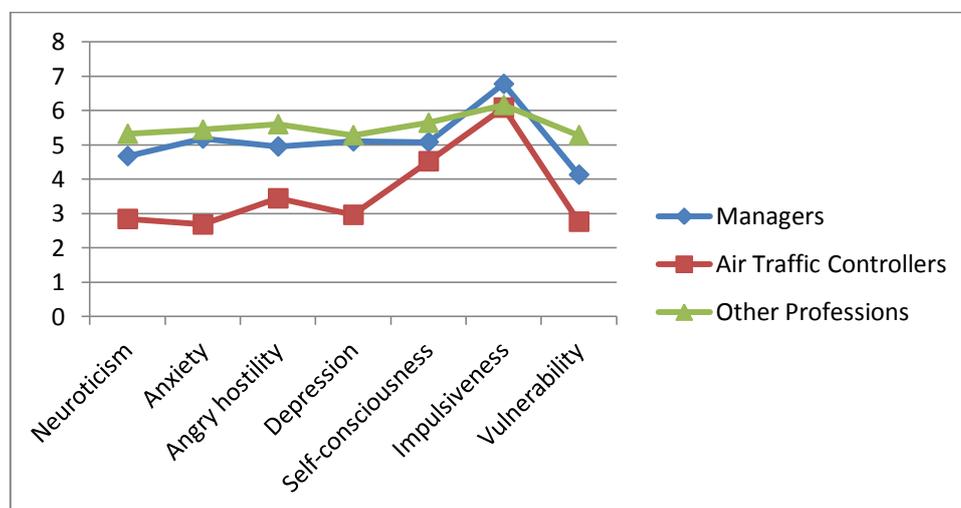


Figure 1. Profiles of Neuroticism in analysed groups

As it is shown in Table 1 and Figure 1 managers are more similar to people with low level of responsibility than to ATCs. High responsibility level requires skills of controlling negative emotions, such as anxiety, anger, irritation, sense of helplessness or guilt. It is also related to a low level of vulnerability, which means the ability to coping with stress effectively with no negative feelings. On the other hand, the level of Impulsiveness (interpreted as being able to control sudden desires of doing something) is quite high in all the groups. It shows that irrespectively of the responsibility level, people need to do something for themselves to reduce stress. This analysis suggests, that in stressful management conditions – related to a higher responsibility – managers should be more similar to ATCs.

The next trait is Extroversion. It is important in effective management because of the necessity of relationships. The profiles of analysed groups are shown in Figure 2.

A manager is a person who should have good relations with subordinates, other managers and people from enterprise's environment with the aim of effective managing. The results of this study confirm, that managers are a group with the highest level of global extroversion. They are friendly people, with a large number of social contacts. At the same time, however, they are assertive, dominative with a tendency to leadership. These traits allow them to be independent in decision making; it is similar in ATCs' profile.

Tab. 2. Differences between groups in ANOVA statistics for Extraversion trait

Personality Trait	ANOVA		Managers n = 60		ATC n = 25		Others n = 25		Managers – ATCs	Managers – others
	F	p	M	SD	M	SD	M	SD	Post-hoc p	Post-hoc p
Extraversion	7,586	,001	6,85	2,39	5,60	2,45	4,88	1,62	,056	,001
Warmth	2,21	,109	5,63	2,35	5,68	2,50	4,48	2,49	,996	,115
Gregariousness	,652	,523	6,12	2,35	5,48	2,80	5,88	1,79	,685	,942
Assertiveness	4,014	,021	6,68	1,88	6,68	2,21	5,36	2,27	1,000	,021
Activity	8,506	,000	6,75	1,92	5,36	1,98	5,00	2,25	,012	,001
Excitement-seeking	7,589	,001	6,73	1,92	5,24	1,74	5,40	2,00	,004	,011
Positive emotions	3,523	,033	6,72	2,30	6,44	2,43	5,28	2,09	,867	,026

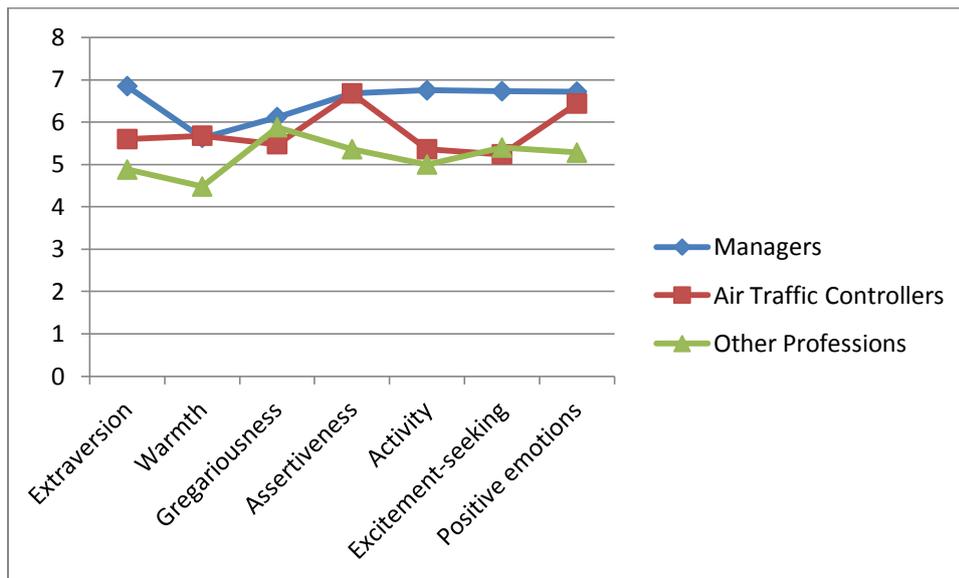


Figure 2. Profiles of Extraversion in analysed groups

But, in contrast to ATCs, not very high responsibility level allows them to be more active (e.g. work under time pressure) and risky. Rapid enterprise changes of the environment sometimes require risky decisions, which are not expected from ATCs. However, a lower level of the Excitement-seeking trait could be an impediment in effective management.

The third analysed personality trait was Openness to experience, for this dimension almost all means (for three groups) are lying above an average level (typically assumed as score between 4th and 6th sten), which suggests that decision making – in a broad sense – requires curiosity, tolerance and a special kind of unconventional thinking.

Tab. 3. Differences between groups in ANOVA statistics for Openness trait

Personality Trait	ANOVA		Managers n = 60		ATC n = 25		Others n = 25		Manager s – ATCs	Manager s – others
	F	p	M	SD	M	SD	M	SD	Post-hoc p	Post-hoc p
Openness	3,800	,025	7,43	1,82	7,68	2,34	6,32	1,73	,853	,044
Fantasy	,936	,395	7,05	2,32	7,36	1,93	6,52	2,18	,826	,574
Aesthetics	,336	,715	5,70	1,84	5,72	2,97	6,12	2,20	1,000	,786
Feelings	4,903	,009	7,33	1,92	6,20	2,60	5,92	2,18	,073	,018
Actions	1,583	,210	7,05	2,47	6,76	2,22	6,12	1,24	,934	,069
Ideas	4,682	,011	6,98	1,80	7,88	2,54	6,16	1,80	,145	,195
Values	19,818	,000	7,72	1,57	9,00	1,26	6,08	2,10	,001	,004

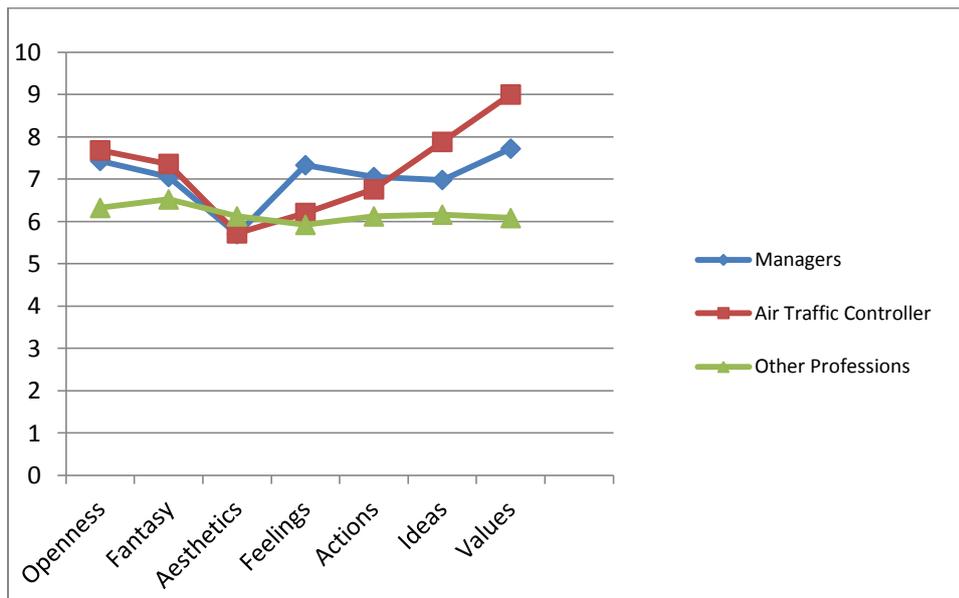


Figure 3. Profiles of Openness in analysed groups

A low responsibility level (in other professions group) is related to a relatively lower openness to experience in all of its factors, and almost all factors have similar averages. With increasing of responsibility profiles come more varied. Managers are similar to ATCs in general Openness trait and in Fantasy, Aesthetic and Action factors. Fantasy is probably important for an anticipation of possible consequences of decisions and makes the managers able of strategy planning. Managers, like ATCs, are also open to seek new possibilities, skills and chances to be better at decision making. Managers have a higher level of feelings, which suggests that they can recognize emotions (both themselves and other people's) and probably use them in management. People of other professions cannot do it well, and ATCs must not follow emotions. A significant difference is also observed between ATCs and managers in Values factor. Managers are less open to values than ATCs, but more than people of other professions. ATCs' high result is probably caused by responsibility for peoples' safety and life. management sometimes requires reinterpreting of constant values (e.g. about HR policy or environmental protection), so an effective manager should be open to new ideas, values or trends to take the most appropriate solution.

The forth analysed personality trait was Agreeableness. It shows the way of interpersonal functioning, positive or negative relationships and tendency to be dependent / independent from others.

Tab. 4. Differences between groups in ANOVA statistics for Agreeableness trait

Personality Trait	ANOVA		Managers n = 60		ATC n = 25		Others n = 25		Managers – ATCs	Managers – others
	F	p	M	SD	M	SD	M	SD	Post-hoc p	Post-hoc p
Agreeableness	2,240	,111	4,80	1,96	5,64	2,08	4,44	2,38	,214	,750
Trust	8,281	,000	5,60	2,32	6,96	2,79	4,12	2,47	,058	,035
Straightforwardness	3,379	,038	5,03	2,41	6,28	1,95	4,76	2,28	,062	,870
Altruism	2,976	,055	6,15	2,17	5,84	2,15	4,84	2,56	,833	,043
Compliance	6,170	,003	4,83	1,59	6,44	1,80	5,40	2,66	,001	,689
Modesty	,126	,882	5,12	2,35	5,00	2,36	4,84	2,29	,976	,873
Tender-mindedness	3,161	,046	4,90	1,94	3,80	2,36	5,12	2,07	,070	,896

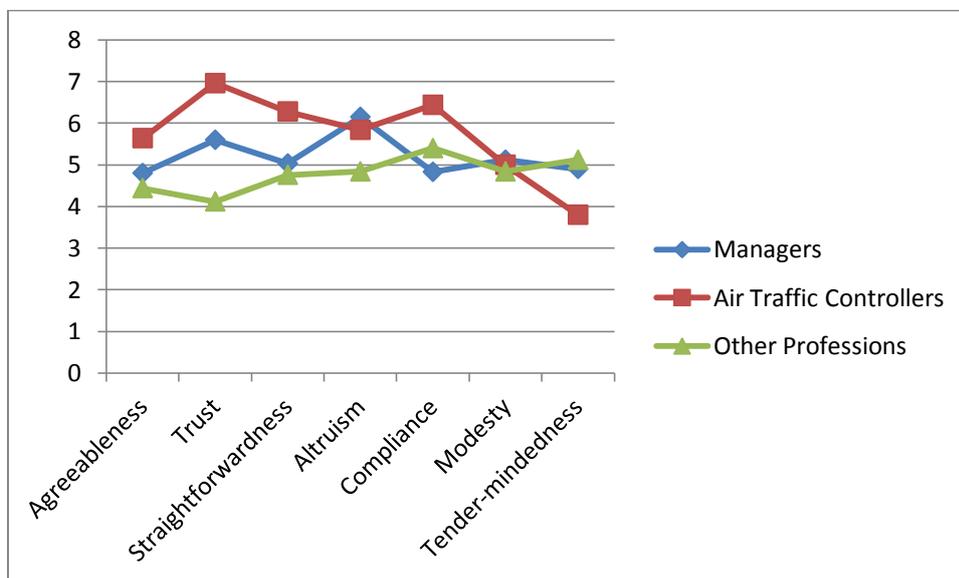


Figure 4. Profiles of Agreeableness in analysed groups

A high responsibility (represented by Air Traffic Controllers) is related to a higher level of agreeableness. ATCs are more straightforward and believe in other peoples' honesty. But, it is worth to note that their work needs such attitudes (e.g. trust towards airplane pilots or cooperate controller). Managers and other professions work in conditions with a lower responsibility, and they also know that nowadays an absolute trust towards everyone can bring negative consequences. ATCs are more able than managers to control angry and aggressive behaviour during interpersonal conflicts, while managers seem to be more dominative and rivalrous. Responsibility is also related to a low tenderness. Feelings or sympathy should not be related to work or decision making due to a possibility of negative consequences. It seems that among managers the level of Tender-mindedness could be lower (now it is the same like other of professions with low responsibility), especially when environment conditions require non-popular decisions.

The last personality trait which was analysed was Conscientiousness. This dimension characterises level of behaviour organizing, motivation to work to goals achieving, tendency to keeping order and beliefs about own competency.

Tab. 5. Differences between groups in ANOVA statistics for Conscientiousness trait

Personality Trait	ANOVA		Managers n = 60		ATC n = 25		Others n = 25		Managers – ATCs	Managers – others
	F	p	M	SD	M	SD	M	SD	Post-hoc p	Post-hoc p
Conscientiousness	7,131	,001	6,32	2,27	7,08	2,60	4,72	1,95	,342	,011
Competence	21,541	,000	7,15	1,63	8,52	2,08	4,96	2,44	,011	,000
Order	3,153	,047	6,85	2,43	6,40	2,66	5,40	2,14	,717	,036
Dutifulness	5,623	,005	6,17	2,19	7,04	2,57	4,88	2,28	,252	,053
Achievement striving	2,442	,092	6,23	2,48	6,64	2,41	5,20	2,27	,760	,176
Self-discipline	4,819	,010	6,00	2,50	7,16	2,70	5,00	2,08	,123	,208
Deliberation	1,034	,359	5,57	2,08	6,12	2,33	6,16	1,82	,507	,458

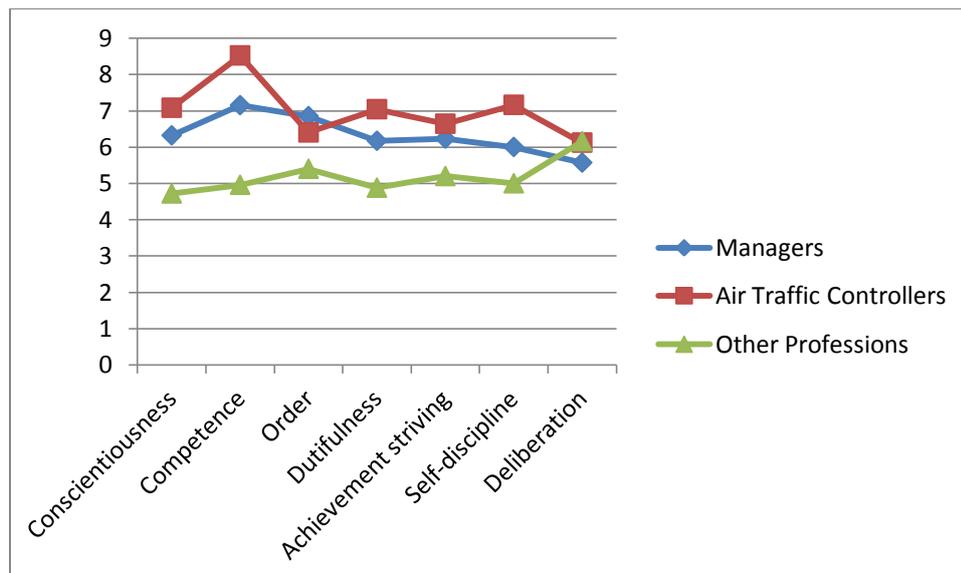


Figure 5. Profiles of Conscientiousness in analysed groups

Conscientiousness differs in the three groups, too.

People of different professions (with a low level of responsibility) have the lowest level of conscientiousness in all factors (excluding Deliberation). The highest responsibility (ATCs) is related to the highest level of the analysed personality trait. The most characteristic factor is Competence, which is the belief about one's possibility to cope with difficult situation. AT Controllers think about themselves as reasonable and effective people, whose decisions are

appropriate to situations. Managers have a bit lower level of Competence comparing to ATCs, but higher than other professions (the difference is significant in both comparisons).

The profiles of ATC and Manager groups are quite similar, and higher than profiles of other professions. It suggests that decision responsibility is related to Conscientiousness dimension.

2. Differences in emotional control dimension.

A special dimension of personality is emotional control. Differences between the analysed groups were found in emotional control: $F=50,70$, $p=.000$ for global emotional control possibility. In four of the five components the p is lower than .007, and only in one component – Situational control ANOVA is not significant.

Tab. 6. Differences between groups in ANOVA statistics for emotional control factors

Emotional control factors	ANOVA		Managers n = 60		ATC n = 25		Others n = 25		Managers – ATCs	Managers – others
	F	p	M	SD	M	SD	M	SD	Post-hoc p	Post-hoc p
Expression control	5,223	,007	50,32	11,16	56,56	7,42	47,32	10,78	,036	,453
Emotional - rational motivation	8,939	,000	48,90	10,46	58,44	10,27	53,92	7,04	,000	,083
Emotional resilience	6,128	,003	55,32	10,77	62,40	6,63	53,04	11,23	,001	,772
Situational control	1,069	,347	49,40	11,53	45,76	8,97	49,40	11,25	,346	1,000
Emotional excitability	11,633	,000	45,50	9,55	37,04	9,09	49,84	10,38	,001	,146
Emotional control	50,709	,000	52,75	10,33	71,76	6,12	67,76	8,41	,000	,000

A high responsibility level is related to good emotional control. ATCs are people who have skills to control their emotional expression in physical signs of them, like shaking hands, body movements, laughing or crying. They are also able to control their behaviour during an emotional arousal (both positive and negative). Decisions which they make have rational motives, irrespective of emotions. Managers seem to be more impulsive in their behaviour. Decisions made under the influence of emotions are significantly more emotionally motivated; even low responsibility in other professions is related to a higher level of rational motivating behaviour (statistical tendency).

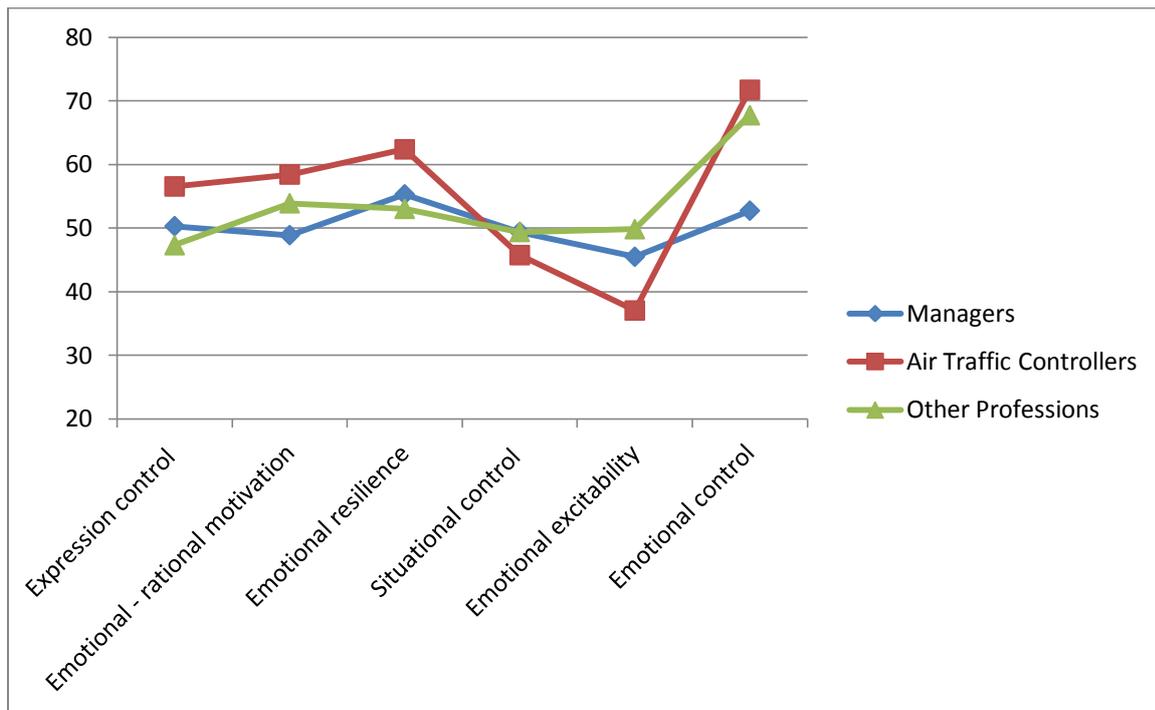


Figure 6 Profiles of Emotional control in analysed groups

A level of Emotional resilience (understood as possibility to act under pressure) among managers is similar to a low responsibility group. It suggests that ability to work without disorganising is more difficult for managers compared to ATCs.

Emotional excitability is also related to responsibility. With increasing responsibility, the level of emotional arousal decreases. This means, that people who have emotional resistance and whose emotional excitability threshold is high – have a possibility to achieve managerial positions. In case of ATCs only such candidates are chosen during recruitment process.

Situational control does not differ groups. Management is generally a situation in which the possibility to control situations, even these with emotional context, is rather small. The way of interpreting these situations is similar for the three groups; the anxiety component is not very high, so coping strategies may occur as often as avoidance behaviours.

Summarising these results we can say, that managers have a significantly lower level of emotional control than ATCs, and they are similar to people with a low responsibility (no significant difference). It means that natural selection in career progression does not provide emotional stability for a manager.

3. Path models explaining responsibility level fit to personality traits

The next aim which was taken was to find traits which can predict the effective functioning on different levels of responsibility. Two path models were estimated.

The first one (Model 1 – Figure 7) was built on the basis of the earlier profile analysis. In this model a set of personality traits (from Big Five subdimensions) explains directly or indirectly (through an emotional – rational motivation or emotional excitability) the responsibility level. This model is poor in terms of fit (Table 7), although it allows us to predict a rather large proportion of responsibility level (about 43%) using its explanatory variables. A closer look at this model shows that the influence of the emotional – rational motivation of the responsibility level is not significant. This led to an improved Model 2 (Figure 8), for which

emotional – rational motivation and its direct explanatory variables were taken out. Therefore, Model 2 is simplified - it includes 5 personality subdimensions instead of 7, and only one additional construct – emotional excitability. Fit of Model 2 is substantially improved compared to Model 1, and is characterized by very good fit indices (Table 7).

In Model 2 five independent variables are correlated. Anxiety has positive correlations with angry hostility and feelings, and negative ones with assertiveness and values. The highest path coefficient is for anxiety and angry hostility: ,43 which means a moderate but significant relationship. Other people's correlation indicators are low, with a clear but rather small relationship.

As it is shown in a model, some personality traits effect responsibility level directly, these are: anxiety, angry hostility, and values. Values and angry hostility are also related to emotional excitability and effect responsibility in an indirect way. Assertiveness and feelings have no direct influence on responsibility level and effect it indirectly by an emotional excitability.

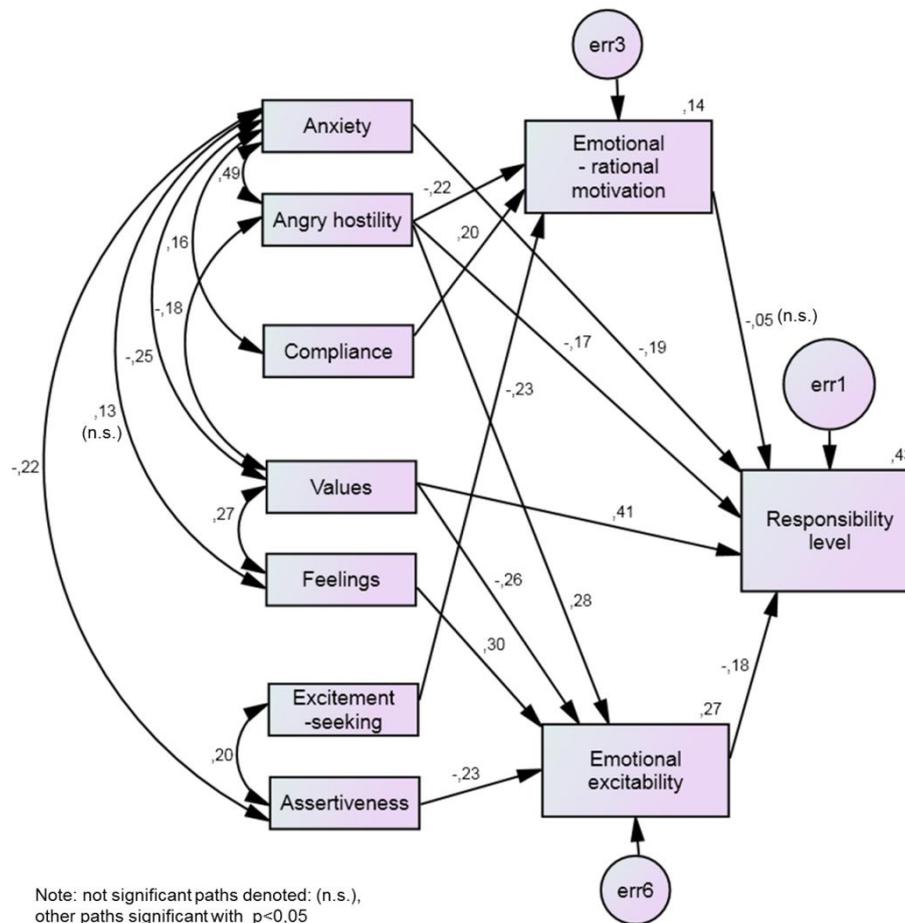


Figure 7 Structure and estimation results of path Model 1

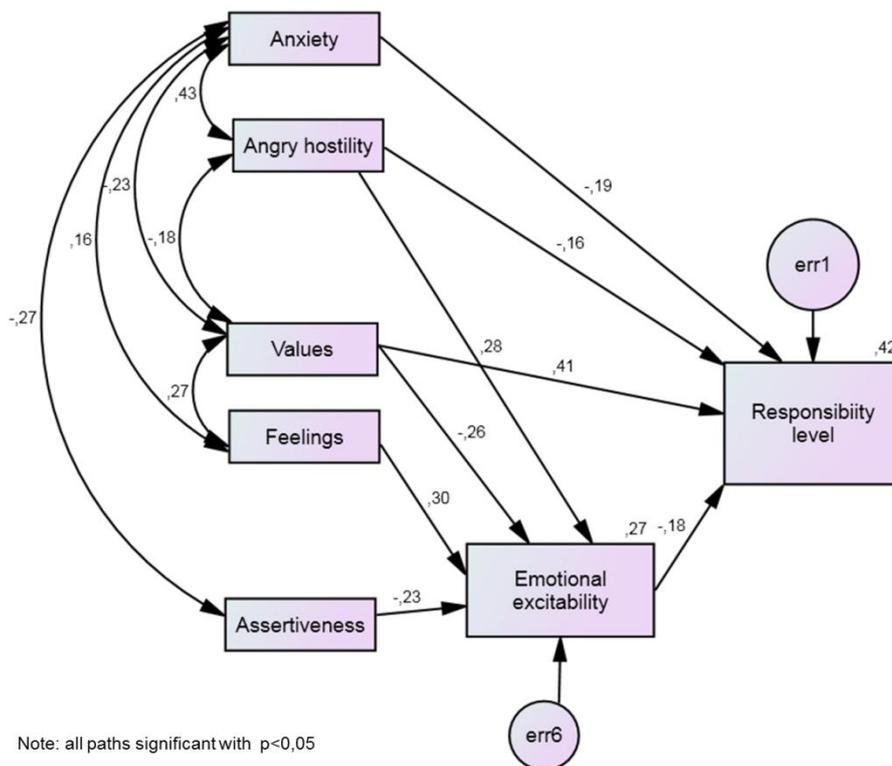


Figure 8 Structure and estimation results of path Model 2

The highest standardised path coefficient is for Values. This trait is understood as tolerance, but from other hand - openness and readiness to discuss different values or seeking other, even not quite accepted solutions. At the same time openness to values and new solutions and being tolerant can decrease emotions when faced with new situations, so emotional excitability level became lower. This two traits can make one's more responsible.

Anxiety is the only one personality trait which effects responsibility level directly in a negative direction. Anxiety persons (even without anxiety disorder) are nervous, full of tension, with a tendency to worry. General anxiety, which is a characteristic for people with high level of this trait, is not appropriate for high responsibly management positions.

Angry hostility with a tendency to experience and react with anger, irritation or hostile attitudes to others makes it difficult to clearly evaluate environmental and human conditions, so management becomes less effective.

Excitability trait is also affected by feelings, angry hostility and assertiveness. Feelings are understood as a sensitivity to one's emotions, which are experienced deeper and in a more differentiated way. A low feelings level suggests that emotional states are less intensive and are only of a little importance. Angry hostility means a tendency to react with anger, frustration and embitterment and these feelings are intensive. An increase of angry hostility is related to the increase in excitability level. The last trait which affects excitability is assertiveness, and its influence is negative. It means that assertive people – being dominative, authoritative and often natural group leaders – do not experience intensive emotions, especially negative, that they cannot control. These four traits explain 27% of an emotional excitability variation. Emotional excitability – in general – has a negative influence on a

responsibility level, which means that easier coming into emotional states (higher results in this scale) is related to poorer responsibility.

Generally, anxiety, angry hostility and values, and also emotional excitability (affected by angry hostility, values, feelings and assertiveness) explain 42% of responsibility variation. This model is fitting the data very well, and is characterized by very good fit indices.

Tab. 7 Estimated models fit measure comparisons

	Measures	Model 1	Model 2
Variance explained	Responsibility level	,433	,417
	Emotional excitability	,273	,274
	Emotional – rational motivation	,142	N/A
	<i>Chi-square/df</i> (below 2 or 3 better) ^a	2,734	1,147
	<i>p</i> (not significant better) ^b	,000	,330
	GFI (above ,9 is good fit)	,905	,980
Measures of fit	AGFI (above ,8 is good fit)	,791	,920
	NFI (above ,9 good fit)	,734	,951
	RMSEA (.05 or less better)	,126	,037
	PCLOSE (not significant better) ^c	,001	,509
	HOELTER (.05) ^d	61	191
	Conclusion about model fit	<i>Not acceptable</i>	<i>Good fit</i>

^a “rules of the thumb” suggested by Carmines and McIver (1981) or Byrne (1989).

^b for larger samples is often unreasonable to have significant *p*, see Jöreskog (1969).

^c “*p* value” for testing the null hypothesis that the population RMSEA is no greater than ,05 indicating close fit - Browne and Cudeck (1993).

^d Hoelster’s (1983) critical N to accept model at significance level of ,05 (with given chi-square statistic and degrees of freedom)

PRACTICAL IMPLICATIONS AND RESEARCH ORIGINALITY

The main originality of this paper is comparing managers with the ATC group as a specific kind of responsibility. This approach makes it possible to state conclusions about real role of special personality traits to be effective in coping with stress coming from responsibility. ATCs are chosen from candidates during long and formal recruitment process, in which personality traits and emotional control are assessed. So it is clearly said what kind of people (understood as a kind of personality) could be working effectively with a very high level of responsibility.

Managers must cope with a quite high responsibility, too, but they became managers in a natural way of career progression, usually no special recruitment procedures were taken. Managers’ responsibility for enterprise is higher than responsibility for daily life in the case of other professions, but not as high as for people’s life as in the case of ATCs. So it was interesting to check if there are any differences, and, if so (as it was supposed), in which traits managers differ significantly or are similar to ATCs.

Results show that in every analysed dimension there are significant differences in specific traits. It clearly suggests the existence of special structure of personality, which describes each group. So, it is possible to say that only special types of people can be effective managers (such as ATC), because these specific personality qualities are helpful to cope with special decision stress.

An estimated path model is good to predict what personality factors are related to a higher responsibility. So this model can be good as starting point to develop special tool (a scale, a questionnaire or e.g. a structuralised interview) in the aim to check if the person could be effective in coping with a high responsibility.

Nowadays, management is very difficult. We can distinguish specific conditions related to global situation, expansion of ICT, relations with a large group of people and level of personal responsibility for decision. Enterprises functioning in these continuously changing environmental conditions requires from managers to be a special kind of person in the aim to cope effectively with challenges. As a results of the presented study (both path model and profile differences) it is possible to develop methods to find people that tend to become managers, who could be more responsible in their decisions and the probability of making wrong decisions by them could be lower. The comparison of managers with the special group of ATC (which is of a special value for this study) clearly shows what kind of people are managers, and what personality traits should have lower or higher level to be more similar to ATC, especially in traits important in management. These traits can be different depending on the enterprise's size, profile, localization, actual aims and conditions. This is the reason that authors would not list on the specific needed factors and their level. But for every future manager in every kind of enterprise it is possible to make a specific tool to select the person who is most appropriate to the actual enterprise's needs.

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