

# Creative Business Environment as a Factor in Improving the Effectiveness of Maritime Agents

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## Summary

*This paper presents analysis of a survey conducted on marine agents and agencies in Split. The purpose of this research was to evaluate organizational effectiveness based on creativity of maritime agents and to determine if a creative attitude increases the level of organizational creativity in practice of maritime organizations in general. The research was empirical and survey was based on SOQ and factor analysis. The work of maritime agents is an important economical factor in a maritime-oriented country such as Croatia.*

**Key words:** organizational creativity, maritime inspectors, maritime agency

## Introduction

The purpose of this research was to evaluate organizational effectiveness based on creativity of maritime inspectors. A successful company is the one whose business is constantly growing and improving. A high challenge climate exists when the people are experiencing joy and meaningfulness in their job, and therefore, they invest much energy (Isaksen & Lauer, 1998).

Creativity is a complex and multi-faceted phenomenon. A general framework that approaches the more comprehensive understanding of creativity has been the classic four P's (Person, Process, Product and Place). For example, the most comprehensive picture of the creative person can be drawn by considering not only the characteristics or traits of the person, but also the kind of environment

or context in which the person works, the kinds of mental operations used, as well as the nature of the desired outcomes or products (Isaksen & Aerts, 2011). Organizational effectiveness and functionality greatly depend on the creativity of the workforce.

### **The survey for marine inspectors**

This survey was based on Situational Outlook Questionnaire (Isaksen et al., 1999).

1. Do you consider business as a challenge and personal involvement? Are you encouraged, emotionally involved and committed to work?
2. How free are maritime inspectors to decide on the method of performing their tasks? Do they have time to consider things before acting?
3. Is there dynamism in your work (plenty of events in organizational life)?
4. Is there trust and openness in your work? Do people feel free to express their opinions and offer different viewpoints?
5. Is there enough time to elaborate new ideas? Do you have time to explore and develop ideas which were not a part of the original task?
6. Is there playfulness and humour? Is the atmosphere relaxed? Is easy-going communication considered acceptable?
7. Are there any conflicts? To which extent do people engage themselves in interpersonal conflicts?
8. Is there a support to new ideas and are there means for testing them? Do people listen to each other generously?
9. Are there any debates? To which extent do people engage themselves in lively discussions on real interest issues?
10. How much risk is acceptable? Is failure considered normal?

### **Empirical research**

Based on factor analysis, the dimension "dynamism" was not included, and a questionnaire was reduced to nine dimensions. This instrument contains 50 items, and is constructed to evaluate supporting of creativity and change of every particular context. The subject of this research is the measurement of business creativity and development of creative environment in the work of maritime inspectors. The problem of this research can be formulated by questions: How effective is marine inspector who fosters creative business environment? Can fostering of creative organizational environment in maritime organizations result in increasing of organizational creativity in general?

Answers to these questions are aimed at developing knowledge about variables that allow the operationalization of creative business environment as a factor in improving maritime agents' effectiveness.

The objectives are achieved through the following tasks:

- determining inspectors' attitudes and their latent structure towards creative organizational environment;

- determining the correlation between marine agents' social status (sex, experience, position, level of education ...) and their attitudes towards the creative organizational environment;
- discussion about the results and drawing conclusions relevant to improving the effectiveness of management by fostering creative organizational environment

### **Research hypotheses**

Ha<sub>1</sub>: The level of business and organizational creativity of maritime agents contributes to the improvement of the overall creativity in maritime management organizations, as well as to the improvement of creativity in maritime business.

### **The type of the research**

The research is empirically based. A basic methodological approach used in the research was survey method<sup>1</sup> in which data were collected and analyzed with appropriate statistical method, presented and discussed. This method was chosen, as it proved to be quite suitable on the field for fact-finding with this type of variables. The method of theoretical analysis was used as a supplementary one. The contents of scientific debate and research dealing with these issues were also analyzed.

### **Population and sample**

The sample was meant to be drawn from the population of all maritime agents in Split. The sample was identified by random drawing using the systematic sampling method (every Nth from the list), providing that the original sample totalled in xx companies (it was expected that 20 - 30% of companies would not provide valid survey material). There has been a final sample of yy companies with valid survey material. The survey was being conducted from September, 2009 to January 2010. The confidence level of  $p < 0.05$  was estimated in the formed pattern.

### **Variables**

The main data collection technique was the electronic survey and personal survey (by authors of the paper). Sections in the questionnaire were:

- research unit and subject identification,
- questions identifying creative environment in the organization,
- questions on subjective preferences, satisfaction and attitude towards life

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<sup>1</sup> Answering questions about feelings, behaviour, etc. especially given the time variable (the change of a specific populations over time).

## **Data Processing**

Data were entered into the basic matrix and subjected to multiple controls (logic control, normality, regression analysis demands, item analysis). All variables were subjected to bivariate analysis. According to the prevailing nature of the data the selection of statistical methods was made that corresponds categorical data:

- Non-parametric tests - Chi Square test,
- Logistic regression,
- Path-analysis.

Depending on the nature of data, some other methods were applied (graphical representation of variables for exploratory insight etc.).

## **Survey results**

### **Variable system reliability**

Before the data analysis, it is necessary to determine to what extent the unit of variables "affects" the underlying construct of the research, namely, the construct of organizational effectiveness and the construct of creativity. Due to these checks, an item analysis was performed, using the reliability test by calculating Cronbach's alpha.

The high value of Cronbach's alpha (Cronbach's alpha: .966550) indicates the high reliability of the variables used for the underlying constructs of this research.

The average correlation between variables is low ( $r = 0.00$ ), allowing discrimination to identify relations between individual variables. Detailed analysis of individual variables, their contribution to the reliability of the total variable sample, suggests the existence of variables which increase the level of Alpha (a total of 33 variables) when excluded from the variable sample. There are also variables whose exclusion from the total variable sample causes low Alpha level (77 variables). The first category of variables has a lower value for this cognitive content, while the second category has a high value.

### **Characteristics of subjects**

Before analysing the survey results, it is necessary to determine the reliability of conclusions based on statistics that represent normal distribution of variables. If it proves that the appropriate distribution of data from at least ordinal measuring scale is normal (Gaussian curve<sup>2</sup>), then we can apply more powerful parametric tests. If this is not the case, it is necessary to apply less powerful parametric tests. The results of parametric tests applied to the data that do not satisfy the

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<sup>2</sup> Gaussian distribution or "normal distribution" is an important family of continuous probability distributions, applicable in many fields. Each member of the family may be defined by two parameters, mathematical expectation and variance (dispersion)  $\sigma^2$ .

premise of normality, can be taken as a guide to further analysis, but not as a reliable basis for inference.

### *Demographic analysis of subjects*

The requirement of normality is satisfied by the variable *Work experience (RDIS8)*. Other variables do not meet this requirement and this must be taken into account when choosing statistical tests. The absence of normal distribution for most variables limits the reliability of conclusions about subjects' uniformity of attitudes, as confirmed by coefficients of variation (except for variable STRSP6, where deviation of variability from average values is over 50%). The ratio of 40:60 in favour of the male subjects may be considered satisfactory for the social circumstances in Croatia. Data indicate that 90% are of urban origin and 70 % have high school education. Working experience shows that most subjects belong to the younger (51%) and middle (48%) generation.

## **Attitudes towards professional development factors**

### **Dimensions of Professional Development**

When asked what dimension is considered more important for professional development, there were three answers offered:

1. subjective - ability, self-confidence, interests
2. objective - working conditions, promotion, jobs and positions that vary in complexity, responsibility and organizational level
3. they are equally important

Respondents generally attributed equal importance to subjective and objective dimension (three quarters of the responses). Such a response can be interpreted as the lack of understanding of dimensions and their importance. Concerning respondents who gave priority to one of the two dimensions, the relatively higher proportion prefers subjective assumptions of professional development (15%) and a smaller proportion prefers priority to objective factors (9%).

### *Characteristics of subjects relevant to successful professional development*

Subjects were asked about the most important qualities for a successful professional development. They had to circle three characteristics among: high IQ, nice physical appearance, male / female, social origin and status of their parents, friendliness, obedience and resentment, moral integrity and independence, work, expertise, favouritism and initiative.

The results revealed three priority characteristics for successful professional development:

1. High IQ – 37.4%
2. Work – 44.9%
3. Expertise – 49.2%.

They were followed by moral integrity and independence (22.1%) and initiative (26.8%). The least important were features: male / female, social origin and

status of parents, and favouritism. Based on this ascertainment it can be concluded that the majority of respondents prioritize characteristics subjective to change if the individual is motivated and unless cultural constraints prevent the implementation of the necessary changes in individual's behaviour.

#### *Willingness to engage in improving of professional development*

On the question about willingness of intense commitment (to work, further training, travelling ...) in order to enhance their professional development, three quarters of respondents replied that they are quite ready and completely ready. These results lead to a conclusion that the activities of maritime inspectors are open to learning, which is essential in developing creative organizational environment.

#### **Correlation analysis**

Correlation analysis indicates that the higher the education, the lower the willingness in making effort to improve professional development (rsp = 0.147 with  $p < 0.012$ ). Furthermore, respondents who spent their childhood and youth in more urban environment, showed more willingness in additional efforts for professional improvement (rsp = 0.122 with  $p < 0.037$ ). The same relation was observed to be correlated positively on the levels of school education and the willingness to make additional efforts in professional improvement (rsp = 0.123 with  $p < 0.037$ ).

#### **Respondents' satisfaction with the professional achievement and conditions**

Four questions were asked regarding their satisfaction with the achievement and conditions of professional development: a) about their *own* professional development, b) about general social conditions for development, c) about attention paid to developing and motivating staff, d) about the possibility of acquiring new professional skills through different educational programs.

Concerning satisfaction with their own professional development, 50% of subjects showed the highest positive attitude (the average level of 3.93 with relatively smallest  $CV^3 = 22.13\%$ ), the other 25% showed satisfactory attitude and only 6.2% showed dissatisfaction. The opposite relation was indicated towards general social conditions for professional development of maritime experts (average level of 2.86 with relatively greatest  $CV = 39.51$ ). In this case the proportion of respondents who indicated dissatisfaction with social conditions was much higher (36.1%) than those who expressed satisfaction (28.7%). Respondents' satisfaction with the situation in organization, especially with employers' attitude towards developing and motivating staff, is in the central position on the satisfaction scale (the average level was 3.42 with a  $CV = 33.04\%$ ). It

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<sup>3</sup> Coefficient of variation.

should be noted that a significant percentage of subjects was undecided or dissatisfied (47.7%) with the evaluation of personnel management in their organizations. The same can be stated for the level of respondents' satisfaction with the possibility of acquiring new professional skills through different educational programmes (average level of 3.40 with CV = 33.52). However, the number of subjects who were satisfied with the possibility of further education was 51.4%.

### **Correlation analysis**

High positive correlation was observed between the variables "Satisfaction with attention paid to developing and motivating staff" and "Satisfaction with the possibility of acquiring new professional skills through different educational programs". A strong correlation between variables "Satisfaction with their own professional development" and "Satisfaction with attention paid to developing and motivating staff" was also observed. The respondents perceive the attention to development and motivation of maritime agents as an important factor in creating environment of satisfaction.

### **Personality characteristics of respondents**

Respondents were asked ten questions with implicit introspective assessment of the personality traits:

The highest ratings and level of mutual consent (CV) respondents indicated responding on two variables: "I find the tasks or activities that require autonomy and responsibility suitable for me" (81.6%); and "Demands that I impose on myself are within the limits of what I can do. (82%)

Orientation on activities relying on the abilities and making efforts identified 73.5% of respondents.

About three quarters of respondents (75%) identified introvert attitude, tendency of self-valuation (without comparing their effects and success with others). Tendency towards increased effort in solving problems at work identified 77.6% of respondents. Self-control in a situation when the job requires performing of annoying, repulsive and boring tasks identified 68.9% of the respondents, and more than one quarter did not identify with this feature (28%). Another situation of having self-control with the task of no interest for respondent was identified by a high percentage of respondents (71%). But 27.8% of respondents did not identify with that kind of self-control.

Issues implying negative attitude towards the persistence of problem solving, contained in the variable "Dealing with one problem for some time is a waste of time" divided respondents into two approximately equal subsets: 49.9% of those who identify with the reluctance of long-term problem solving and 48.7% of those who identify positively with it. The same variable was set in the positive sense "I am attracted to demanding and long-term tasks", and resulted with 57.6% positive, and 45% negative identifications. Finally, the variable "I am indifferent when I do not fulfil my obligations" was identified negatively with

75.9%, indicating respondents' refusal to identify with indifference to the commitments. This issue also raised the largest discrepancy with relatively highest coefficient of variation (63.40%).

### **Correlation of subjective characteristics**

Correlation analysis within subjective characteristics of the respondents shows the strongest positive correlation between variables "I do my best even if I am not interested in a subject" and "I work on problem solving, even though it requires a greater effort". Variable "I'm attracted to tasks or activities whose outcome depends on my ability and effort" has a strong correlation with other variables of subjective characteristics of the respondents:

- Concerning my success, I prefer satisfying my own internal criteria than comparing to others.
- I work on problem solving, even though it requires a greater effort.
- Demands that I impose on myself are within the limits of what I can do.

Creativity analysis demanded grouping of subjects into categories according to values attributed to all views / claims calculated from the scale applied in the questionnaire. The variable CRELEV was obtained by calculating the sum of all values attributed to each subject related to creativity. However, this variable measures respondents' attitudes to creativity within the organization where they work. This study analyses level of creativity of organization, so it was necessary to find an indicator of creativity based on the average score of all survey respondents within the same organization.

For that purpose, we calculated average values of more respondents in the same organization (for organizations with one respondent, the individual values were retained). Variables CREORG and CREORG\_rnk were obtained this way, the latter meant organization ranking as compared to the average value of the variable CREORG (where 100 is the average value of all organizations).

Concerning the average level of creativity grade of all respondents was 0.396 (median 0.428), we can conclude that in the sample of organizations in the research, the organizational creativity is at the "zero" level, and that ideas and behaviours of creative organizational environment are at early stages.

The analysis has led to the realization that there is a correlation between organizations and the level of organizational creativity. This correlation is strong with the weak negative correlation. Lambda test suggests that organization makes more influence on organizational creativity than vice versa. This finding is significant because it indicates an importance of a maritime inspector in creating a creative organizational climate. Such an atmosphere is not created by the spontaneous initiative of employees, but by initiative and interest of employers. Creative relationships are the key to success and, according to Nadrljanski Đ. and M. (2013, p.54), success is a resulting feature and has to be related to management of interactions rather than management of actions.



We verified these expectations by testing connections between grouped variables of organizational creativity and subjective characteristics of respondents. Tests of connectivity of all the variables from the battery of subjective characteristics of the respondents confirmed that only school education (SCED4<sup>4</sup>) was significantly associated with block variable CREORG4r at the level of organizational creativity.

The test of the power connection points to its low level. Pearson's correlation coefficient<sup>5</sup> shows a weak negative correlation between the observed variables. Lambda test of association between these variables confirms characterizing it as the dependent variable (the error of reasoning is reduced to 9.4% versus 0% if the variable SCED4 is put in that position). This finding suggests that school education is an important stimulus for creative behaviour.

Relatively low level of respondents' school education indicates the tendency in accepting creativity, but there is no required interest in management structures of activating such a tendency. More detailed insight into the connection between the group variable CREORG4r<sup>6</sup> with dimensions of creativity, confirms above mentioned lack of initiative in creating and developing creative organizational environment.

Selecting variables contributing to the level of organizational creativity we can distinguish the variable formulated with a statement "Conspiracies, traps, struggle for dominance and territory are common elements of life in the organization," which describes the environment opposite to one postulated as a creative organizational environment. Only two variables belong to a subset of positive claims while others are negative.

## Conclusion

Results of this study show that marine inspectors are mainly unsatisfied with current organizational practices and are therefore often oriented to modern approaches of improving effectiveness. Their tendency in accepting creative environment is positively correlated to the level of effectiveness of management in general. Social and experiential qualities of maritime agents are part of their attitudes and determinations towards fostering a creative environment. Finally, personality traits proved to have a significant impact on their attitudes towards creativity. Concluding the scope of this research one has to consider its limitations. There were certain limitations when determining the sample, as a number of agents and agencies did not respond to the survey material. To compensate

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<sup>4</sup> Educational level of Maritime Agents

<sup>5</sup> Pearson's correlation coefficient ( $r$ ) is the linear relationship measuring between two variables in a sample. The value of  $r^2$  is typically taken as the percent of variation in one variable explained by the other variable.

<sup>6</sup> CREORG4r is short for creativity of the organization where maritime agent works.

for this limitation, we used the request triangulation in analysing the results. The results of this research confirm that the development of maritime organizations is inclined to learning, and their advantage over conventional Tayloristic organizations is creativity, openness and change.

## References

- Rosenberg, Marc Jeffrey. *E-Learning: Strategies for Delivering Knowledge in the Digital Age*. New York: McGraw-Hill Professional, 2001
- Horton, William; Horton, Katherine, *E-learning Tools and Technologies: A consumer's guide for trainers, teachers, educators, and instructional designers*. New York: John Wiley & Sons, 2003.
- Bullen, Mark; Janes, Diane P.. *Making the Transition to E-learning: Strategies and Issues*. Hershey, PA.: Idea Group Inc (IGI), 2007.
- Bates, Toni (2001). National strategies for e-learning in post-secondary education and training. Paris: *Fundamentals of Educational Planning* – No. 70, UNESCO, 2001; [Http://unesdoc.unesco.org/images/0012/001262/126230e.pdf](http://unesdoc.unesco.org/images/0012/001262/126230e.pdf) (Access 2012)
- Isaksen, Scott G.; Aerts, Wouter S.. Linking Problem-Solving Style and Creative Organizational Climate: An Exploratory Interactionist Study. // *The International Journal of Creativity & Problem Solving*. 21(2) (2011), pp. 7-38
- Isaksen, Scott G.; Lauer, Kenneth J. *The Relationship Between Cognitive Style and Individual Psychological Climate: Reflections on a Previous Study*. Buffalo: Creative Problem Solving Group, 1998; p. 5
- Isaksen, Scott G.; Lauer, Kenneth J.; Ekvall, Göran. Situational Outlook Questionnaire: A measure of the climate for creativity and change. *Psychological Reports*, 85 (1999) pp. 665-674
- Nadriljanski, Đorđe; Nadriljanski, Mila. *Teorija sustava i upravljanja*. Split: Redak, 2013; p. 54
- Paulsen, Morten Flate. *Megatrends in e-learning provision: Preliminary project report on Sweden Finland, Denmark, Germany, and the Netherlands*. Brussels: Presentation at EuNeOn founding ceremony (2006)
- Ministry of Advanced Education. (2006). *Degree Program Review Criteria and Guidelines*. British Columbia, Canada. <http://www.aved.gov.bc.ca/degree-authorization/documents/degree-program-criteria.pdf> (Access 2007)