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Factors influencing creative labor of intellectuals in Vietnamese universities: Empirical insights

Vu Thi Hang[1], Nguyen Quoc Toan[2*], Nguyen Thi Thuy[3], Ha Thi Bac[4], Pham Thi Thu Huong[5], Do Van Sang[6]
[1]Hanoi University of Civil Engineering; hangvt@huce.edu.vn (V.T.H.)
[2,3]Faculty of Construction Economics and Management, Hanoi University of Civil Engineering; toannq@huce.edu.vn (N.Q.T.) thuynt3@huce.edu.vn (N.T.T.)
[4]University of Social Sciences and Humanities, Vietnam National University; hathibac0502@gmail.com (H.T.B.)
[5]Hanoi University of Industry; phamthithuhuong@haui.edu.vn (P.T.T.H.)
[6]National Economics University; sangdv@neu.edu.vn (D.V.S.)

Abstract: Intellectuals play a critical role in Vietnam's industrialization, modernization, and knowledge-based economy. This study explores the motivating environment fostering creative labor among intellectuals in universities, a key segment of this workforce. Using data from 256 staff members across 30 universities, the research employs expert methods and the Relative Importance Index (RII) to evaluate 16 influential factors. Results show that factors such as salary policies, work supervision, recognition of creative ideas, and intellectuals' self-learning spirit have the highest impact on fostering creativity. This study highlights the need for comprehensive institutional reforms to enhance intellectual motivation and creativity in higher education, offering actionable insights for policy and practice.

Keywords: *Creative Labor, Creativity in Higher Education, Higher Education, Motivating Environment, University Intellectuals, Vietnam.*

1. Introduction

The contingent of intellectuals plays an crucial role in the development of the country, particularly in the context of promoting industrialization and modernization in association with the development of the knowledge economy and international integration. In Vietnam, the number of intellectuals has increased rapidly both in quantity and quality in recent years. Statistics on the number of people with a university degree or higher participating in the labor market in 2009 were about 2.9 million people (5.55%), in 2013 it increased to approximately 3.7 million people (7.0%), in 2018 it increased to 5.26 million people (more than 9.5%) and reached 6.2 million people in 2021. Intellectuals participate in all fields of social life, each field of intellectual labor has its own distinct characteristics and creativity, thus intellectuals need to be dynamic, creative, and quickly evolving to suit the specific needs of each field. However, in the context of global economic integration, our country's intellectuals still have many phenomena of brain drain and brain waste, especially this team has not fully promoted their self-discipline and creative potential, and still passive and has not fully promoted its initiative active in work and research.

The most important characteristic of intellectuals is creative labor, and promoting the creative labor of intellectuals is the trend of the times as well as a development strategy for countries. Building a motivating environment including factors of material conditions, time, regime, free working atmosphere, democracy, fairness, equality and spirit will help maximize the creative labor ability of the intellectual team. The education sector, especially higher education, plays a huge role as producers of knowledge for society. In the face of three prominent issues in the context of higher education reform in Vietnam today: the trend of university autonomy, the requirement for human resource training to meet

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* Correspondence: toannq@huce.edu.vn

the requirements of social development and the promotion of deeper international integration, the issue of fostering and building a motivating environment that enhances creative labor in higher education institutions has become more urgent than ever.

2. Literature Reviews

The interest in human beings is a research topic that has attracted the attention of researchers around the world. Vlasova, Lyaskovskaya, Kozina, Aliukov [1] Research has shown that employees only use 20-30% of their abilities at work, while their creative and intellectual potential has not been unleashed. Ponomareva et al. [2] Considering the conflicts that arise in the universities during the interaction of the management team with researchers and lecturers. Thereby, the forms of evaluating the effectiveness of the university are built based on specific criteria. In addition, a number of studies have shown that improving the working environment can enhance the efficiency as well as the creativity of the intellectual workforce. Meusburger Peter [3] refers to the spatial differences of knowledge and the impact of the environment, space, and context on the production and application of knowledge. The research's contributions focus on the role of place, environment, and spatial context in the emergence and sustainability of creativity. Hendy Tannady, Yana Erlyana, Filscha Nurpriha [4] showing the influence of the working environment and personal capacity on the motivation of employees in the creative field. Abdul Raziq and Raheela Maulabakhsh [5] analyze the impact of the working environment on employee job satisfaction. Jan Dul and Canan Ceylan [6] examine the relationship between the creative workplace and the company's product innovation performance using a framework that assesses comprehensive and creation-focused factors including the characteristics of the physical working conditions and the 9 socio-organizational working environmental characteristics that are capable of enhancing employee creativity. K. L. Unsworth and C. W. Clegg [7], the factors that lead employees to initiate the creative process from the beginning were studied through semi-structured interviews with 65 engineers, in which time resources and personal self-discipline were considered as one of the factors influencing the decision whether the implementation of creative action is worthwhile or not.

Various studies in Vietnam have focused on researching intellectuals with the aim of recognizing the current situation, inadequacies and causes , thereby proposing solutions to expand the number and improve the quality of this social force. Nguyen Hoang Tien et al. [8] presentation on the human resource development strategy of Ton Duc Thang University to improve its position on the international rankings. The strategy focuses on training, drilling and improving policies, as well as applying science and technology, and working conditions for lecturers. Nguyen Thi Thanh Hoa [9] have pointed out the reality of a shortage in quantity and an insufficient quality of the intellectual contingent at the Vietnam National University of Agriculture. The author also affirmed that the development of intellectual human resources in the era of industrial modernization plays a very important role in determining the current success. Tran Thi Lan [10] study the labor quality of the current contingent of Vietnamese higher education intellectuals. The author also highlights the characteristics of the educational intellectual workforce consists of intellectual, creative, and high-level pedagogical labor. The transformation of this workforce will lead to a positively change in the education system. Nguyen Hong Hai [11] pay attention to creating an environment that promotes the role of young intellectuals in Vietnam's civil service. The factors identified by the author as having an influence on the environment enhancing the creative labor of intellectuals such as: Learning spirit, work management ability, vision building, etc.

The factors creating a motivating environment, as presented in related studies are summarized in the table below:

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Table 1.
Factors creating a motivating environment.

Factor	Factors creating motivating environment	References
NT1	Working material conditions	[6, 11, 12]
NT2	Inspiring workspace	[6, 11]
NT3	Private workspace	[6]
NT4	The organization's management system	[1, 13]
NT5	Influence of managers	[1, 13]
NT6	Payment system and salary policies	[1, 11, 12]
NT7	Work supervision and work administration	[6, 11, 12]
NT8	Recognition of creative ideas within the organization	[6]
NT9	Incentives and rewards for creative results	[6]
NT10	Task rotation	[6]
NT11	Colleagues and teamwork issues	[6, 11, 12]
NT12	Creative thinking time	[6, 7]
NT13	Creative goals, vision building	[6, 11]
NT14	Nature of work	[12]
NT15	Job challenge	[6]
NT16	The self-learning spirit of intellectuals	[7, 11]

3. Resarch methodology

3.1. Steps To Conduct the Study

- Step 1: Synthesizing the factors influencing the motivating environmental to create a motivation to promote the creative labor of intellectuals in higher education institutions through relevant research.
- Step 2: Expert group discussion on the influential factors and creative labor results of the intellectual workforce in higher education institutions.
- Step 3: Surveying, investivating and collect data on the factors affecting the motivating environment promoting the creative labor of intellectuals in higher education institutions.
- Step 4: Data processing using The Relative importance index method.
- Step 5: Analyzing the results.

3.2. Expert Group Discussion

Fifteen experts from universities were invited and provided with a list of motivating environmental influencing factors that motivates the creative labor of intellectuals in higher education institutions. The experts were asked to confirm whether each factor truly affects the motivating environment that enhances the creative labor of intellectuals. For each factor, the expert's evaluation was carried out on a 5-level likert scale, including: 1 Disagree, 2: Disagree, 3: Doubt, 4: Agree, 5: Strongly agree. The compilation of experts's opinions will be reviewed. Factors with high consensus of the expert group will serve as the basis for developing the survey questionnaire.

3.3. Survey

(1) Determination of survey sample size: There are various methods to determine the sample size depending on the research objectives. In this study, the authors identified the pattern size according to Hair et al. [14] stating that the minimum sample size should be 50, preferably 100, and the ratio of observations to measurement variables is 5/1, meaning that a minimum of 05 observations are required for each measurement variable. The study model has 16 independent variables corresponding to 16 considered influencing factors. The minimum number of samples is determined to be 95 samples.

(2) Sampling method: The point-selective sampling method is applied in the study. Based on the characteristics of training majors in Vietnam, the research team chose to survey at 30 universities across

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the country. The online and offline surveys were conducted simultaneously to take advantage of the research team's resources.

(3) Data processing: After obtaining the raw data, the research team proceeded to process the data, eliminating the answers that were incomplete or lack logical consistency in the responses. Data compilation with the support of Excel and prepare for the next step of analysis.

(4) Data reliability assessment: The reliability of the collected data is evaluated through Cronbach's Alpha coefficient. [15], in which Cronbach's Alpha is referenced as follows:

- Greater than 0.9: very good scale
- From 0.8 to 0.9: good scale
- From 0.7 to 0.8: acceptable scale.

At the same time, the total correlation greater than 0.3 ensures the reliability of the scale.

3.4. Relative Critical Index Method

Data analysis and processing are carried out using the Relative Importance Index (RII) method. The RII uses a scale of 1 to 5 to determine the influence of factors creating a motivating environment that promotes the creative labor of intellectuals in higher education institutions in Vietnam.

$$RII = \frac{\sum_{i=1}^{5} W_i x X_i}{\sum_{i=1}^{5} X_i} \quad (1)$$

In which:

- The degree of influence of factors creating a motivating environment that promotes the creative labor of intellectuals in higher education institutions in Vietnam.
- Wi: Impact rating on a scale of 1 to 5.
- Xi: The number of respondents who selected the "i" scale
- I: a scale from 1 to 5, specifically:
  1.0 ≤ RII< 1.8: No impact;
  1.8 ≤ RII < 2.6: Low impact level;
  2.6 ≤ RII < 3.4: Medium impact level;
  3.4 ≤RII <4.2: High impact level;
  4.2 ≤ RII < 5.0: Very high impact level.

4. Research Results

4.1. Results of the Expert Group Discussion

Table 2.
Results of the expert group discussion.

Factor	Factors creating a motivating environment	Grade	Coefficient of variation
NT1	Working material conditions	4.13	17.37%
NT2	Inspiring workspace	3.93	14.58%
NT3	Private workspace	3.00	17.21%
NT4	The organization's management system	4.07	16.72%
NT5	Influence of managers	4.00	15.81%
NT6	Payment system and salary policies	4.67	10.10%
NT7	Work supervision and work administration	4.07	18.98%
NT8	Recognition of creative ideas within the organization	4.20	12.90%
NT9	Incentives and rewards for creative results	2.93	19.55%
NT10	Task rotation	3.13	19.73%
NT11	Colleagues and teamwork issues	3.93	19.62%
NT12	Creative thinking time	3.27	17.56%
NT13	Creative goals. Vision building	3.93	19.62%

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Factor	Factors creating a motivating environment	Grade	Coefficient of variation
NT14	Nature of work	4.00	15.81%
NT15	Job challenge	3.87	18.57%
NT16	The self-learning spirit of intellectuals	4.27	10.36%

The results of Table 2 show that the variable coefficient for each good factor is less than 20%. This indicates that the 16 factors under consideration received a high consensus of the expert group. These factors are the basis for the author group to build a survey form.

4.2. Results of Investigation and Survey

(1) Statistical analysis

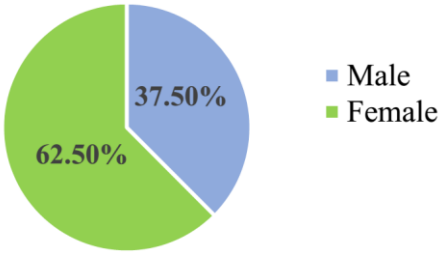

Figure 1.
Gender of survey participants.

The survey results had a total of 256 responses satisfying the sample size requirements. In terms of gender, the proportion of surveyed female subjects is more dominant, nearly double the proportion of men respondents(62.5% vesus 37.5%).

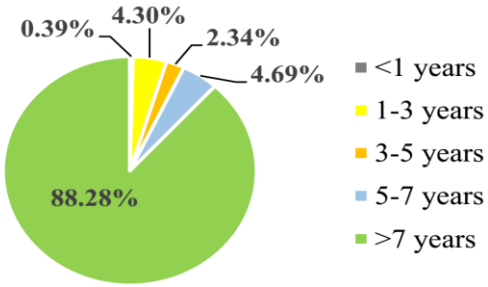

Figure 2.
Work experience of survey participants.

In terms of work experience, the majority of survey participants have more than 7 years of work experience (accounting for 88.28%), while the proportion of subjects with 1-3 years of experience and 5-7 years of experience participating in the survey is approximately the same lowly (4.30% and 4.69%). In addition, those with 3-5 years of working experience only accounted for 2.34%.

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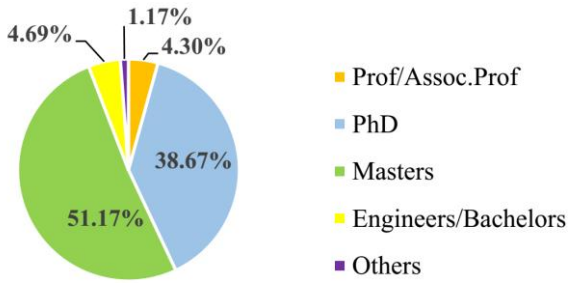

Figure 3.
Educatinal level of survey participants.

In terms of educational level, it can be seen that over 90.00% of the survey participants have a postgraduate education, of which the survey participants with a master's degree account for more than half of the number of respondents (51.17%), followed by those with a doctoral degree (38.67%) while the interviewees have a degree Professors/Associate Professors account for a small proportion (4.3%), approximately equal to the percentage of Engineering/Bachelor graduates (4.69%). The rest, other educational levels account for a very small proportion (1.7%).

(2) Cronback alpha test

Table 3.
Cronbach's Alpha.

Cronbach's alpha	Cronbach's alpha based on standardized items	N of items
0.921	0.922	16

The Cronbach's Alpha coefficient has an index of 0.921 (Table 3) and the total correlation of the factors from NT1 to NT16 is greater than 0.3 (Table 4). This result reflects a high degree of confidence in the collected data.

Table 4.
Corrected item-total correlation.

Factor	Scale mean if item deleted	Scale variance if item deleted	Corrected item-total correlation	Squared multiple correlation	Cronbach's alpha if item deleted
NT1	560.59	660.259	0.672	0.586	0.914
NT2	560.69	660.277	0.632	0.513	0.915
NT3	570.61	710.070	0.416	0.267	0.921
NT4	560.59	650.469	0.683	0.546	0.914
NT5	560.46	650.309	0.711	0.598	0.913
NT6	560.22	670.748	0.642	0.493	0.915
NT7	560.39	660.420	0.703	0.559	0.913
NT8	560.30	680.345	0.619	0.486	0.916
NT9	570.26	670.397	0.467	0.318	0.922
NT10	570.71	670.401	0.672	0.509	0.914
NT11	560.77	650.766	0.659	0.531	0.915
NT12	570.72	670.965	0.643	0.458	0.915
NT13	560.65	650.288	0.739	0.612	0.912
NT14	560.81	660.697	0.655	0.539	0.915
NT15	570.32	700.305	0.372	0.225	0.923
NT16	560.41	650.967	0.700	0.606	0.913

4.3. Results of Indicators of Relative Importance for Factors

The relative importance score for the factors is summarized in the table below:

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Table 5.
Relatively important index scores.

Factor	Factors creating a motivating environment	RII	Assess
NT1	Working material conditions	4,04	High impact level
NT2	Inspiring workspace	3,94	High impact level
NT3	Private workspace	3,03	Medium impact level
NT4	The organization's management system	4,05	High impact level
NT5	Influence of managers	4,17	High impact level
NT6	Payment system and salary policies	4,41	Very high impact level
NT7	Work supervision and work administration	4,24	Very high impact level
NT8	Recognition of creative ideas within the organazation	4,33	Very high impact level
NT9	Incentives and rewards for creative results	3,37	Medium impact level
NT10	Task rotation	2,92	Medium impact level
NT11	Colleagues and teamwork issues	3,86	High impact level
NT12	Creative thinking time	2,91	Medium impact level
NT13	Creative goals, vision building	3,98	High impact level
NT14	Nature of work	3,82	High impact level
NT15	Job challenge	3,31	Medium impact level
NT16	The self-learning spirit of intellectuals	4,22	Very high impact level

The results of the relatively important index show that there are 7/16 factors (accounting for 43.75%) have a high influence, 5/16 factors of medium influence (accounting for 31.25%), 4/16 factors of very high influence (accounting for 25.00%). Factors with low or no influence are not recorded.

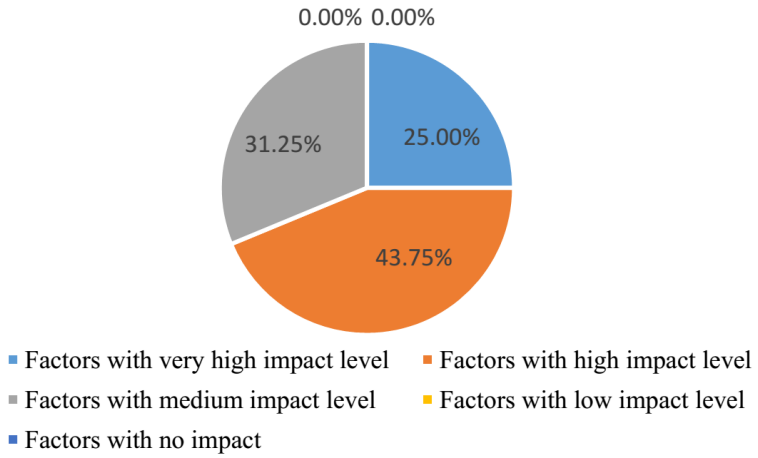

Figure 4.
Ratio of influencing factors.

4.4. Analysis of Factors Influencing Motivating Environment that Enhances the Creative Labor of Intellectuals in Higher Education Institutions

(1) The factors with a very high influence include 3 factors related to the employer (payment system and salary policy, job supervision, work management, recognition of creative ideas within the organization) and 1 factor that stems from the intellectual individuals themselfs (the self-motivated learning spirit of the intellectuals).

The payment system and salary policy play an important role in the operation of higher education institutions. In Vietnam, a large proportion of universities are under the management of the Ministry of Education and Training and some others are diretcly under sector-specific Ministries management.

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Although belonging to different subordinate ministries, the wage policy is also different, but it is still low. The common salary of those surveyed ranged from 12 million to 25 million (including allowances). Respondents believe that the current salary policy can ensure the basic living-standard for intellectuals but it does not signinificantly contribute to promoting creative labor. Circular 07/2024/TT-BNV [16] promulgated on July 5, 2024, it has adjusted the salary increase but has not yet met the change in the slippage of goods, leading to have not improved theliving conditions of intellectuals.

The intellectual contingent at universities is categorized into 2 groups including administrative officials and teaching officials. Teaching staff have variable working hours from week to week and offer flexibility. Currently, universities have established a system for work supervision and management. Some institutions have used support systems such as fingerprint monitoring and face scanning system for supervision. Many universities have used a monitoring system in the form of face-to-face checking. According to the surveyor's assessment, a good work monitoring and management system will help the intellectual team easily control their work. At the same time, it helps them have a high concentration time for work, thereby promoting their creative labor ability. The RII score of the factor " Work supervision and work administration" was assessed at a very high level (4.24 points).

"Recognition of creative ideas within organization" is a factor evaluated at a score of 4.33. This indicates that the desire of intellectuals for recognition is very strong. The recognition of the organization will motivate the intellectual team to continue to dedicate for the organization. Many survey responses also said that the recognition of ideas should go hand in hand with promoting the application of research in practice.

The self-learning spirit of intellectuals is also a factor that is evaluated with a high impact score (4.22). The university is a place that gathers a large contingent of intellectuals. At universities, research is a criterion for evaluating the level of work completion of lecturers. Over 95% of participants responded that their research tasks were completed at a satisfactory to excellent level. However, high-quality research products such as international articles with indexes, state-level topics, ministerial-level topics, inventions, and patents only focused on a small number of people. These people exert strong efforts in the field of research to reach management positions and senior lecturer positions.

(2) High-impact factors covering many impact including: Working material conditions, Inspiring workspace, The organazation's management system, Influence of managers, Colleagues and teamwork issues, Creative goals, Vision building and Nature of work.

Working material conditions and working space are external factors that respondents are interested in. The "Working material conditions" factor is rated at a score of 4.04 and the "Inspiring workspace" factor is rated at 3.94. The workplace is considered a "second home" that occupies a lot of the respondent's time during the day. Some respondents said that workspace has a significant impact on their daily experiences, emotions, and productivity. Currently, universities are equipped with basic material conditions for staff such as desks, printers, photocopiers, and projectors. Each department, faculty, and office has its own room facilitating for organizing professional activities. However, it is also necessary to recognize the reality that the physical working conditions and working space at universities only meet the basic requirements. The limited workspaces are often utilized for a variety of purposes with many combined organizational activities.

The factors "Organization's management system" and "Influence of managers", "Colleagues and teamwork issues" have evaluation scores of 4.05 points, 4.17 points and 3.86 points, respectively. These factors have an impact on the working motivation of officials within organization. The more transparent, fair, and efficient the management system, the more people engage to woking long-term with the organization. Some proofs from Hanoi University of Civil Engineering, Hanoi University of Architecture, University of Social Sciences and Humanities,etc demonstrate that managers foster unity, encourage collaboration and support each other at work.

The factor "Creative goals, Vision building" has a score of 3.98. Currently, universities always have a clear definition of goals and vision. Based on the goals and vision, the universities have stragies to promote research activities through grassroots level projects. In fact, research activities at universities are also based on the research objectives and orientations of specialized management ministries and Departments of Science and Technology in the provinces. Annually, specialized management ministries

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and Departments of Science and Technology will promulgate topics to select implementation organizations and topics that assign specific units for implementation. Many opinions from the survey indicate that intellectuals themselves also need to develop specific research objectives and should be align with the organization's goals. This will help them achieve their research topics and ensure that their research products have greater practical significance.

The factor "Nature of work" got a score of 4.00. This factor received a lot of feedback from surveyors from universities in the fields of production, processing, construction and technology. The research topics in this group of universities are considered to have clearer practical opinions than the group of universities in the fields of social sciences and humanities, education and training, information and business. Many experimental production projects at universities in the fields of production, processing, construction and technology have been implemented and brought significant benefits to society such as organic food production, concrete printing,

(3) Medium influencing factors include: Private workspace, Incentives and rewards for creative results, Task rotation, Creative thinking time, Job challenge.

The factor "Private workspace" is rated at 3.03 points. This factor is rated at an average level of influence. Survey participants believed that working at universities requires interaction and flexibility. Private space is a favorable condition for intellectuals to work with concentration but it is actively arranged by each intellectual.

The "Incentives and rewards for creative results" factor were evaluated at a score of 3.37. Currently, universities have a mechanism to reward and honor individuals and research groups with outstanding research results. The recognition of universities is reflected in both material and spiritual aspects. There are also relatively large differences among institutions. Some universities have low research product rewards evaluated by respondents such as Hanoi University of Civil Engineering, Hanoi University of Architecture,etc. In contrast, various institutions have research product rewards evaluated at an appropriate level, such as Ho Chi Minh City University of Science and Technology, National Economics University,etc. Besides, there is also a significant discrepancies between public universities and private institutions.

Task rotation will affect work results in the initial period. However, according to the respondent's opinion at the universities, the rotation of tasks occurs rarely or has been well prepared. Therefore, the factor "Task rotation" was assessed as having an average impact (2.92 points).

Creative thinking time (2.91 points) and Job challenge (3.31 points) are the 2 factors with an average level of influence. Some experts participating in the survey said that scientific research is a long-term process of accumulating knowledge and experience. A creative idea is the result of a process of reflection and exploration about expertise and reality. Therefore, it is impossible to separate the time allocated for creative thinking. In addition, to gain success at work, it is necessary to set work goals with higher requirements. Intellectuals themselves need to make efforts to overcome challenges and difficulties at work.

5. Conclusion

The contingent of intellectuals in universities with the continuous development of quantity, quality as well as creativity is an increasingly important driving force in the process of socio-economic build and development. In this study, sixteen factors were found affecting the motivation that promote creative labor of intellectuals in universities in Vietnam. These factors have an influence ranging from moderate to very high level and cover a wide range of problems. Four out of sixteen factors have a very high level of influence which are related to salary policy, work supervision, the recognition of the organization and the striving spirit of intellectuals. Seven out of sixteen factors have a high impact relating to working material conditions and workspace, management system, managers, colleagues, the goals of the organization and the nature of work. It can be seen that there are many factors originating from universities influencing the motivation that promote the creative labor of intellectuals in universities in Vietnam. This also offers suggestions for universities. To promote the intellectual contingent to achieve accomplishments, it is necessary to make drastic changes from the leadership of

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universities. These changes needs to be implemented comprehensively including facilities improvement, remuneration regimes, a flexible organizational structure and appropriate support.

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