

The Impact of Motivation and Hygiene Factors on Research Performance: An Empirical Study from A Turkish University

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ABSTRACT: The purpose of this study is to find the differences of the effect of motivation factors and hygiene factors on research performance of Foundation University members in Turkey on the number of articles published in Science Citation Index and Social Science Citation Index. The study was conducted on 150 academics in a Turkish Foundation University. The following results are obtained from the study: i) The perception of academics on the effect of hygiene factors which include salary, job security, company policy-administration, supervision, interpersonal relations, status and working conditions on research performance is positive except status, ii) The perception of academics on the effect of motivators which include the possibility of growth, work itself, responsibility, achievement, advancement and recognition on research performance is positive.

Keywords: Motivators; Hygiene Factors; Research Performance

JEL Classifications: I2; J

1. Introduction

Throughout the world there are ranking systems to assess universities. One of the most important criteria used to evaluate universities is research performance of academics. *The Performance Ranking of Scientific Papers for World Universities* is global ranking systems of 500 universities by scientific paper volume, impact, and performance output. The rankings are published by the Higher Education Evaluation and Accreditation Council of Taiwan (HEEACT). The HEEACT rankings use the following criteria: Research productivity is 20% (the number of published articles of the last 11 years is 10% and the number of articles of the current year is 10%). Research impact is weighed at 30% (number of citations of the last 11 years is 10%, the number of citations of the last two years is 10%, and the average number of citations of the last 11 years is 10%). Research excellence is 40% (the h-index of the last two years is 20%, the number of highly-cited papers is 15%, and the number of articles of the current year in high-impact journals is 15%). Turkish Universities are not in the *HEEACT Ranking*.

The other significant ranking system is *The Academic Ranking of World Universities (ARWU)*, commonly known as *The Shanghai Ranking*. It is a publication that was founded and compiled by the Shanghai Jiaotong University to rank universities globally. The ranking compares higher education institutions worldwide according to a formula that took into account alumni winning Nobel Prizes and Fields Medals is 10%, staff winning Nobel Prizes and Fields Medals is 20%, highly-cited researchers in 21 broad subject categories is 20%, articles published in the journals Nature and Science is 20%, the Science Citation Index and Social Sciences Citation Index is 20% and the per capita research performance of an institution 10%. Turkish Universities are the last place in ARWU Ranking.

The other system to evaluate the universities in the world is *The World University Ranking*. For this ranking the research performance is 30% of overall score and according to *The World University Ranking*, there are only three Turkish Universities which are in the range of 201-225 is Bilkent University. The others are Istanbul Technical University and Middle East Technical University in the range of 276-300.

Looking at all these or similar of world ranking universities measures it can be observed clearly that research performance of Turkish Universities are not in a good position. The purpose of this study is to examine factors affecting research performance of academics which are explained by Herzberg job motivator and hygiene factors by using perception of academics.

2. Literature Review

2.1. Herzberg Theory

The literature refers to it as Herzberg's theory, the two-factor theory and the motivation-hygiene theory. Herzberg et al., (1959) proposed that an employee's motivation to work is best understood when the respective attitude of that employee is understood. As a result of his inquiry into the attitudes of employees, Herzberg *et al.* (1959) developed two distinct lists of factors. One set of factors caused happy feelings or a good attitude within the worker, and these factors, on the whole, were task-related. The other grouping was primarily present when feelings of unhappiness or bad attitude was evident, and these two factors, Herzberg claimed, were not directly related to the job itself, but to the conditions that surrounded doing that job. The first group he called **motivators (job factors)**. These factors deal with *job content* and lead to *job satisfaction*. These factors are recognition, achievement, possibility of growth, advancement, responsibility, work itself. The second group Herzberg named **hygiene factors (extra-job factors)**. These factors deal with job context and lead to job dissatisfaction. These are salary, interpersonal relations, supervision, company policy and administration, working conditions, status and job security (Herzberg, 1968). These dimensions are not on differing ends of one continuum; instead they consist of two separate and distinct continua. According to Herzberg, the opposite of job satisfaction is not dissatisfaction, but rather a simple lack of satisfaction. In the same way, the opposite of job dissatisfaction is not satisfaction, but rather "no dissatisfaction".

2.2. Research Performance

Zainab considers research productivity to be reporting and publishing research findings in (inter)national journals, conference presentations, patent registration, impact factors and reviews (Zainab, 1999). The University of Utah defines research productivity as cited publication of library or field journal papers and book chapters (Ransdell, 2001). It has been recommended that the indicator of getting published in leading journals should have a higher weight than other indicators (Bloedel, 2001). Research productivity as an average number of published research report in the last two years (Sax *et al.*, 2002). Regarding gender, there are significant differences between males and females on number of published articles and impact factors (Turner and Mairesse, 2003). Research publication in the university is a major or most significant indicator of academic staff productivity. It may be pointed out that, research publication in any field of specialization provide current information for growth, progress, development and an improvement of society (Usang et al., 2007).

2.3. The Relationship Between Herzberg Theory and Research Performance

Hill's study provided support for the two-factor theory and he suggested that the model could be successfully applied to academic staff in higher education institutions. He concluded that job satisfaction of academic staff in universities and colleges is related to intrinsic factors (in particular, ministering to students and the work itself), and dissatisfaction is related to extrinsic factors, and arises from factors external to the job (Hill, 1986). She concluded that tenured and well-paid employment provides satisfaction of the lower-order needs, whereas prestigious and autonomous work enables academic staff to satisfy higher-order needs to a greater degree than is possible for the general population (e.g., esteem need the need for self-actualization) (Moses, 1986). They examined factors that impact on academics intentions to leave the university, and found that relations with colleagues were the largest predictor of intention to leave. They also found that general job satisfaction was a further strong predictor of intention to leave. In short, academics who found their work less intrinsically satisfying than others, more commonly intended to leave the university. Salary or economic resources as such did not appear to influence intentions to stay or go (Manger and Eikeland, 1990). The factors that affect research performance: Personal characteristics, area of research, funds/equipment/support staff, colleagues and work environment, number of PhD students, administrative demands, tenure and other explanation such as the cost of travel or promotion (Fiona Wood, 1990). Typically high status business schools value research productivity which is often reflected in a strong relationship and reward such as pay rises, tenure and promotion

(Konrad and Pfeffer, 1990; Pfeffer, 1993). They observed that, those working at high-status schools may accumulate advantages that should make it easier for them to be productive researchers to the extent that a school which is research oriented may likely attract greater incentives, as well as greater pressures to publish (Beyer et al., 1995). Leadership characteristics have received great attention. In particular, faculty member group size has been identified as one of the most significant predictors of faculty research productivity. Other features included factors included being a private rather than a public institution, having a larger number of full professors and having a larger percentage of faculty members actively publishing in peer-reviewed journals within a department (Dundar and Lewis, 1998). Several models have been proposed to measure and predict the research productivity of faculty members. One of the most commonly used theoretical model to study the research productivity is the Bland et al., (2005) model. Components of productive research organization: the individual, environmental, and leadership characteristics that prior literature has found to be associated with high academic productivity. For optimal productivity, all features in each component must be present and accessible (Bland et al., 2005).

3. Methodology

3.1. Sample

The sample of this study was selected in a foundation university in Istanbul. The sample consists of a total of 150 individuals from this foundation university including doctor, assistant professor, associate professor and professor.

3.2. Hypotheses

H1: The perception of academics on the effect of **salary** on research performance is positive.

H2: The perception of academics on the effect of **job security** on research performance is positive.

H3: The perception of academics on the effect of **company policy-administration** on research performance is positive.

H4: The perception of academics on the effect of **supervision** on research performance is positive.

H5: The perception of academics on the effect of **interpersonal relations** on research performance is positive.

H6: The perception of academics on the effect of **status** on research performance is positive.

H7: The perception of academics on the effect of **working conditions** on research performance is positive.

H8: The perception of academics on the effect of **the possibility of growth** on research performance is positive.

H9: The perception of academics on the effect of **work itself** on research performance is positive.

H10: The perception of academics on the effect of **responsibility** on research performance is positive.

H11: The perception of academics on the effect of **achievement** on research performance is positive.

H12: The perception of academics on the effect of **advancement** on research performance is positive.

H13: The perception of academics on the effect of **recognition** on research performance is positive.

3.3. Measures

The questionnaire, a 19-items scale, is designed to examine factors affecting research performance of faculty members of a foundation university by using Herzberg factors. All of these subscales were measured on a five-point Likert type scale, with responses ranging from 1 (strongly disagree) to 5 (strongly agree). The questionnaire was distributed to the sampled academic staff and an interval of one week was allowed for them to complete and return the questionnaire.

3.4. Research Findings

One-Sample Statistics show the mean score of variables. If the means of variables are bigger than the test value which is defined as 4, the hypotheses are accepted; if the means of variables are not bigger than the test value, the hypotheses are not accepted. In order to investigate the hypotheses of the study, t-test is applied and the results are given in Table 1 and Table 2. As shown in Table 1 the means of all variables are bigger than the test value but only the mean of variable twelve is almost test value.

Table 1. One-Sample Statistics with variables name and category according to Herzberg Theory

	Name of variables	Kind of factors	N	Mean	Std. Deviation	Std. Error Mean
VAR00001	<i>Supervision</i>	<i>Hygiene</i>	150	4,5867	,80424	,06567
VAR00002	<i>Job security</i>	<i>Hygiene</i>	150	4,5000	,84940	,06935
VAR00003	<i>Work itself</i>	<i>Motivators</i>	150	4,6533	,75961	,06202
VAR00004	<i>Salary</i>	<i>Hygiene</i>	150	4,6067	,75881	,06196
VAR00005	<i>Recognition</i>	<i>Motivators</i>	150	4,6133	,80089	,06539
VAR00006	<i>Growth of possibility</i>	<i>Motivators</i>	150	4,5200	,81693	,06670
VAR00007	<i>Advancement</i>	<i>Motivators</i>	150	4,5067	,73042	,05964
VAR00008	<i>Achievement</i>	<i>Motivators</i>	150	4,5800	,77086	,06294
VAR00009	<i>Interpersonal relations</i>	<i>Hygiene</i>	150	4,3400	,91834	,07498
VAR00010	<i>Responsibility</i>	<i>Motivators</i>	150	4,5200	,84122	,06869
VAR00011	<i>Working condition</i>	<i>Hygiene</i>	150	4,5733	,71744	,05858
VAR00012	<i>Status</i>	<i>Hygiene</i>	150	4,0400	1,23092	,10050
VAR00013	<i>Company policy and administration</i>	<i>Hygiene</i>	150	4,4800	,87255	,07124

H1 argues that the perception of academics on the effect of supervision on research performance is positive. H2 argues that the perception of academics on the effect of job security on research performance is positive. H3 argues that the perception of academics on the effect of company policy- administration on research performance is positive. H4 argues that the perception of academics on the effect of salary on research performance is positive. H5 argues that the perception of academics on the effect of interpersonal relations on research performance is positive. H6 argues that the perception of academics on the effect of status on research performance is positive. H7 argues that the perception of academics on the effect of working conditions on research performance is positive.

H8 argues that the perception of academics on the effect of the possibility of growth on research performance is positive. H9 argues that the perception of academics on the effect of work itself on research performance is positive. H10 argues that the perception of academics on the effect of responsibility on research performance is positive. H11 argues that the perception of academics on the effect of achievement on research performance is positive. H12 argues that the perception of academics on the effect of advancement on research performance is positive. H13 argues that the perception of academics on the effect of recognition on research performance is positive One-Sample T Test is used to analyze the hypotheses and the results are given in Table 2.

Table 2. One-Sample Test with variables name and category according to Herzberg Theory

	Name of variables	Kind of factor	Test Value = 4				
			T	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
						Lower	Upper
VAR00001	<i>Supervision</i>	<i>Hygiene</i>	8,934	,000	,58667	,4569	,7164
VAR00002	<i>Job security</i>	<i>Hygiene</i>	7,209	,000	,50000	,3630	,6370
VAR00003	<i>Work itself</i>	<i>Motivators</i>	10,534	,000	,65333	,5308	,7759
VAR00004	<i>Salary</i>	<i>Hygiene</i>	9,792	,000	,60667	,4842	,7291
VAR00005	<i>Recognition</i>	<i>Motivators</i>	9,379	,000	,61333	,4841	,7426
VAR00006	<i>Growth of possibility</i>	<i>Motivators</i>	7,796	,000	,52000	,3882	,6518
VAR00007	<i>Advancement</i>	<i>Motivators</i>	8,496	,000	,50667	,3888	,6245
VAR00008	<i>Achievement</i>	<i>Motivators</i>	9,215	,000	,58000	,4556	,7044
VAR00009	<i>Interpersonal relations</i>	<i>Hygiene</i>	4,534	,000	,34000	,1918	,4882
VAR00010	<i>Responsibility</i>	<i>Motivators</i>	7,571	,000	,52000	,3843	,6557
VAR00011	<i>Working condition</i>	<i>Hygiene</i>	9,787	,000	,57333	,4576	,6891
VAR00012	<i>Status</i>	<i>Hygiene</i>	,398	,691	,04000	-,1586	,2386
VAR00013	<i>Company policy and administration</i>	<i>Hygiene</i>	6,737	,000	,48000	,3392	,6208

As it is shown in Table 2, for all variables except variable twelve the p value of them is smaller than the significance level ($p = 0.000 < 0.05$). The p value of variable twelve is bigger than the significance level ($p = 0.691 > 0.05$). It can be said that the results of this study supported all hypotheses except H6.

4. Conclusion

By the study the motivation factors which affect the research performance of academics have been explained by Herzberg Theory and confirmed by the perception of academics of a foundation university in Turkey. According to the study academics think that the effect of hygiene factors except status on research performance is positive and they think the effect of motivators on research performance is also positive. That is to say the academics think that the effect of salary, job security, company policy-administration, supervision, interpersonal relations and working conditions on research performance is positive and also they think that the effect of possibility of growth, work itself, responsibility, achievement, advancement and recognition on research performance is positive. It seems that the academics think that the only effect of status is not positive on research performance.

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