

Academic Incentive Allowance: Scientific Productivity, Threats, Expectations

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ABSTRACT

The purpose of this study is to uncover the views of the instructors regarding the regulation on the Academic Incentive Allowance (AIA) applied in Turkey, to understand its reflection on the quality of the scientific products and to determine whether the findings to be obtained are generalizable. In the qualitative phase of the research conducted according to the mixed method paradigm, exploratory sequential mixed method design, three themes were obtained as potentials, problems and suggestions; and the qualitative findings were found to be generalizable. Despite the uncertainties and the new problems brought about by the AIA, it was found that positive results may be obtained and that the teaching staff has a positive attitude towards the application. However, it was also found that it leads to concerns about unethical publications and about focusing on the quantity rather than the quality.

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Keywords:

Publication incentives, exploratory sequential mixed method, scientific productivity, quality of scientific studies

Introduction

The Regulation on Academic Incentive Allowance (AIA) was put into force in Turkey on December 18, 2015, and was revised on December 31, 2016 as one of the means for financial support of scientific studies in order to encourage the faculty members to be productive. Within the scope of the AIA Regulation prepared in accordance with the Higher Education Law, a maximum total of 100 points can be obtained, with a maximum of thirty points from each of the following activity areas: *Project, Research, Publication, Design, Exhibition, Patent, Citation, Conference Talks, and Award*. Starting from the year 2016, financial support has been provided to the academic staff at different levels and at the rates indicated in the Regulation. An academician can get a maximum of 30 points on an activity area and a maximum of 100 points in total from all activity areas. Points to be taken from an activity area are influenced by several criteria such as the number of publications, quality, etc. Evaluation commissions are established in every faculty to evaluate the studies of academicians and academicians are not always satisfied with the commission's practices.

With AIA, it is planned to encourage scientific studies, to support those who do scientific work, and to increase the quantity and quality of scientific studies. Since AIA was put into practice in Turkey, there have been no studies about it in literature. For this reason, literature on the financial incentives of scientific publications has been examined. In the subject matter, academic performance is supported by financial incentives in many countries. For instance, in France, academics can receive payment a € 6,000 - € 15,000 scientific excellence bonus per year. In Mexico, the "National System of Researchers" contributes 50% to the

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salary of academics who are entitled to the promotion. Argentina incentivises researches by way of National Science Institute. Researchers in Israel can increase salaries by 13% in the face of successful work.

In South Korea, the government supports the universities that conduct research in areas determined by development policies through special funds. South African researchers are able to win \$ 7,000 - \$ 18,000 depending on their success. The Chinese universities pay a bonus to the academics for every study published in internationally acclaimed journals. In Nigeria, additional payment is made depending on the quality and quantity of the studies. Scientific publications are incentivised in various ways in India and Russia also. Universities in Saudi Arabia offer incentives and additional payments to academics at varying rates (Altbach, Reisberg, Yudkevich, Androushchak & Pacheco, 2012; Frixione, Ruiz-Zamarripa & Hernández, 2016; Yoem, 2015).

According to Alparslan (2014), academic incentives effect faculty members' job satisfaction positively. Al (2008, 2009) and Ertekin (2014) have indicated that TUBITAK's Incentive Program for International Scientific Publications which were put into effect for similar purposes before Regulation on AIA, have led to an increase in the number of scientific publications. Anil, Ertuna and Uysal (2015) suggested that research assistants should be supported by academic incentives to address their financial problems. However, even in these researches (Al, 2008; Al, 2009; Ertekin, 2014), which suggest that financial incentives will effect academicians' productivity and job satisfaction positively, it has been suggested that Turkey is in the lower rank in terms of parameters related to the quality of publications. For this reason, the quality of scientific products still maintains its place in the agenda. Within this context, Higher Education Council (HEC) suggested in a report about the Higher Education Strategy of Turkey (2007) that quality instead of quantity should be emphasized in encouraging scientific publications. These studies indicate that the incentives to increase productivity neglect the qualification.

The impact of incentives to increase academic productivity and the quality of publications is being discussed in the world as well. Lariviere (2013) found that doctorate students benefiting from research support were twice as productive and cited almost equally more than those who do not benefit. Some authors have suggested that the absence of an incentive system in their country has negative consequences for productivity. Jung (2014) pointed out that academic productivity is affected by factors that vary from person to person as well as by various common factors, and suggested that a logical incentive system should be developed to increase productivity in the light of common factors.

Iqbal and Mahmood (2011) argue that the absence of a reward system reduces scientific productivity. Svein and Dag (2015) stated that the research incentives had an impact on the increase of Norwegian publications, and added that increasing the number of publications became a target in itself. For this reason, publications are mostly in low impact journals. Brewer and Hilton (1990) found in their research on business schools that achievement awards helped to maintain research productivity, and that they were often used as a motivational tool in schools for this reason. However, studies of a large number of authors argue that publication quality is influenced negatively or is not influenced by incentives.

There are also researchers with a negative attitude towards academic incentive systems. Authors draw attention to the different threats of academic incentive systems. Good, Vermeulen, Tiefenthaler and Arnold (2015) noted that the Evaluation Methodology², put into practice in the Czech Republic encouraged lecturers to be opportunistic, and that the quality of the publications systematically dropped as in similar systems in Austria. Auranen and Nieminen (2010) stated that too much competition could become dysfunctional from the perspective of research and scientific publications. Bence and Oppenheim (2005) noted that an incentive system based on performance measurement would adopt a level of science acceptable for the evaluation system of the university units with research ambition if they were linked to criteria such as journal quality, but a metric ceases to be good one when it becomes the objective. Andersen and Pallesen (2008) suggested that academic publication incentives might lead to their negligence of teaching and administrative duties and them tending to the quantity of publications rather than quality. As a result, researchers particularly refer to the threat of dropping scientific publication quality. Turkey has problems in terms of publication quality in every field of science (Al, 2008, 2009) and HEC wants to solve this problem or mitigate the loss with AIA.

² Evaluation Methodology: A system in the Czech Republic, similar to the AIA, which regulates the incentive payment to scientific papers.

Considering the scientific and technological advances materialize through academic studies, it is expected that the scientific studies be encouraged. However, it is still unclear what will be the impact of awarding scholars in Turkey within the scope of the AIA, on the quality and the quantity of publications. In addition, the question whether the academics would tend to publish few papers with higher quality or more papers with lower quality is an important one. For this reason, the opinions of academic staff are important for laying out the potential problems in the incentive system. It is also important since the AIA is a new and present-day application and since there are no studies on or related to the topic.

In this research, the aim is to uncover the views of the instructors benefiting from the Regulation on the AIA applied in Turkey on the Regulation, to understand its reflection on the quality of the scientific products and to determine whether the findings to be obtained are generalizable. This research can be important to understand how the AIA can affect academicians' scientific productivity approaches.

Method

Study Design

This research was carried out with the Exploratory Sequential Mixed Design. The authors would like to learn the opinions of academicians in detail. As a result of this, the authors aimed to determine whether the opinions of academicians were adopted by other academicians through a quantitative survey instrument and carried out the research with the Exploratory Sequential Mixed Design. Exploratory Sequential Mixed Design has been chosen because it is necessary to develop a tool to measure whether academics opinions can be generalized.

Mixed methods researches are defined as a type of research that utilizes both qualitative and quantitative research methods to provide depth of understanding and validation (Johnson, Onwuegbuzie, & Turner, 2007). This research paradigm is used in conjunction with qualitative and quantitative data collection strategies, and the weaknesses of an approach are balanced by the other approach (Axinn & Pearce, 2006, Domínguez & Hollstein, 2014).

In exploratory sequential design, data of qualitative methods such as "words, pictures, and descriptions" can be generalized by integrating in the investigation of the same problem as the numerical data of the quantitative method and in this context, the aim of the exploratory sequential design can be identified as to develop better measurement methods for the special environment and to determine whether the data obtained can be generalized or not (Creswell, 2013; Hesse-Biber, 2010). Because of the absence of measurement and measurement tools, qualitative data from a few participants is used to form a quantitative measurement tool. By applying this measurement tool to quantitative sampling, it can be determined whether the results from the qualitative study group are generalizable to the environment (Creswell & Plano Clark, 2014).

Process

In the research process, two databases, primarily qualitative and subsequently quantitative, were obtained, analyzed, and discussed. The qualitative study group's views on the AIA were discovered and analyzed through a semi-structured interview form. The views of the instructors, which were discovered through qualitative data analysis and which constituted the qualitative database, were used to design and develop a quantitative scale. Thus, it is aimed to test the qualitative findings and to test whether they can be generalized to the environment. The quantitative data were collected and analyzed by means of the data collection tool. For this reason, the research process can be symbolized as "QUAL → quant".

Qualitative Study Group

In the qualitative stage, the study group of the research was composed of faculty members who worked at X University which has been selected for easy accessibility. There are 17 faculties and 4 institutes in X University. Maximum variation sampling was chosen to reflect the views of the different faculties. Thus, in the scope of Purposeful Sampling, faculty members from different faculties, titles and seniorities (different numbers of assist. professors, assoc. professors and professors) were included in the study group. In addition, the sampling was maximized by taking care that the participants' seniority was also variable.

Table 1. Information on the participants in the qualitative study group

Code	Gender	Title	Faculty	Seniority	Age
N1	F	Assoc. Prof	Education	15 years	39
N2	M	Assist. Prof	Science	13 years	37
N3	M	Res.Assist	Veterinary	4 years	26
N4	M	Assoc. Prof	Technology	11 years	36
N5	F	Assist. Prof	Pharmacy	9 years	34
N6	M	Prof.	Arts	25 years	58

Qualitative Data Collection Tool

In the qualitative phase, semi-structured interviews were conducted with participants in order to allow them to present their ideas. The interview was not limited to the questions in the interview form and the number and composition of the questions in the interviews varied according to the reply of the respondents. All interviews were conducted in a quiet room at the faculty of the academicians and took about 30 minutes. Interviews were also recorded and transcribed.

A pool of items for the questions to be asked to the participants were created by employing the literature about the financial incentives for scientific studies (Al, 2008; Al, 2009; Ertuna, 2014; Anil, et al., 2015; Ulutürk, 2015; Svein & Dag, 2015; Good, et al., 2015; Andersen & Pallesen, 2008) and the Regulation on AIA (2015). The items that were found to be compatible by expert opinion were applied through the interview form to two lecturers who were not involved in the study group but who were involved in the pilot study. As a result of these steps, it was determined that participants would be asked, in a semi-structured interview, two open-ended questions and follow-up questions that varied depending on individual answers. Data collection tools and informed consents were reviewed and allowed by Cumhuriyet University Research Ethics Commission

Qualitative Data Analysis

All interviews were recorded with a voice recorder. Recorded interviews were converted into text. Authors got participants confirmation. The causal relation and mutual effect were taken into account in encoding according to the code determined by an investigator in a text-dependent and line-based manner. Each transcript of the interviews was encoded by coders, and inter-coder reliability was calculated by running coding comparison queries (83% Auto Coding score). The encoding process was based on a reflexive approach, and accountability was considered as the basic issue.

The data were separated into parts, compared, examined, encoded, categorized, and the obtained categories were correlated with each other. Finally, the categories were associated with other categories that were important for the research purpose and the themes were revealed. In this context, open coding and selective coding techniques were used together in the encoding process.

During the interpretation process, the analyses that were used were the Inductive Descriptive Analysis and the Content Analysis. For descriptive analysis, direct quotes were used to reflect the views of the participants. During the Content Analysis, codes were created based on free coding contexts, and combined under common headings to create an encoding structure. In other words, the encoding process was governed by an inductive approach for qualitative analysis.

The data obtained by descriptive analysis were summarized and analyzed according to the theme that was appropriate for the purpose of the research. In this process, striking excerpts from participant interviews were given to reinforce the narrative. The themes obtained from the qualitative database were interpreted at the final stage of the interpretation process. Data were presented with the help of Pattern and Concept Maps that allow visualization of inter-theme relationships in order for readers to gain a common perception of data analysis and interpretation. After the qualitative data analysis and interpretation, the qualitative data were quantified and tabulated.

As the final step of the analysis, various queries were carried out on the data by using Nvivo 10 to enable readers to visualize in their minds. Furthermore, the analysis also included such data mining tools as Text Search Query, Coding Comparison Query and Compound Query. This study had four main components of

trustworthiness in qualitative research that is, credibility, transferability, dependability and conformability along with all ethical principles and processes.

Quantitative Sampling

The universe of the research is a total of 127,441 faculty members working at universities in Turkey³. The sample limit of the study is 384 faculty members, which is determined by considering 95% reliability and 5% error margin. The Random Sampling Method was used. In this context, 421 faculty members were selected from 12 different universities. The sampling process based on the randomization was carried out through the HEC-Academic Portal.

Table 2. Quantitative study group

Title	Gender				Seniority					
	Female		Male		0 – 5 years		6 – 10 years		>11 years	
	N	%	N	%	N	%	N	%	N	%
Prof.	13	19,70	53	80,30	0	0,00	0	0,00	66	100,00
Assoc. Prof.	22	31,43	48	68,60	1	1,43	6	8,57	63	90,00
Assist. Prof.	52	33,99	101	66,00	39	25,49	34	22,22	80	52,29
Res. Asst.	55	41,67	77	57,33	92	69,70	34	25,76	6	4,55

Table 3. Quantitative sampling based on sciences

Sciences	n	%
Engineering - Architecture Sciences	85	20,19
Science & Arts	78	18,52
Health Sciences	69	16,38
Economics and Administrative Sciences	67	15,91
Education Sciences	62	14,72
Fine Arts	60	14,25
Total	421	100,0

Quantitative Data Collection

A data collection tool based on qualitative data was developed by the researcher to examine the generalizability of the instructors' opinions on the effect of the AIA, on their productivity, and on the quality of their publications. In the scale, a quintile rating was used as "Completely Agree, Agree, Neither Agree nor Disagree, Disagree and Completely Disagree".

Using the codes, categories that were the result of interviews with participants in the qualitative stage were created as pool of items. In this process, only the findings obtained from the interviews were used, and the opinions of the researchers were not included. As a result of the examination of these qualitative findings, 12 items were written on the theme of positive effects, 21 items on the theme of problems, and 16 items on the theme of the suggestions. The prepared items were presented to an expert at doctorate level who was asked to state opinions as "Suitable", "Partially Suitable" and "Not Suitable". The items, which were considered partially suitable by the expert, were rearranged in line with the expert opinions; 4 items, which were not suitable, were removed from the pool of items. Thus, 45 items, which were reported to be suitable by the expert, were selected for the pilot study. The items were randomly arranged, and pilot implementation of the prepared scale was carried out on 271 faculty members outside of the quantitative sample group at Y University. One item, which was left empty, and one item, which was observed to be misinterpreted, was removed from the item pool.

³Based on Higher Education Commission data obtained from <https://istatistik.yok.gov.tr>

After expert opinion and pilot implementation, a 43-item draft scale was applied on the quantitative research sample. These data were used for scale development and quantitative findings in accordance with the procedures specified by Bulling (2005) and Creswell & Plano-Clark (2014). Before the exploratory factor analysis, the item-test correlations of the 43-item trial form were calculated and the BMD test (0.72) was applied. In addition, the Bartlett test and Chi-Square values were found to be significant ($p < 0.01$). Factor analysis was carried out a few times with the Varimax Technique; and by limiting the dimensions to three, a 100% consistency with the qualitative phase was sought. Any item that was inconsistent and that was below the factor load value of 0.35 was removed directly.

At the end of the Exploratory Factor Analysis, there were 3 factors with an eigenvalue of more than 1, as aimed based on the qualitative findings. The contribution of the three determined factors to total variance was 363.44%. The correlation coefficient of all the items in the scale was over 0.40. There was a significant differentiation between upper and lower 27% groups. As a result of the Confirmatory Factor Analysis on the scale, it was calculated that the ratio of X^2 to the degree of freedom was above 3 (3.06) and RMSEA was 0.094. Other values of the goodness of fit were also above the acceptable limits. After all of the operations, a scale consisting of 28 items (First Dimension 5, Second Dimension 16, and Third Dimension 7) was developed. The Cronbach Alpha and the reliability coefficient for the whole scale were calculated to be 0.764.

Quantitative Data Analysis

The data collection tool was applied to the quantitative sampling. Participants' answers obtained with the data collection tool were processed in PASW 18 program. Both descriptive and inferential analyses were performed on the data to determine whether the qualitative data was generalizable.

Findings

As a result of the analysis of the interviews, three themes were obtained from the views of the faculty members towards the AIA.

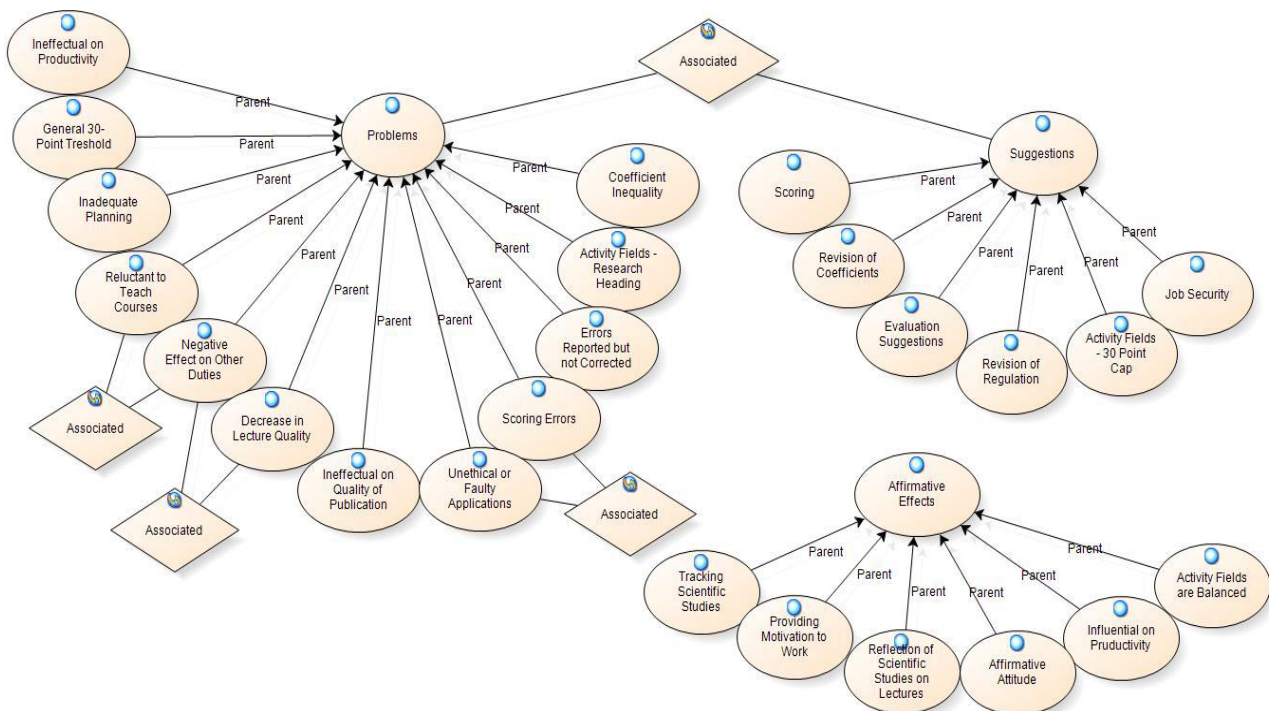


Figure 1. Qualitative themes

Theme 1: Affirmative Effects

Participants' attitudes towards the AIA were all affirmative and all participants indicated that it would have a positive impact on the productivity of the academics. Participants, who emphasized that the AIA would have a positive effect on their motivations and that it would lead to the emergence of more scientific work,

believed that the money to be paid will be an element of motivation. About the financial yields of productivity, K1 stated: "If you show an organism what it is attracted to, the organism will be directed there. For people, because money is important, the AIA will serve as a carrot for rabbit in this sense."

Participant K2 told that the maximum points to be taken from each activity field to 30 points would lead the faculty members to work in different fields, and found it positive. Thus, the category "guidance to work in diverse fields", which was suggested by participant K2 as positive is directly related to the "scoring" category, which is under the "problems" theme.

Participant K5 mentioned that faculty members with higher scientific productivity would be more renown in academic circles with this statement: "It was a means of standing out. Nobody knew anyone's publications, projects and work. The names surfaced on this count." Thus, this led to the idea that the AIA would lead the faculty members to follow the work of others. The fact that the names of the beneficiaries of the incentive will be announced will lead to the recognition of those do more scientific studies. Quantitative and qualitative findings for the affirmative effects theme are presented in the following Table-4 and 5.

Table 4. Quantitative display of affirmative effects theme obtained from qualitative data analysis

Theme	Category	f	%
Affirmative Effects	Positive attitude	6	100
	Positive effect on productivity	6	100
	Provides motivation for work	2	33,3
	Provides tracking of scientific studies	1	16,6
	Encourages increasing scientific studies and mentioning studies in classes	1	16,6

Table 5. Quantitative findings on the affirmative effects theme

Affirmative Effects Theme	Participants, Average, Standard Deviation			n	Completely Agree	Agree	Neither Agree nor Disagree	Disagree	Completely Disagree
	n	M	SD						
I generally find the Regulation positive.	421	3,50	,985	n	59	165	143	35	19
				%	14,0	39,2	34,0	8,3	4,5
The Regulation will have a positive effect on the productivity of the instructors.	421	3,55	1,042	n	76	158	133	31	23
				%	18,1	37,5	31,6	7,4	5,5
The money paid for scientific studies will be a motivation element for the instructors.	421	3,78	1,037	n	108	179	86	31	17
				%	25,7	42,5	20,4	7,4	4,0
The Regulation will be seen as a contest by the instructors and they will increase their scientific productivity in order to get more financial returns or to stand out in the competition.	421	3,40	1,004	n	54	48	150	50	9
				%	12,8	35,2	35,6	11,9	4,5
The fact that maximum of 30 points can be taken from an activity field will lead the instructors to work in different areas.	421	3,35	1,076	n	51	164	114	66	26
				%	12,1	39,0	27,1	15,7	6,2

In the survey, 14% of the respondents fully agree with the finding "I generally find the Regulation positive.", while 39.2% agree and 34% neither agree nor disagree. The proportion of those who disagree is 12.7%; and 48.2% of the participants of the quantitative phase indicate positive opinions and agree with the qualitative finding. This finding is moderately supported by the participants ($\bar{x}=3.50$). In the light of the data, it has been found that the overall attitude of the faculty members was positive.

The opinions of participants about the finding "The Regulation will have a positive effect on the productivity of the instructors" were as "completely agree" with 18.1%, "agree" with 37.5%, "neither agree nor disagree"

with 31.6%, “disagree” with 7.4%, and “completely disagree” with 5.5%. As a result, it was found that the participants moderately supported the qualitative finding ($\bar{x}=3.55$). As a result of participant responses, it was found that the finding was generalizable and the thought that the AIA would have positive influence on the productivity was common.

25.7% of the respondents said that they completely agreed to the statement “*The money paid for scientific studies will be a motivation element for the instructors*”, 42.5% said they agreed, and 20.4% said they neither agreed nor disagreed, while 7.4% said they disagreed and 4% said they completely disagreed. In this context, it was understood that the qualitative finding was moderately supported by the participants of quantitative phase and could be generalized ($\bar{x}=3.78$).

Theme 2: Problems

It was understood from participants’ statements that the categories “unethical or inaccurate applications to benefit from the AIA” and “deficiencies in planning of the Regulation”, which all participants agree on, are directly related. Participants suggested that insufficient planning of the Regulation has resulted in unethical and inaccurate applications, and instructors who did not deserve to receive the incentive payment benefited from the Regulation as a result of these applications.

According to academics, in almost all areas “unethical or inaccurate applications” is a threat. Participant K1 used the following expression for the unethical applications, which is related with the project activity field: “*We have seen that even the activities performed within the scope of ‘Social Service Practices’ course were presented within academic activity to attempt scoring points.*” K1 exemplified situations that may arise in the citation activity field as follows: “*During studies, if one has acquaintance with another, he/she can give the other a chance to earn points by citing the other’s work even if it is an unnecessary citation.*” One of the activity fields, which cause most concerns about unethical or erroneous applications, was research activity field. Participants indicate that there are no clear criteria for this activity field. In their reply to interview questions about the research activity field, while participant

K3 said, “*Some have submitted common procedures, which are not researches really*”, participant K5 stated that: “*Let’s say one will go on vacation to Antalya in July, with his family. He/she gets an assignment from June to July and goes to Akdeniz University (to do research). In fact, he/she does not go there and does not do the research*”. Participant K3 described the statements of beneficiaries, which were evaluated in the category of unethical or faulty applications, as: “*Among my colleagues, there were those who were deeply occupied with scoring points from here and there for a few bucks more. I considered this as penny-pinching*”. The examples given by the participants led to the finding that some instructors were trying to benefit from the Regulation by overstating the quantity of their work. For this reason, they think that the Regulation is insufficient in preventing unethical applications.

Participants also point out to the scoring errors in the activity fields. Participant K5, who believed that the quality of publications would not change, had the following statement regarding the scoring of publication activity field: “*A publication with an impact factor of 10 means 20 publications of lower quality. One does not publish 20 papers but publishes once in four years*” to emphasize that publishing papers of relatively low quality in higher quantity leads to more points according to the AIA. This finding about the higher quality publications not being appreciated despite the difficulties of publishing quality studies shows that the quantity of researches was prioritized rather than quality. The Participant K2, who pointed out to the same problem, stated: “*Consider one who has high quality publications at Harvard, Oxford, MIT level. S/he will definitely get the maximum score given in publications field, 30 points. If s/he limits his/her activities to publishing papers and being cited, the maximum score is 60 for him/her who works hard for 13-15 hours a day. On the other hand, one, who takes advantage of the system earns a few points from different fields here and there, may get 90-100 points. In this case, it is not that fair. One should not have to pursue projects or conferences in order to get more incentives.*”

The objections of the participants, who emphasized that this pushes the academics to focus on money, to the scoring were more concentrated on the fact that the score of each activity field was limited to 30 points. Participant K3 personified this and said: “*Last year, Prof. Aziz Sancar, a scientist of Turkish origin, received the Nobel Prize. However, it turned out that Sancar, when included in the AIA, would not be able to score full grade. This may also mean that our current system is not very effective or very good. He has enough activities to win the Nobel Prize,*

yet his name will appear behind those of the others who had scored full grade in scope of AIA". In the light of these opinions, it is understood that the fact that a maximum of 30 points may be obtained in an activity field is a big problem for the academics. Quantitative and qualitative findings for the problems theme are presented in the following Table-6 and 7.

Table 6. Quantitative display of problems theme obtained from qualitative data analysis

Theme	Category	f	%
Problems	May cause unethical or faulty applications	6	100
	There are deficiencies in planning	6	100
	Does not affect the quality of publications	5	83,3
	Scoring is wrong	5	83,3
	May adversely affect faculty members' other duties	3	50
	Research activity field was misconfigured	2	33,3
	Reported errors were not evaluated	2	33,3
	General 30-point threshold is wrong	2	33,3
	Its effect on productivity is limited	2	33,3
	Causes instructors to be reluctant to teach courses	1	16,6
	Reduces the quality of lectures	1	16,6
	There is injustice in coefficients	1	16,6

Table 7. Quantitative findings related to the problems theme

Items	Participants, Mean, Standard Deviation			Completely Agree	Agree	Partially Agree	Disagree	Completely Disagree	
	n	M	SD						
Since the scientific works to be encouraged under the Regulation are not defined clearly, there will be unethical or erroneous applications made in order to benefit from the incentive.	421	3,90	0,97	n	138	145	98	38	2
				%	32,7	34,4	23,2	9,0	0,4
Some instructors will try to exploit the Regulation by overstating their work in terms of quantity.	421	3,97	0,98	n	150	157	69	43	2
				%	35,6	37,2	16,3	10,2	0,4
Low quality works in high quantity will earn more score in the Regulation compared to high quality work.	421	4,08	0,91	n	167	150	77	26	1
				%	39,6	35,6	18,2	6,1	0,2
I think that it is a wrong practice to direct the instructors to work in different fields with a maximum of 30 points from an activity field.	421	3,17	1,18	n	72	99	101	128	21
				%	17,1	23,5	23,9	30,4	4,9
I do not think it is right to include only a small part worth of 30 points of the work of a person who does a lot of work in an activity field in the scope of the incentive.	421	3,81	1,11	n	137	143	83	42	6
				%	32,5	33,9	19,7	9,9	3,8
That a maximum of 30 points can be taken from an activity field aggrieves those who produce high-quality work in a specific activity field.	421	3,97	1,02	n	153	156	67	36	2
				%	36,3	37,0	15,9	8,5	2,1

Table 7 Continued.

That a maximum of 30 points can be taken from an activity field decreases some instructors' motivation to work more in these fields where they are good at.	421	3,65	1,08	n	97	162	94	52	16
				%	23,0	38,4	22,3	12,3	3,8
I do not find scoring on the activity fields in the Regulation fair.	421	3,65	1,04	n	108	121	138	44	10
				%	25,6	28,7	32,7	10,4	2,3
I think that promoting scientific activities will shift the instructors' interest to that area and have a negative impact on the teaching duties.	421	2,83	1,15	n	47	67	116	149	42
				%	11,1	15,9	27,5	35,3	9,9
Instructors will not want to teach courses that earn relatively less and are not required.	421	3,11	1,18	n	68	91	106	130	6
				%	16,1	21,6	25,1	30,8	6,1
I do not think the necessity of having at least 30 points in order to benefit from the Regulation is right.	421	3,72	1,23	n	148	114	70	70	9
				%	35,1	27,0	16,6	16,6	4,5
I think the research activity field is not well defined in the Regulation.	421	3,71	1,00	n	111	128	136	40	6
				%	26,3	30,4	32,3	9,5	1,4
I think it is unclear what activities will be evaluated within the scope of the research.	421	3,65	0,98	n	96	135	138	49	3
				%	22,8	32,0	32,7	11,6	0,7
The evaluation of applications made under the Regulation varies among universities or among faculties.	421	3,76	1,01	n	119	139	113	45	5
				%	28,2	33,0	26,8	10,6	1,1
I think that the instructors who take on more teaching and devote much of their time to this work are being victimized by being excluded from the incentive.	421	3,47	1,26	n	111	114	90	72	34
				%	26,3	27,0	21,3	17,1	8,0
That a maximum of 30 points can be taken from an activity field limits faculty members who produce successful work in a single activity field in terms of quality and quantity.	421	3,74	1,01	n	107	159	103	43	9
				%	25,4	37,7	24,4	10,2	2,1

While 32.779% of the respondents indicated they completely agreed with the finding that the uncertainties in the Regulation would result in unethical or faulty applications, 34.442% agreed, 23.278% neither agreed nor disagreed, 9.026% disagreed, and 0.475% completely disagreed. As a result of the analysis, it was understood that the participants gave a high level of support to this finding ($\bar{x} = 3.90$). The opinion that the Regulation may cause problems in applications since it is just in its first years and does not have clear provisions is common in academic circles.

The finding "Some instructors will try to benefit from the Regulation by overstating their work in quantitative terms" was also highly supported by the instructors included in the quantitative study group ($\bar{x} = 3.97$). Of the

respondents, 35.629% completely agreed with the finding, 37.292% agreed, 16.390% neither agreed nor disagreed, 10.214% disagreed, and 0.475% completely disagreed. This intriguing finding has shown that the instructors thought that some of their colleagues might exaggerate their work by manipulations in order to benefit from the Regulation.

In the survey, 39.667% of the respondents indicated that they completely agreed with the finding *“Low quality works in high quantity will earn more score in the Regulation compared to high quality work”*, 35.629% agreed, 18.2% neither agreed nor disagreed, 6.176% disagreed, and 0.238% completely disagreed. In the light of the answers given, it was found that the finding was supported by the participants at a high level ($\bar{x} = 4,08$). This finding, which is highly supported by the participants, suggests that the general scoring principles of the Regulation were found faulty by faculty members.

Theme 3: Suggestions

Participant statements encoded in the scoring category mainly contain recommendations related to activity fields and subheadings. Participants K4 and K5 expressed that "impact factor" should be taken into consideration in the evaluation of publications. Participant K5 expressed the effect of this proposal on the quality of publications by saying *“If impact factor is included, it would encourage making better publications”*. Parallel to this situation, participants K1, K4, and K5 indicated that it was necessary to increase the scores of the studies at international level. Participants K3, K4, and K5 made suggestions for the project activity field. While participants K3 and K4 indicated that the project score should be raised, participant K5 suggested that not only the finished projects but also the ongoing projects should be included: *“If one has a project, the project does not fall from the skies, there is a preparation, an effort. Here, the time people spend should be rewarded financially. In my opinion, an ongoing project should be considered in the evaluation”*.

Participants K4 and K5 proposed the inclusion of an activity field for undergraduate courses. They pointed out that the instructors, who took more teaching responsibility and allocated less time for their scientific activities, were penalized by the Regulation. With these statements, it was found that the existing balance between the scientific studies and the other duties of the faculty members has been perturbed in favor of scientific studies and that the other duties were affected negatively. It has been understood that the common consideration among the faculty members was that inclusion of a new activity field for other duties could be the solution.

Participant K1 suggested that the citations of a single person be limited and that the scores of international studies be increased to tackle the unethical studies. Participant K2 pointed out to the differences among the scientific areas and their principles and indicated that it was not possible to have equal conditions in each area and that it was difficult to make even a single publication per year in some areas. On the same subject, participant K5 said: *“It is more difficult to publish in social sciences. There are not many opportunities to publish and to get grants as in health sciences. Their efforts should not be ignored.”* The statements of the participants led to the findings that the instructors thought that the Regulation should be differentiated according to the scientific areas.

Participant statements in the evaluation category under the suggestions theme address the problems considered in the category of unethical or faulty applications. Participants expressed that there had to be a standard in the application of the Regulation, indicating that the evaluation process differed among universities, faculties, and even units. In this respect, it was recommended that the evaluation mechanisms prepared in the electronic environment be put into action, the evaluation process should be carried out by experts in every field, a standard practice is agreed upon, and that a system was established for auditing the declarations of the applicants.

Participants K2, K4, and K5 suggested that the 30-point cap on the score that can be taken from an activity field should be abolished. Participant K2 suggested that a second score cap could be added even if this cap had not been abolished, and the instructors, who work much more in an activity field and exceed a certain score, should benefit from the Regulation at the highest level: *“After a certain level is reached, there should not be a 30-point cap. So, for example, if one scores 130 points in one activity field, s/he will not be given top grade. But one, who receives 200, 250, or 300 points in an activity field, should get a top grade”*. When the related categories in the suggestions and problems themes were evaluated together, it was obvious that the 30-point threshold

necessary to benefit from the Regulation and the 30-point cap to the score that can be taken from an activity field caused intense discomfort among the instructors.

In particular, it is commonly thought that the 30-point cap to the score that can be taken from an activity field would limit the faculty members who succeeded in their studies both qualitatively and quantitatively in a field. In this context, it has been found that the participants believe that in the light of this Regulation, the faculty members will either lose their motivation to work in an activity field and be drawn to other activity fields in which they are not efficient or be penalized if they insist on working in an activity field without losing their motivation. Quantitative findings for the suggestions theme are presented in the following Table 8.

Table 8. Quantitative findings for the suggestions theme

Items	Participants, Mean, Standard Deviation			Completely Agree	Agree	Partially Agree	Disagree	Completely Disagree
	n	M	SD					
I think that the "Impact" factor should be taken into account when evaluating publications.	421	3,60	1,118	n 102	137	114	47	1
				% 24,2	32,5	27,0	11,1	4,9
I think that the points for the studies at the international level need to be increased.	421	3,88	1,038	n 139	149	89	33	1
				% 33,0	35,3	21,1	7,8	2,6
I think that the points given to the projects should be raised.	421	3,45	1,187	n 92	128	105	68	8
				% 21,8	30,4	24,9	16,1	6,6
I think that not only finished projects, but also ongoing projects should be included in the Regulation.	421	3,46	1,368	n 126	109	65	74	7
				% 29,9	25,8	15,4	17,5	11,1
Since the studies carried out in different scientific areas have different principles, the Regulation must be differentiated according to the scientific areas.	421	4,09	0,940	n 169	156	66	26	4
				% 40,1	37,0	15,6	6,1	0,9
A mechanism should be established to oversee the claims of those applying to benefit from the Regulation.	421	4,20	0,858	n 177	174	52	13	5
				% 42,0	41,3	12,3	3,0	1,1
A workshop should be organized to discuss the issues related to the Regulation by the participation of faculty members who benefit or do not benefit from AIA from each university, each faculty, each department, and each title.	421	4,09	1,011	n 171	166	48	22	4
				% 40,6	39,4	11,4	5,2	3,3

24,228% of the participants stated that they completely agreed with the finding "I think that the "Impact" factor should be taken into account when evaluating publications". Those who agreed were 32.542%, those who partially agreed were 27.078%, and those who disagreed were 15.152%. This finding was moderately supported by participants (\bar{x} = 3.60). In this context, it has been found that the faculty members were in favor of preventing weak publications and therefore they were concerned about the quality of the publications that might be taken into the scope of the Regulation.

Participants strongly supported the finding that the points for the studies at the international level should be increased (\bar{x} = 3,88); and in this respect, 33.017% of the participants stated that they completely agreed. Those who agreed were 35.392% and those who partially agreed were 21.140%. 7.838% of the

participants stated that they disagreed, and 2.613% stated that they completely disagreed. The opinions of the faculty members who mentioned difficulties in conducting an international study in the qualitative stage were found to be generalizable in the quantitative stage, and as a result of the analyses, it was found that the scores obtained from international studies were deemed low by faculty members.

The qualitative finding that the points awarded to the projects should be increased also found moderate support among the participants ($\bar{x}=3.45$). The proportions of the participants who stated that they completely agreed or agreed were 21.853% and 30.404%, respectively, while 24.941% said that they partially agreed. 16.152% of the participants indicated that they disagreed and 6.651% stated that they completely disagreed.

Inferential Statistics

It has been found that there is a significant difference between the titles of the participants and benefiting from the incentives under the Regulation. As the academic titles of the participants rise, the rate of benefiting from the Regulation also increases proportionately. Parallel to this situation, as a result of the analysis of variance, a significant difference was observed between research assistants and assistant professors, associate professors and professors and between assistant professors and research assistants, associate professors and professors. There is no significant difference between associate professors and professors.

Table 9. Difference between the titles and the rate of benefiting from the regulation

Title	<i>n</i>	<i>M</i>	<i>SD</i>	<i>SH</i>	<i>F</i>	<i>p</i>
Res.Assist	132	0.33	0.473	0.041		
Assist. Prof.	153	0.47	0.500	0.040		
Assoc. Prof.	70	0.68	0.467	0.055	14.720	0.009
Professor	66	0.74	0.440	0.054		
Total	421	0.50	0.500	0.024		

Significantly different titles: 1-2($P=0.016$), 1-3($P=0.000$); 1-4($P=0.000$), 2-3($P=0.002$); 2-4($P=0.000$)

There is no significant difference between gender variable and the finding "*there will be unethical or erroneous applications in order to benefit from the incentive since scientific works to be encouraged are not clearly defined in the Regulation*". However, a significant difference was found between the title and the same finding. This difference exists between professors and research assistants and between professors and assistant professors. Research assistants and assistant professors are more likely than professors to suggest a possibility of unethical or erroneous applications. The difference is presented in the table below.

Table 10. Difference between titles and findings about unethical or erroneous applications

Title	<i>n</i>	<i>M</i>	<i>SD</i>	<i>SE</i>	<i>F</i>	<i>p</i>
Res.Assist	132	3.96	1.029	0.089		
Assist.Prof.	153	4.02	0.865	0.069		
Assoc. Prof.	70	3.80	1.071	0.128	3.529	0.015
Professor	66	3.59	0.960	0.118		
Total	421	3.90	0.978	0.047		

Significantly different titles: 1-4($P=0.011$), 2-4($P=0.002$)

Discussion and Conclusion

After completing the quantitative phase, it was understood that all of the items in the data collection tool developed in light of the findings of the qualitative phase, except the two, were of generalizable quality. The participants disagreed with just the two findings that the faculty members would be unwilling to teach undergraduate courses as a result of encouraging scientific studies and that the teaching duties would be hampered.

When all the stages of the study were evaluated together, it was understood that the instructors have developed a generally positive attitude towards the Regulation, and that they thought that the Regulation would be positive for scientific production. There is a consensus that the incentives have a positive impact on job satisfaction and that the number of scientific publications is increasing (Al, 2008, 2009; Alparslan, 2014;

Ertekin, 2014; Iqbal & Mahmood, 2011; Lariviere, 2015; Quimbo & Sulabo, 2013). Research findings also support this. However, there are doubts about the quality of publications. Academician opinions are that the publication quality is ignored in the Regulation. When the scoring system of the Regulation is taken into account, it is also possible that academicians choose to have more publications by choosing an easy route instead of to have a quality publication. Al mentioned this danger in his studies (2008, 2009). In fact, it is clear that HEC is aware of this situation (HEC, 2007). Before The Regulation on the AIA was prepared, HEC pointed out to the quality problem and stated that the quality of publications should be emphasized instead of quantity. Unfortunately, the Regulation, which is enacted about nine years after the HEC document, does not contain provisions to ensure that quality publications are preferred. The academicians involved in the study are also in agreement on this issue. This actually points to another problem with the Regulation: the evaluation metrics are erroneous. Two articles which are published in a journal that is not indexed in any index are equivalent to an article published in a journal which is indexed in SSCI.

At the same time, this is equivalent to two articles published in a journal with no impact factor and an article published in a journal with high impact factor. This is not a fair evaluation, according to academics. Because publishing a publication in a high impact value journal requires that the publication is of high quality. However, it is now possible to publish articles of poor quality in many journals that do not have any impact factor. Given this situation, it is clear that Regulation has directed academicians to publish a large number of publications instead of publishing them in good quality. This is a big problem in terms of the quality of scientific publications of Turkey. This problem, which emerged as a result of the research, is compatible with the findings of Al (2008, 2009). Svein and Dag (2015) stated that increasing the number of publications has become a goal as a result of academic incentives in Norway. Other authors have also addressed this danger (Auranen & Nieminen, 2010; Bence & Oppenheim, 2005; Good, et al., 2015).

Today, Turkey is facing the same situation. As it is common among academics, the 30-point cap for an activity field limits the high-quality activities. Taking into account all of these, the evaluation metrics of the AIA are completely erroneous. Symposiums and congresses are other examples of these circumstances. After the Regulation, dozens of symposiums and congresses were held in Turkey. These symposiums and congresses are organized in international status. However, in most of these symposiums and congresses, only Turks participate. The five presentations in these organizations correspond to one SSCI publication. In addition, organizing too many symposiums and congresses are causing poor quality of the presentations. In some sessions, academicians are presenting their studies with no participants. The authors of this research think that a reasonable incentive system should be prepared as Jung (2014) pointed out. According to the faculty members and authors of this article, the Regulation responded to a problem of the academic world and filled a gap; however, it also led to new uncertainties and problems and unethical or erroneous applications.

According to the academics, the Regulation does not have clear statements, and there are some provisions that can be misinterpreted or interpreted in reverse. These uncertainties and the provisions that may lead to unethical orientations lead to unethical and faulty applications. For this reason, the faculty members brought up unethical as well as erroneous applications to discussion. It is noteworthy that many academicians prefer to use the expression "unethical application" rather than "erroneous application", even though it is just the first years of the Regulation. The fact that an evaluation system is considered unfair and unreliable by those to be evaluated is a clear indication that the system will not provide the desired benefit. For this reason, it is necessary to eliminate the uncertainties in the Regulation, to write down all provisions clearly, to make the definitions unambiguously, and to explain the rules well.

Instructors who point out that the evaluation committees often cannot examine whether the statements in the application are correct or not, have suggested the establishment of a mechanism to examine and evaluate statements directly. In the research process, it was understood that the Regulation caused an intense trust issue among the faculty members in terms of evaluation. Most of the faculty members recommend that an effective supervision mechanism be established against unethical or faulty applications. Another criticism of the reliability of the Regulation is that there is no consensus in the implementation of the evaluation procedures. The academics state that the universities, even faculties, which evaluate the same studies, might reach different conclusions through different interpretations of the rules. An activity that is evaluated within an activity field of a faculty can be considered out of the scope of that field by another faculty. In this context, it would not be wrong to say that the Regulation has left the control to evaluation committees. An evaluation that should be

transparent and fair, if left to human intervention, will cause speculation and unrest, even if done in good faith. In addition, an important factor affecting faculty members' job satisfaction is their satisfaction about administrative activities (Alparslan, 2014).

Considering the fact that colleagues that are assigned to the committees in charge of the evaluation of activities within the scope of the AIA are also the holders of administrative positions in their faculties, it is a likely problem that possible erroneous evaluations could negatively affect the scientific activities of the faculty members. It is possible that an instructor who was not found worthy of incentives under the Regulation may feel distrust to the system and the evaluators due to the presence of another instructor who is working on the same field and benefiting from incentives due to similar work.

In this case, the Regulation would have resulted in the opposite side of the intended benefit. If the evaluation system is wrong, as indicated in studies by Good, et al., (2015), the incentives will not be fair. For this reason, the activity fields should be defined with clear rules in the Regulation and human errors should be minimized by minimizing the human factor. In this way, uniformity can be established in practice and the distrust in the Regulation can be eliminated. The Evaluation Methodology system, which was put into practice in order to increase scientific production in the Czech Republic, has become an important issue for scientific studies in the country (Good, et al., 2015). If uniformity cannot be achieved in practice and human errors cannot be minimized, an environment of distrust such as that caused by the Evaluation Methodology system in the Czech Republic can be created in Turkish academic circles through the AIA.

Although it is a good intention to try to evaluate the quality of the activities of an academician within separate activity fields and to direct academicians, who neglect certain activity fields, to these fields, it has become an unfair practice in terms of its results. The work done by an academician in a single activity field but important at world-scale is deemed invaluable by the Regulation, and it is expected that his/her work spread to other activity fields. For example, it is expected that an academic conducting a project should convert this project into a publication, a presentation, and so forth. An academician who will engage in such activities will probably spend his precious time to adapting his work to activity fields that will not contribute to science creatively.

The work of the instructor who will not deal with these activities will be evaluated with only 30 points. This situation overlaps with Svein and Dag's (2014) findings that the publishing pressure will lead to different versions of the same work, resulting in more than one work produced without producing a new and different result. This practice should be terminated or revised and linked to the new criteria. Otherwise, if Nobel Prize-winner Prof. Dr. Aziz Sancar want to benefit from the AIA, he can only take 24 points of possible 100 points. In this way, the Regulation now limits the Nobel Prize, one of the most precious awards in the world for a scientist, to an incentive of 30 points, while it can appreciate a work, which cannot measure against such a prize but spread across various activity fields, with an incentive of up to 100 points. It is understood that it creates intense discomfort in the academic circles. This is consistent with AI's findings (2008, 2009). Measuring productivity by the number of publications is a flawed approach (AI, 2008; AI, 2009).

Another problem about the evaluation and the proposal presented as a result is about the fact that the evaluation system assumes that all scientific areas have the same principles and working methods and that the system tries to encourage academicians based on this assumption. The academics stated that the activities carried out in different scientific areas have different dimensions and processes, even if they have the same names for the activity fields, and therefore it is not possible to evaluate them in the same context. The participants, who exemplify this situation, point out that the publication processes of peer-reviewed papers in internationally recognized journals in health sciences and in social sciences are different processes. It is a flawed practice to treat with the same scoring method the publications and the citations from two different scientific areas, which are relatively easier and harder to publish or to get citations. In response to this situation, the academics have proposed to make the Regulation differentiated according to the scientific areas and to make the evaluation according to the scientific areas.

Due to the fact that the higher education system of Turkey is lecture-oriented, faculty members who shoulder teaching workload are unable to carry out scientific studies (AI, 2009). According to Iqbal and Mahmood (2011), it is also necessary to reduce the teaching workload in order to increase scientific productivity. That the instructors allocating large chunk of their time to teaching duties and thus minimizing

their research activities are excluded from the incentive is considered an injustice by the faculty members, who proposed adding the courses taught by the instructors as a new activity field in the Regulation. However, this proposal is aimed at decreasing the losses of the instructors who suffered injustice rather than increasing scientific production. A valuable goal of science is to produce solutions to social problems. It is an important goal of universities to produce science as well as educating students. When considering these two situations, new system designs should be considered that will not neglect both scientific studies and teaching duties, and new solutions should be produced, including employing more qualified personnel if necessary.

Academics think that the source of these errors is their exclusion from the preparation process. While the Regulation was being prepared, the HEC stated that they asked for their views by writing to the universities. However, this is considered nothing more than formalism by the academics, who stated that a workshop should be convened so that scientific studies can be encouraged in an effective way. Considering the fact that the opinions of the faculty members who were consulted focused more on the axis of problems and suggestions, it is necessary to organize a new workshop with the participation of academics of diverse titles, departments, faculties, and universities to have a Regulation that is able to respond to the needs by inclusion of the opinions of faculty members who are stakeholders in this issue.

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