

**Factors Impacting Research Productivity at Higher Educational Institutions in  
Kazakhstan**

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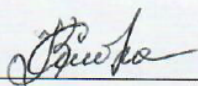
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**Factors Impacting Research Productivity at Higher Educational Institutions in  
Kazakhstan**

**Abstract**

In some universities low level faculty research productivity has become a critical issue that negatively affects their obtention of high results in university rankings, which in turn, is instrumental in improving the economic growth of the country. In this regard, one of the prioritized goals set by Kazakhstan is to increase the quality and frequency of faculty research productivity to better interact and contribute to the globalized knowledge-based economy. Moreover, Kazakhstani policy makers and leaders in education are taking measures to tackle the current problem related to low level faculty research productivity. Despite measures taken to improve research productivity, publication rates remain low. This is a function of various factors that may affect the interest and motivation of faculty to pursue research. The issue that this research project addresses is that not all faculty members are involved in research, and those who only conduct research unwillingly or under the professional pressure to do so.

The purpose of this study is to explore the factors that impact faculty research productivity and define the motivational influences that encourage faculty to conduct research. This study employed an in-depth interview based qualitative approach. To gather the data, maximal variation sampling within a purposeful sampling format was used, and fifteen participants were selected from within two groups: junior faculty and senior faculty who were examined to determine the salient characteristics and traits they possessed, and which affected their motivation to conduct research. The results of this study have provided information on the factors that impact research productivity and the kinds of motivational influences that stimulate faculty to pursue research. This study provides insight on the measures that could be

taken by policy makers and university administration to prevent the negative factors and support the positive ones that motivate faculty to conduct research.



## Қазақстандағы Жоғары Оқу Орындарының Ғылыми-Зерттеу Жұмыстарының Өнімділігіне Әсер Ететін Факторлар

### Аңдатпа

Кейбір жоғарғы оқу орындары оқытушы-профессорлар құрамының (ОПҚ) ғылыми-зерттеу жұмыстары өнімділігінің төмендігі маңызды мәселе болып табылады, бұл олардың университетінің рейтингінде жоғары нәтижеге қол жеткізуге кері әсерін тигізеді, бұл өз кезегінде елдің экономикасын жақсартуға ықпал етеді. Осыған байланысты, Қазақстанның алға қойған басты мақсаттарының бірі - білімге негізделген жахандық экономикаға үлес қосу және өзара әрекеттесу үшін ОПҚ зерттеу жұмыстары өнімділігінің саны мен сапасын арттыру. Сонымен қатар, білім саласында Қазақстандық саяси шешім қабылдаушылар мен басшылар ОПҚ зерттеу жұмыстары өнімділігінің төмен деңгейіне байланысты мәселені шешуге шаралар қабылдап жатыр. Зерттеу өнімділігін жақсартудағы қабылданған шешімдерге қарамастан, басып шығару рейтингтары төменгі деңгейде. Сондықтанда, зерттеуді жасауда ОПҚ-ның қызығушылығы мен мотивациясына көптеген факторлар әсер етеді. Бұл зерттеу жобасында талқыланатын мәселе – ОПҚ барлық мүшелері зерттеу жұмыстарымен айналыспайды, және де зерттеуге қатысқандар зерттеу жұмысымен қалаусыз немесе қысым көрсетілген кезде айналысады.

Бұл жұмыстың мақсаты – ОПҚ зерттеу жұмыстары өнімділігіне әсер ететін факторларды зерттеу және ОПҚ зерттеумен айналысуға қызықтыратын мотивациялық әсерлерді анықтау. Бұл зерттеуде сапалық бағытқа негізделген толығырақ сұхбат қолданылады. Ақпарат жинау үшін мақсатты жинауға арналған максимальды дифференциалды таңдау қолданылған, екі топтан он бес қатысушы таңдалды: зерттеу жұмыстарымен айналысуға ынталындыратын мінез-құлқын ескеріп, ОПҚ жас және аға

буыны тандалды. Бұл жұмыстың қорытындысы зерттеу жұмыстарының өнімділігіне әсер ететін факторлар, зерттеумен айналысу үшін қызықтыратын мотивациялық факторлар анықтады. Бұл зерттеу теріс факторларды болдырмайтын қажетті шаралар және де зерттеумен айналысу үшін ОПҚ қызықтыратын оң факторларды саяси шешім қабылдаушылар мен университет әкімшіліктеріне ұсынады.

**Факторы Влияющие на Продуктивность Научно-Исследовательских Работ  
Высших Учебных Заведений Казахстана**

**Аннотация**

В некоторых университетах проблема низкого уровня исследовательской продуктивности профессорско-преподавательского состава (ППС) признана критически важной для достижения высоких результатов в рейтингах университетов и для улучшения экономического роста страны. В этой связи, одной из приоритетных целей Казахстана является увеличение количества и качества исследовательской продуктивности ППС для внесения вклада в глобальную мировую экономику, основанной на знании. Кроме того, лица, определяющие политический курс или лидеры в сфере образования пытаются принимать меры для решения текущей проблемы с низким уровнем исследовательской продуктивности ППС. Несмотря на принимаемые меры для повышения исследовательской продуктивности, рейтинг публикации остается на низком уровне. Поэтому, данная проблема с различными факторами, влияет на интерес и мотивацию ППС для занятия исследовательской работой. Проблема, обсуждаемая в исследовательской работе, заключается в том, что не все члены ППС задействованы в исследовании, и те, которые непосредственно участвуют в исследовании, занимаются с неохотой или под давлением.

Целью данной работы является изучение факторов, влияющих на исследовательскую продуктивность ППС и определение мотивационных факторов, стимулирующих ППС для проведения исследовательской работы. В данной работе использовано подробное интервью на основе качественного подхода. Для сбора данных использован максимальный дифференциальный отбор для целевого отбора, отобраны пятнадцать участников из двух групп: младший и старший состав ППС, которые были

отобраны с учетом их характеристик, влияющих на мотивацию для проведения исследовательской работы. Результаты данной работы выявили информацию о факторах, влияющих на исследовательскую продуктивность, мотивационные факторы которые стимулируют ППС для проведения исследовательской работы. Данная работа представляет анализ о мерах, которые могут быть приняты политиками и администрацией университета для предотвращения негативных факторов и для оказания поддержки позитивных факторов, которые мотивируют ППС проводить исследования.

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## **Chapter I: Introduction**

### **Introduction**

In recent years, research productivity has become one of the major determinants of the knowledge level and prestige of higher education institutions (HEI), and higher education attempts to advance effective knowledge through research. Thus, along with their teaching and service components, faculty members are increasingly required to demonstrate higher performance in the production of new knowledge through research and development. Research productivity is becoming a key determinant of a faculty member's career success, so by publishing more scholarly articles in highly ranked, impact journals, faculty members should generally achieve individual advancement and enhance their content area reputation, as well as promote their institution's prestige (Dundar & Lewis, 1998). Many policy makers, researchers, and faculty members are therefore interested in a better understanding what stands behind research productivity and in how the productivity can be increased.

Nowadays Kazakhstani universities are considered to produce new knowledge through research, and faculty are supposed not only teach students but also conduct research. Taking the importance of research productivity into consideration, Kazakhstani universities are trying to increase their research capacity, and many faculty members are engaged in research activities. However, the current level of research productivity does not satisfy growing expectations (NAS RK, 2015). Moreover, some faculty members are more productive while others remain less active in conducting research. The existence of low quality publications emphasizes the necessity of identifying factors impacting faculty research productivity at Kazakhstani higher educational institutions.

A number of studies have been conducted by scholars to explore the factors impacting faculty research productivity. Most of these studies analyze faculty research productivity

issues through a Western context. However, only a few studies by local scholars who have analyzed the current Kazakhstani research situation are extant, whereas local research in medicine and STEM sectors is regularly being conducted (National Report on Science for 2018).

This study aims to explore the factors impacting faculty research productivity which might prevent them from continuing and promoting their research and motivational influences during research activities. In order to reach the aim, an interview-based, qualitative research design was applied which will cover the members of several universities who experience different working conditions and academic results.

This chapter gives a basic overview of the study, reports background information, and states the research problem, the purpose of the study, and the research questions. Furthermore, the significance of the problem is framed with evidence. The chapter concludes with an overview of the thesis outline. The next section details the historical background of research productivity in Kazakhstan and reveals the specific factors determining the current issue of low faculty research productivity.

### **Background of the problem**

After gaining independence from the Soviet Union in 1991, the Republic of Kazakhstan started independently developing within the frameworks of a market-based economy. Since that period of establishing and sustaining competition, the Government of Kazakhstan initially strove to thrive and then to join the fifty most developed countries. To realize this ambitious goal, the Republic of Kazakhstan commenced investing in research, innovation, and development.

The Organization for Economic Cooperation and Development (OECD) (1996) indicates that public research laboratories and HEIs occupy a key role in a knowledge-based

economy, contributing to the development of a country. In response to such findings, the government of Kazakhstan has been trying to implement initiatives to promote research productivity at HEIs. Moreover, HEIs, as well as their faculty members, have also been attempting to increase research productivity.

The first set of measures taken by the government refers to boosting the process of *international collaboration and mobility of faculty* as internationalization is viewed as being important for research performance. International collaboration has demonstrated positive influences on research productivity, increasing the number of published articles and the total number of publications (Smeby & Try, 2005). As a result, this indicator is mentioned as one of the main characteristics of research activities in Kazakhstan (National Report on Science for 2017).

To increase the internationalization process, the government has made efforts to attract foreign scholars and encouraged Kazakhstani faculty to adopt best practices in research and methods in their disciplines. As a result, by the end of 2016, 277 foreign scholars have worked in research fields in national, state, and some private Kazakhstani higher education institutions. In particular, 240 of them are from the Commonwealth of Independent States, whereas the other 37 academics are from abroad (National Report on Science for 2017) who have worked as international faculty in local higher educational institutions except Nazarbayev University.

Furthermore, international collaboration is an effective way to develop and distribute scientific knowledge and motivate research productivity. Approximately, half of all Kazakhstani scientific work (46,8%) is published in international co-authorship, indicating the integration of Kazakhstan's capability of conducting research and showing the dependence of Kazakhstan on foreign scientific ideas, expertise, laboratories, and other facilities (National

Report on Science for 2017). The results and outcomes of such investments are in need of further investigation.

The next measure taken by the government is providing *training and retraining programs* for faculty members. The government is affording the training of scientific and scientific-pedagogical workers through Master's and Doctorial programs, where the graduate programs are designed by international standards. Hence during the 2016-2017 academic year, 105 organizations trained cadres of highly qualified candidates with a Master's of Science while 63 organizations prepared Doctors of Science candidates; 44,4% of the cadres completed their Master's programs at the expense of the state according to educational demand (National Report on Science for 2017). Apart from graduate training, HEIs provided retraining and personnel development courses for their employees and faculty members. Thus, 14,600 faculty members and administrative staff took part in retraining courses via employer funds (National Report on Science for 2017, p. 56).

*Shared-use laboratories* were also established by the government as another means to tackle the issue of research productivity. The equipment and facilities in these labs are available for use by faculty members, specialists, and students who are engaged in research. Since gaining independence, Kazakhstani facilities and laboratory equipment need to be renovated to current international standards. Consequently, The Model Provision on Shared-Use Laboratories was approved by the Ministry of Education and Science (MES) to provide local and foreign scholars access to conduct scientific research despite which agency or HEI they work in. For example, through the support of the Ministry of Health of the Republic of Kazakhstan, a scientific laboratory, the National Center for Collective Use, was created in 2012 at the Kazakh National Medical University named after Asfendiyarov ([kaznmu.kz](http://kaznmu.kz), 2018).

Under the implementation of the State Program for Development of Infrastructure ‘Nurly Zhol’ for 2015-2019, new laboratories were established within HEIs: four laboratories were established at the Eurasian National University aiming to integrate research, industry, and education in order to develop and implement innovative projects. Platforms for six research laboratories were also created at Seifullin Kazakh Agro Technical University so as to improve the facilities to conduct research (KazATU, n.d.).

*International collaboration at international laboratories* is another measure where researchers share best practices with colleagues. By agreement, top Kazakhstani universities conduct research at national laboratories in foreign countries. Kazakhstani HEIs plan to collaborate with countries like Germany, Russia, Latvia, the Czech Republic and Poland. The National Overview on Research in Kazakhstan demonstrated the range of scientific fields wherein Kazakhstani Universities work in collaboration with different international laboratories (Natsionalnyi doklad, n.d).

The next procedure taken by the government is an *English language policy*. The government strongly promotes the English language as the main language of scientific communication. This is viewed as being important because almost all non-zero impact factor scientific journals are written in English. Moreover, the first President of Kazakhstan pointed out that the English language is the language of new technology, innovation and the global economy. He also stated that 90% of the information is created in English (Nazarbayev, 2017). Measures taken to promote English are shifting the Kazakhstani educational system from bilingual education to a trilingual education policy, and they also provide retraining courses for faculty to improve their English language proficiency. These efforts should also positively impact research fields.



Further, *a new reward system* was implemented as an aid to increasing research capacity. The government and HEI administrations created a reward system which takes faculty interests and motivation into consideration. Certain faculty members have been rewarded for publications in highly ranked journals (Association of Universities of RK, 2017). These faculty members try to conduct research frequently without disregarding teaching activities; as a result, faculty members get extra points not only for teaching but for pursuing research, too. This has significantly enhanced the number and quality of Kazakhstani research publications in foreign scientific journals (Natsionalnyi doklad, n.d.).

Another approach used by the government is provision of support for the *commercialization of research projects*. The State Program of Education and Science for 2016-2019, which provides conditions to commercialize research, emphasizes the active participation of HEIs in the fostering of scientific projects through agreements between universities and business organizations (On the Approval of State Program, 2016).

Less commercialization of scientific projects was identified by scholars as one of the main problems of Kazakhstani research development. To tackle this issue, the aforementioned law was created wherein research grant applicants should indicate companies, organizations, institutions, or universities that would co-finance applicants' research projects. Furthermore, the government of Kazakhstan has created the critical elements of a national innovation system, namely the National Science Fund, the National Innovation Fund, the National Center for Engineering and Technology Transfer, the National Center for Scientific and Technology Information, and the National Center for Science and Technological Expertise (NCST) (Kuzhabekova & Ruby, 2018). The main objectives of the NCST are to ensure fairness and transparency in the selection of research projects for government grants and to provide Kazakhstan's academic and scientific communities with data that assist them in planning and

implementing research projects effectively (NCST, n.d.). Moreover, these centers are also designed to facilitate the implementation of scientific research and experimental development projects and to foster the commercialization of scientific projects and technical activities required by the economic sector of Kazakhstan (Fond Nauki, n.d.).

Following this presidential initiative, *Nazarbayev University (NU)* was established in 2010 as an English-speaking, world-class research university, based on international standards, aiming to be a premier education hub in Kazakhstan and Central Eurasia (Kerimkulova, 2011). According to Nazarbayev University's strategy for 2013-2020, NU will contribute to the development of research capacity and the knowledge needed to drive Kazakhstan's growth and diversification. NU faculty members and researchers are highly involved in research responding to the country's key research priorities which demonstrate competitiveness at the highest international levels (Nazarbayev University Strategy for 2013-2020, 2013).

In summation, Kazakhstan as an independent country has been taking measures to tackle the problem of low research productivity. The internationalization of its faculty, training and retraining programs, the establishing of shared-use laboratories and research universities, the implementation of the English language in its education system, and the utilization of reward systems to motivate faculty members are the measures taken by the government and HEIs to advance Kazakhstani research capacity and increase research productivity. Nevertheless, the situation with faculty research productivity remains below the norm for industrialized democracies (Kuzhabekova & Ruby, 2018).

### **Statement of the Problem**

Kazakhstan has been facing major concerns regarding the low level of faculty research productivity as the evidence listed in the QS World University ranking system leaves much to be desired with Kazakhstani universities ranking in 236<sup>th</sup> place among world universities. (The

World University Rankings, 2018). Universities in the world are ranked by several criteria including research performance wherein the number of scholarly articles and their impact are measured. To meet the local and global requirements of ranking systems for universities, Kazakhstani universities are attempting to increase publication numbers in high impact factor journals.

Despite the fact that the government has been providing support and taking measures to increase research productivity, faculty research performance remains unimpressive compared to other top world universities, and Higher Education Institutions involved in research have demonstrated underwhelming results in the fields of research. According to a report provided by the Ministry of Education and Science (MES) in 2016, Kazakhstan remains in 85<sup>th</sup> position among 218 countries in the number of its publications. The MES indicates that for the years 2012-2016 approximately 200 local establishments were involved in research. Most publications belong to HEIs; their share comprising 40% of all Kazakhstani publications (National Report for 2017).

The amount of publications and citations are considered a measurement of research productivity. Thomson Reuters indicates the Category Normalized Citation Impact (CNCI) as “the actual count of citing items by the expected citation rate for documents with the same document type, year of publication and subject area” (Thomson Reuters, n.d.). The Kazakhstani CNCI comprises 0.74 in 2012-2016, and 0.84 in 2016 (MES, 2017). These numerical values of the average number of citations testify that Kazakhstani HEI publications do not reach the world average, which is greater than one (MES, 2017). Kazakhstan remains in 108<sup>th</sup> position in the number of its publication citations, which shows the low level of faculty research productivity (MES, 2016). Another MES statistical analysis conducted in the 2016 demonstrates the publications per year in Kazakhstan compared with countries in the Eurasian

Economic Union: Kazakhstan ranks in 4<sup>th</sup> position with an average publication rate of five (5) articles per year per 100,000 population between 2011-2015 (MES, 2016), further indicating a dearth of research.

In keeping with the abovementioned, a survey of 700 university faculty members conducted by the Business Information and Marketing Analytical Research Center (BISAM, 2016) indicates that Kazakhstani faculty members published only 19% of the articles outside of the Commonwealth of Independent States; 12 % of its faculty members published in international journals within the last five years (BISAM as cited in Kuzhabekova & Ruby, 2018).

Several studies demonstrate that to increase research productivity at HEIs it is important to understand the reasons impeding faculty from conducting research. However, there is a lack of Kazakhstani research probing the reasons behind faculty members' low engagement in research. A greater understanding of the factors that influence faculty interest in conducting research may elucidate the reasons for the low level of faculty research productivity.

### **Purpose of the study**

As the Republic of Kazakhstan aims to compete at the highest international levels best suited to Kazakhstan and the world, it is important to increase faculty research productivity, thereby contributing to university and national research productivity impacting the country's economic growth. To meet this need, this study intends to explore the factors determining faculty research productivity, namely the personal, institutional, and leadership characteristics, as well as the motivational influences, on conducting research by faculty.

**Research Questions**

This study aims to answer the following research questions:

RQ 1: What factors affect the ability of faculty to conduct research? The purpose of this question is to find out the factors limiting or enhancing faculty research productivity.

RQ 2: What motivates faculty to pursue research? The purpose of this question is to analyze the goals of and reasons for conducting research.

**Methodological framework**

A qualitative research design was employed to define the factors and motivational influences of faculty research productivity. As Creswell (2014) described, “for exploring and understanding the meaning individuals or groups ascribe to a social or human problem” (p. 14), a qualitative approach is important to investigate and establish “a detailed understanding of a central phenomenon” (Creswell, 2014, p. 30). The central phenomena of this study are characterized as those factors affecting and motivating faculty research productivity.

**Definition of key terms**

*Research productivity*--the number of publications per researcher, distinguishing it from impact (Abramo, G., & Dangelo, C.A., 2014)

*Research impact*--“the demonstrable contribution that research makes to the economy, society, environment and culture beyond the contribution to academic research” (Australian Research Council, 2017).

**Significance of the study**

The results of the present study will have implications at various levels. Firstly, the research will be beneficial for the participants of the study. Faculty members responding to the interview questions about factors impacting research productivity should better understand

their attitudes toward research and try to eliminate or improve any impeding individual factors.

Secondly, based on the outcomes of this study, policymakers and governmental officials who deal with research and HEIs administration should increase their understanding of the issue and provide better opportunities and conditions for faculty to increase the level of research productivity. Consequently, faculty will indirectly benefit by possibly having their work conditions improved.

Thirdly, the study will provide an opportunity for faculty to reflect on their motivations to do research. If faculty members are highly motivated to do research, this will affect the growth of their professional competence; in case their motivation is extrinsic, this study will better enable them to voice their concerns and recommendations for improvement to university administration.

Finally, due to the lack of in-depth studies exploring the factors impacting research productivity and motivational influences in a Kazakhstani context, this study will fill the existing gap and other researchers' interest in conducting further analysis on this issue will be spurred.

### **Organization of the Study**

This study consists of six chapters: Chapter 1: "The Introduction" covers the background of the study and states the research problem and the purpose of the study followed by the research questions and the significance of the study.

Chapter 2: "The Literature Review" is dedicated to an overview of the literature related to the problem and the research questions. The chapter begins with an introduction and general information about the structure of the paper and the organization of its topics. This chapter provides the theoretical framework and is divided into several subtopics.

Chapter 3: “The Methodology” discusses the design of the study, pointing out its methodological approach and sampling procedure in detail. Data collection and data analysis are elaborated upon.

Chapter 4: “The Findings” presents the results of this study and the interviews.

Chapter 5: “The Discussion” provides a synopsis of the results related to the research questions and literature review.

Chapter 6: “Conclusions and recommendations” presents concluding statements and suggestions for policymakers and affiliated entities to improve and develop research productivity.

## Chapter II: Literature Review

### Introduction

The previous chapter provided background information of the problem under study, as well as the significance to the field of research productivity at Kazakhstan HEIs and future research on the factors impacting faculty research productivity. The purpose of the study is to explore factors which determine research productivity, as well as the motivation of faculty to conduct research. The following research questions were devised to achieve the objectives of the study:

- What factors affect the ability of faculty to conduct research?
- What motivates faculty to pursue research?

This chapter will review the literature related to the factors impacting research productivity and the motivational influences that stimulate faculty to conduct research. This chapter explains the key issues and concepts and reviews previous studies concerning the topic under research.

The objective of this chapter is to analyze the literature underpinning prior research in order to identify any gaps and establish a theoretical framework for this study. To answer the first research question the *overarching and literature-base framework*, provided by Bland and her colleagues, was used to determine how to increase research productivity and to understand the factors impact it. In particular, three categories will be discussed in this chapter: individual characteristics, institutional characteristics, and leadership characteristics. The analysis pertinent to the second research question was framed by the *Expectancy Value Theory* to determine the motivational influences on faculty research productivity.



**Theoretical framework**

Since 1950 many researchers have been analyzing faculty research productivity. Most analyses were implemented in research-based universities; only a few studies have been conducted in non-research oriented institutions.

This study explores the effects of motivation, personal characteristics, institutional characteristics and administrative support on research productivity. Finding out which factors influence faculty research productivity will prompt policymakers and the leaders in Kazakhstani universities to make edifying decisions to improve faculty research productivity. The following motivational theories support a determination of core issues.

**The framework based on Bland et al. model**

The book *The Research Productive Department: Strategies from Departments that Excel* by Bland C. J. et al (2005) posits a literature-base framework to determine how to increase research productivity. Although their theory focuses on departmental strategies, it is still applicable when researching their individual faculty member research productivity. Bland and her colleagues' framework confirms that research productivity is based on three foundations: (a) an individual's characteristics, (b) an institution's characteristics, (c) an institution's leadership characteristics (Bland C. J. et al, 2005). This means that institutional factors affect individual research productivity. The characteristics fall into three general spheres: (a) the faculty member, (b) the department, college or university, (c) the department head, dean and so on. The researchers indicate that these three domains support productivity and act together to maintain a framework construction or structure for research activity (Bland C. J. et al, 2005). According to this theory, faculty research productivity is high when faculty members have specific individual qualities such as faculty interest in research, high motivation to conduct research, engagement in research projects, and so forth (Bland et al., 2006).

Moreover, institutional and leadership characteristics also play an essential role in faculty research productivity (Bland et al., 2006) when these two characteristics have positive impact on individual features. Institutional characteristics can be described as financial support of research activities, provision of properly allocated time for research, organization of research network and collaboration, etcetera (Bland et al., 2006). For leadership characteristics following features can be included: “research oriented leader”, “highly regarded scholar,” leader who sets clear and visible goals and mission to all members of group, and so on (Bland et al., 2006).

In summation, Bland and her colleagues try to determine two key features in their text on research productivity (Bland et al, 2005). Firstly, knowledge, skills, motivation and support provided by the home institution are the main factors influencing an individual’s success in research productivity. Secondly, research productivity is more prolific if all three characteristics (individual, environmental and leadership) are successfully integrated as an interdependent whole. This theory underscores the research question of this study: ‘What factors affect the ability of faculty to conduct research?’ The visual below demonstrates a model of faculty research productivity by Bland and her colleagues’

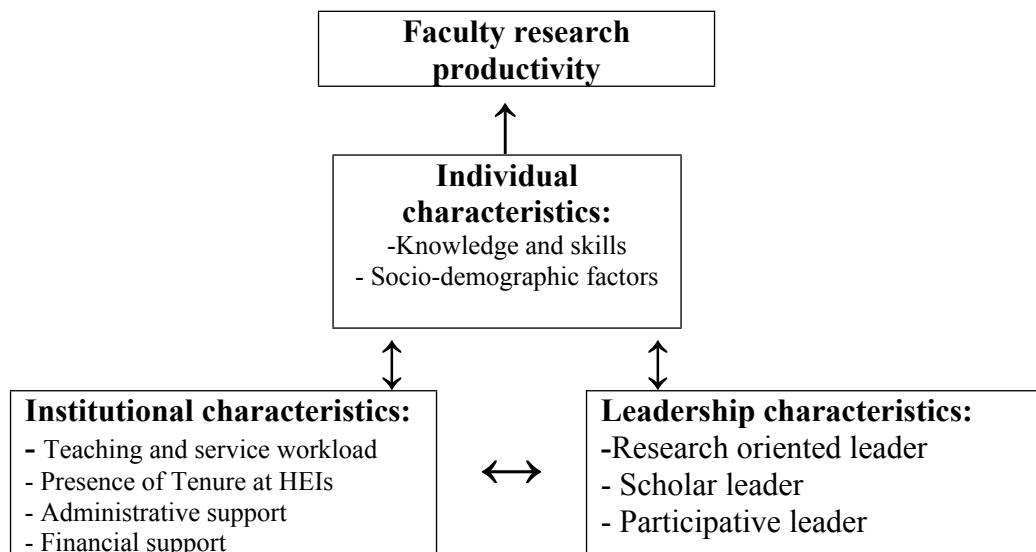




Figure 1. The model of faculty research productivity

The next sections of the literature review will be focused on the factors which can increase or decrease faculty interest to pursue research. However, a scarcity of studies on faculty research productivity in Kazakhstan is operant; this study employs international research studies relevant to this topic. Thus, it will be a necessary to compare the findings from different contexts with the results of this study.

### **Factors related to personal characteristics**

Many studies examining the personal characteristics of scholars attempt to explain different predictors that influence research productivity. Individual and socio-demographic characteristics--namely gender, age, rank, marital status, and family-related variables among others--are stated as strong correlates to faculty research productivity. The following subsections will discuss each of these characteristics that are found as predictors of faculty research productivity.

#### **Knowledge and skills**

Faculty member knowledge and skills were identified by researchers as one of the critical factors to increasing research productivity. Three main categories of knowledge are outlined to understand this influence: declarative, procedural and metacognitive.

*Declarative or content knowledge* is comprised of factual and conceptual knowledge (Alexander, Schallert, & Hare, 1991). Several researchers have posited that the amount of factual knowledge possessed by faculty could impact their research productivity. Azad and Seyyed (2007) identified factual knowledge as the knowledge that faculty members strengthen

by teaching subjects in order to be able to consolidate in that area. According to Jung (2012), factual knowledge is stated as the knowledge about institutional and departmental objectives for research performance. For Hales and colleagues (2005), this knowledge is explained as the awareness of faculty about types of research grants and the access that faculty has to them (Hales, Shahrokh, & Servis, 2005). Faculty research knowledge that is used to develop research grant proposals and conduct research is accepted as conceptual knowledge and such knowledge is obtained through faculty training and experience in research activities (Azad & Seyyed, 2007). Jung (2012) explains that conceptual knowledge is the knowledge of the various disciplines, both pure and applied, which affects research preference and collaborations, consequently impacting research approaches and research productivity.

*Procedural knowledge* is the knowledge that is necessary to attract research grants, to convert research ideas into actual research, and to publish research findings (Fung J., 2017). In their study, Azad & Seyyed (2007) asked faculty to assess themselves and indicate 13 individual competencies as the factors influencing faculty research productivity. The result of the study shows that procedural knowledge of how to apply for research grants and how to translate research ideas into publications was listed above all competencies mentioned earlier (Azad & Seyyed, 2007). For Dundar and Lewis (1998), another type of procedural knowledge is the techniques and methods of junior faculty research publication.

*Metacognitive knowledge*, which studies the relationship between motivation and someone's cognition (Pintrich, 2002), impacts faculty research productivity specifically by the knowledge of how to manage the workload arising from teaching, research, and service (Fung J., 2017). Levitan and Ray (1992) in their study found that the ability to manage time effectively and cognitively was the most significant ingredient for faculty to be research

productive. This means faculty needs the knowledge and self-awareness to plan and prioritize their research activities (Azad & Seyyed, 2007).

### **Socio-demographic factors**

In the discussions of *gender difference* in academia, a controversial issue has been stated, that is, whether or not men are more productive than women. For instance, some argue that male scientists publish more than female scientists (Blackburn & Lawrence, 1995). From this perspective, more males in academia have been assigned to superior positions than female; moreover, males spend less time in teaching compared to female who are more involved in teaching than research activities (Leavey, 2006). Moreover, as females have more childcare duties and responsibilities, males show higher results in research performance than females. On the other hand, others posit that female scholars do not necessarily publish less than their gender counterpart (Teodorescu, 2000). Similarly, Bland and colleagues (2005) find that male faculty publish more than female faculty. This difference is eliminated when the density of female faculty in lower ranks is taken into account. Consequently, the result of their study demonstrates no difference in productivity due to gender when rank is controlled.

Numerous studies reveal that there is a strong correlation between *age* and experience in research activities, demonstrating both negative and positive relationship with faculty research productivity. Dundar and Lewis (1998) highlight a correlation between age and experience: productivity increases when age and experience increase, and then the relationship stabilizes. In his cross-national analysis of the correlates of faculty publication productivity in a 10-country sample, Teodorescu (2000) explores a strong predictive power with respect to publication productivity in the United States, whereas other countries do not show the same

result. Most studies indicate that age is not associated with faculty research productivity at all (Bland et al., 2005).

The relationship between *marital status* and parenthood and faculty research productivity has been investigated in many studies, mostly related to women's marital status. Women with children publish less than childless women (Perna, 2001) because of the difficulties female faculty meet in accomplishing responsibilities in both family and careers. Nevertheless, different viewpoints have been voiced among scholars as to the role of family-related factors in research productivity. Some authors hypothesize that women with children preserve competitive levels of research productivity because they try to do more with their limited time, indicating that having children does not interfere with women's research productivity.

Based on an analysis of the literature on personal characteristics, two main factors have been identified, namely knowledge and skills and socio-demographic factors. These factors will be taken into consideration to determine whether the above mentioned factors are predictors of faculty research productivity in a Kazakhstani context. The next section outlines the main findings from studies, investigating how institutional factors, such as teaching and service workload, academic rank, and administrative support, impact faculty research productivity.

### **Institutional factors**

This section attempts to identify institutional factors that influence faculty research productivity. Academics and institutions focus on publications in international journals for several reasons. However, the following subtopics are critical factors which limit teaching and service workload or provide research opportunities tenure and administrative support.

### **Teaching and service workload**

Three functions of universities, namely teaching, research, and service, are systematically interrelated. Workload is generally measured by the amount of time allocated to academic activity. While teaching and service are primary functions in most Kazakhstani HEI, Kazakhstani universities mostly encourage knowledge generation instead of research productivity. Milem, Berger, and Dey (2000) state the significance of allocating faculty time for the performance of their duties with consideration of three measures: teaching, research, and advising. The workloads of administration and teaching are acknowledged as factors impacting research productivity (Porter & Umbach, 2001). Faculty members at research universities have to devote most of their time to research activities because research and publishing activities tend to be more rewarded on the career ladder than teaching and service.

The major obstacle to conducting research is the heavy teaching load frequently experienced by academics (Wood, 1990). Hesli and Lee (2011) in their analysis observe opportunity cost variables which capture the time spent teaching or doing service and found that faculty with the lowest teaching loads publish 14.5 articles per year, while individuals with heavy teaching loads publish 4.9 articles per year. According to these results, heavy teaching loads negatively impact research production (Hesli & Lee, 2011).

Teodorescu (2000) also states that time spent teaching affects research productivity in an unfavorable way. The amount of time demanded for lectures and student contact is considered a limiting factor to some faculty's ability to conduct research (Teodorescu, 2000). Researchers Azad and Sayyed (2007) assert that faculty members would prefer devoting more time to research instead of to their administrative workloads. Also Kuzhabekova (2018) points out that a lack of time is a primary barrier in pursuing publishing in impact-factor journals.

Furthermore, according to Dundar and Lewis (1998), two perspectives on the relationship between graduate teaching load and research productivity have been found. On the one hand, faculty members who have graduate program workloads including teaching and advisement may have limited time to conduct research. This opinion was observed in the social science disciplines. On the other hand, graduate workload could be considered as positive due to the collaborations and joint research projects of faculty and graduate students. Another study by Blackburn et al. (1987) indicates that teaching in graduate programs leads to higher productivity than teaching undergraduates. These scholars provide evidence confirming that academics who teach graduate students published five or more articles over a two-year period which is six times more than those who teach undergraduates.

#### **Presence of Tenure at HEIs**

Research productivity is considered one of the main requirements for receiving tenure and promotion in most US and Canadian universities (McGill & Settle, 2012). In their study McGill and Settle (2012) explore tenure and promotion as predictors of research productivity. The results indicate that faculty appear to meet one of the requirements for tenure by producing five (5) publications when they were expected to publish only three articles per academic year. Another study by Chen et al. (2010) proves that tenure is ranked as the most valuable reward for research output from thirteen motivations examined in their analysis. Faculty members believe that research output will contribute highly to the attainment of tenure. Chen et al. (2006) also find that the number of journal articles published in the 24 months prior to the study is positively related to tenure status.

Many studies identify that *academic rank* has an impact on research performance as well. Faculty members while working climb the hierarchical structure to higher positions and



salaries by promotion. Analyzing the correlation between faculty rank and faculty research productivity, Tien and Blackburn (1996) observe that low research productivity is seen in the later career years. Bland et al (2005) explain that research productivity is a major criterion for promotion, so it is understandable that low research productivity is maintained among faculty of lower rank. Meanwhile, it is a fact that some assistant professors and lecturers have more publications within five years when compared to associate and full professors (Osadebe, 2014) since assistant professors and lecturers publish more in order to be promoted and tenured.

### **Administrative support**

*Administrative support* to faculty is explained as the allocation and flow of resources to support faculty research activity. To maintain the resource requirements of research-productive faculty members, administrators need to provide support in the form of funding, space, facilities, equipment, and supplies. Bland C. J. et al (2005) indicate that administrators and faculty who are highly involved in research and who apply resources appropriately are highly productive in paid research environments. Administrators and department heads can underpin and sustain professional faculty networks by giving them financial support, nominating them for research awards, and organizing faculty office and laboratory space to assist faculty research productivity (Bland C. J. et al, 2005).

Likewise, in a comprehensive literature review Creswell (1985) identifies major individual and institutional predictors of faculty research performance. He has determined that high research output universities usually implement well-designed strategies and development programs for their faculty in order to improve the competitiveness among faculty in terms of research productivity.

As institutions benefit from productive faculty, it is expedient to invest in resources to provide faculty the necessary tools that they need to be more effective in conducting research. This may include research development programs and training courses which provide the technology, tools, and methods of research which reflect our rapidly changing world (Hardre L.P., et al., 2011 ). Several studies have also focused on the effect of development programs and organizational factors as powerful, necessary features for enhancing research productivity (Dundar & Lewis, 1998).

Strategies that create collegial environments, financial incentives, research centers, support publications, and increased potential for academic promotions are of paramount importance in faculty research productivity. Therefore this part of the literature review will discuss the following two factors: financial support and facilities for research.

### **Financial support**

According to Cantwell & Mathies (2012), one strong predictor of research productivity is the *research funding* provided by a university, although Jenkins et al (1998) argue that financial support may negatively affect intrinsic motivation. In addition, Stack (2004) argues that institutional support for research is more significant than financial support, especially for women, whereas Hu & Gill (2000) find that young researchers are strongly motivated by financial support. Support can be given in various ways, such as funding, protected work-time, and other environmental factors allocated by department chairs and other academic leaders (Bland C. J. et al, 2005).

Financial support encourages faculty to engage in research, and policy makers should take into consideration the fact that to obtain advanced degrees in research, helpful conditions should be provided by institutions via proper funding and financial assistance. These

conditions can be seen in faculty development programs, the establishment of faculty research seminars, and the allocation of faculty travel funds to attend conferences to present research papers (Ana T.M. & Sulabo C.E., 2014). However, some researchers state that research funding by institutions is a primary condition (Bazeley P, 2010) to be met by institutional leaders interested in fostering research activities.

### **Facilities for research**

*Easy access to laboratories, libraries and technical support* provided to faculty increase faculty research performance (Cresswell, 1985). Further, Dunder & Levis (1998) indicate that important practices to improve faculty research performance are increasing expenditures on establishing strong research infrastructure in addition to increasing research funds and researcher pay.

Overall, it is evident that teaching and service workloads can play a significant role in faculty research productivity in that they are time consuming and thereby influence academics' ability to maintain their research performance. As seen from the aforementioned literature, administrative support is a major factor in enhancing faculty ability to be active in research.

### **Leadership factors**

Bland and colleagues (2005) have generated several leadership features that assist faculty research productivity. In their views, leaders are regarded as scholars because of their gained experience in research and the status they hold as full professors and candidates of science (research doctorate). In many universities, leaders assume their positions after having accumulated a huge number of publications; they are always engaged in research before becoming leaders and continue doing research after they become leaders. Additionally, Bland and colleagues (2005) indicate that leaders facilitate faculty as sponsors. In this case, sponsor-

leaders labor to assist faculty with financial support, and universities provide research grants or cover expenditures for research activities. Moreover, some critical and responsible leaders uphold the faculty mission and share institutional goals with all faculty members; they hold meetings with clear goals, set expectations for all members to contribute in decision-making, and vest members in project ownership and value faculty ideas. The following subsections describe leadership characteristics that may affect to increase faculty research productivity.

### **Research oriented leader**

One of the leadership factors can be aligned with leaders' characteristics such as being research oriented. Research oriented leaders possess "research orientation" (Bland et al., 2005) and "internalize the group's research-centered mission" (Bland et al., 2005). Based on Bland and colleagues' model of faculty research productivity, research oriented leaders always attempt to create research environment for faculty by making most of the focus on research mission; consequently, faculty show positive results in research. Furthermore, research oriented leaders constantly remember the main mission of the university—conducting research—and lead the group demanding scholarly publications and the reports of publication results. Having research oriented leaders at universities is a fighting chance to be competitive in research productivity among other universities, and faculty members would be involved in research activities in consequence of hard work that is under the control and organization of research oriented leader.

### **Scholar leader**

Most universities assign leaders who are considered as scholars (Bland et al., 2005). Several reasons exist for having leaders who have baggage of knowledge and experience in research field. The first reason is leaders' holding status of full professorship which is gained

after publishing huge number of scholarly articles and engagement in important projects that contributed to the tackling of problematic issues. The next reason of assigning a scholar as a leader of the university or department is a bundle of knowledge that a scholar gains while conducting research. These type of leaders continue engaging in research even after becoming leaders; moreover, faculty members will be stimulated having scholar leader who would probably force them to conduct research.

### **Participative leader**

According to Bland et al., (2005) assertive and participative leader frequently holds conferences or meetings with clear tasks and objectives. Leaders having clear objectives set specific targets on upcoming events; this can impact research activities, too. Participative leaders distribute high-quality information to the group (Bland et al., 2005). Such characteristic is important for faculty when they need available data concerning research grants and other issues related publication process. Moreover, a participative leader entrusts with power members of the projects and vests ownership of projects with faculty members demonstrating them trust and valuing their ideas (Bland et al., 2005) which probably motivates faculty and stirs up an interest in research.

### **Motivational theories: Expectancy-Value Theory and Vroom's Expectancy Theory of Motivation**

A number of theories exist on motivation, and this study will utilize the *Expectancy-Value Theory* of motivation. To understand the Expectancy-Value Theory, first, I will define the key concepts of 'expectancy' and 'value' in research productivity. Then, I will explain the expectancy and value aspects of the model with their classifications. Finally, I will clarify how the theory helps to answer the research questions.

Some faculty members may give preference to teaching or service activities rather than doing research because they have not acquired complete knowledge of the research process. Therefore, such faculty members do not expect to excel in research activities. As a result they may spend more time on teaching and other service-related activities. One reason for such a choice is that they are good at those aspects and expect to achieve better performance. Another group of faculty members may prosper in teaching and service as well; however, they may wish to be involved in research activities because they value the importance of doing research and want to share their knowledge. Thus, expectancy can effect faculty members' motivation and value may be more important to make a decision concerning career perspectives. Regardless, both expectancy and value are important motivational concepts powerfully affecting faculty motivation.

The authors define expectancy in their theory as expectancy for success because it demonstrates how faculty accept the key role of research in their academic careers (Eccles et al., 1983). Schunk, Meece, and Pintrich (2014) define four types of values and the effect of each value in doing research: a) *Intrinsic value* is described as faculty enjoyment and interest when conduct research. Faculty members having this value experience satisfaction and are genuinely engaged in doing research. b) *Attainment value* is explained as the importance of doing well on a task. It is important for faculty to do research; it is who the faculty wants to be. c) *Utility value* shows the usefulness of research for future faculty goals; they know that doing research is useful. d) *Cost* is discussed as faculty's sacrifice something valuable, such as time, financial investments, emotions and so on in order to pursue research.

*Expectancy for success* predicts achievement (e.g. research productivity), effort, persistence, and cognitive engagement. *Value* predicts actual choices to persist in order to succeed (pursuing a career in research) and achieve (Schunk, D.H., Meece, J.R., and Pintrich,

P.R., 2014). Eccles et al. (1983) developed *expectancy-value theory* identify gender differences in mathematic achievement among school children. The interaction of expectancy and value will help to define how expectancies and values influence faculty achievement choices, performance, and effort to conduct research across a broad range of faculty members and their functional area and age groups (Wigfield & Cambria, 2010; Wigfield & Eccles, 2000).

*Vroom's Expectancy Theory* (1964) indicates that any person attempts to take an action in some cases relying on expectations followed by results and the attractiveness of results. Vroom's theory includes three perceptions (valence, instrumentality, and expectancy) that influence an individual's motivation separately or all together. Valence functions as an individual's intention, goals, necessities, and values (Vroom, 1964). Instrumentality stands for individual's persuasion that first-degree outcomes initiate second-degree outcomes (Vroom, 1964). Otherwise speaking, if a person believes that his or her high performance is instrumental for other outcome which is going to be rewarded (e.g. pay raise, promotion), then that person will place a high valence on accomplishing tasks well. Vroom (1964) defines expectancy as "a momentary belief concerning the likelihood that a particular act will be followed by a particular outcome." Expectancy theory can be utilized to understand how faculty members make decisions whether to conduct research or not and to predict what affects faculty research productivity. Faculty members make decisions concerning publications based on the outcomes they value (valence). Next, to understand the degree of the outcome that faculty value is a key factor to predict the effort (instrumentality). Finally, university leaders can predict faculty performance by finding out whether faculty believe that they would attain the goal.

The main premise of these theories is to define faculty motivational predictors to do research. The theory with such motivational predictors as expectancy and value will help to answer the research question: ‘what motivates faculty to pursue research?’

### **Motives to pursue research**

Clark & Estes (2008) identify motivation as a critical factor to improve an individual’s performance. The researchers indicate that motivation is a key determinant of choice, persistence, and effort invested by an individual to accomplish the set task. Harris and Kaine (1994), who conducted research among faculty members in an Australian university to investigate the determinants of research productivity, conclude that the main force behind research performance is individual motivation rather than financial support.

In Storey et al. (2008) people are mostly influenced by extrinsic and intrinsic motivators in their study, intrinsic motivation is framed as the activating forces that are inherent in the respective activity, whereas extrinsic motivation refers to forces driven by rewards that are not inherent in the activity itself. The following subsections discuss extrinsic and intrinsic motivations.

### **Promotion**

Promotion is found to be a strong motivator in Backes-Gelner and Schlinghoff’s study of German and American economist academics (Backes-Gelner & Schlinghoff’s, 2004). In their study, Chen et al (2010) detail a strong link between research productivity and tenure and promotion. Tien (2000, 2008) provides two studies on promotion which affirm that promotion perspectives have a strong influence on research productivity, and both conclude that universities with younger researchers in their faculties value promotion. Another study by Fox



(1985) suggests that through the manipulation of the reward structure for promotion, universities can impact research productivity as well.

Based on the result of their study, however, Tien and Blackburn (1996) have found that low research productivity appears largely in the early years of promotion and then gradually increases when the faculty attains full professorships. This bolsters the idea that research productivity as a major criterion for promotion.

### **Reward**

A study by Chen, Gupta, and Hoshower (2006) explores the impact of different motivational factors on research productivity. Their findings show that economics researchers publish significantly more scientific articles when they are highly motivated by rewards both intrinsically and extrinsically, whereas an analysis provided by Horodnic and Zait (2015) demonstrates that research productivity is positively correlated with intrinsic motivation and negatively correlated with extrinsic motivation. They argue that negative correlations between extrinsic motivation and research productivity can be explained by extrinsically motivated academics who find better working conditions outside the university system to achieve their goals (Horodnic, I.A., & Zait A, 2015).

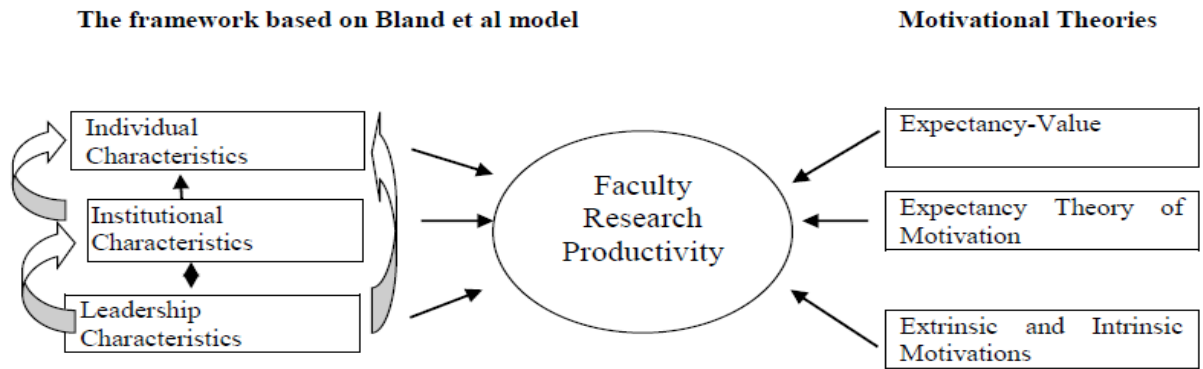
Backes-Gelner and Schlinghoff (2004) state that monetary incentives positively influence research productivity; if the monetary incentives are gone, the research publication rate decreases (Backes-Gelner & Schlinghoff's, 2008), supporting the findings of Jenkins et al. (1998) which demonstrate a correlation between publication volume and financial incentives. Stack (2004) names financial incentives as “a significant predictor of research productivity” (Stack S., 2004). Based on the results of a study by Tien F. (2008), among various kinds of rewards, many faculty members consider a pay raise to be the most important reward.

### **Self-determination**

Along with extrinsic motivation, faculty research productivity can be stimulated by intrinsic motivation as well. When faculty members are intrinsically motivated, they heavily engage in research activity because they are interested in what they are doing and enjoy the activity. According to Deci and Rayan (1985), self-determination is stated as intrinsic motivation for individuals who are motivated to maintain an optimal level of stimulation and fulfill basic needs for competence. Faculty members are engaged in research activities to maintain self determination and feel competent in conducting research or the topic they are investigating.

### **Conceptual framework**

Many theories exist that help researchers to determine factors impacting faculty research productivity and that define motivational influences stimulating faculty to pursue research. The literature-base framework in the book *Research Productive Department: Strategies from Departments that Excel* by Bland and her colleagues (2005) offers a useful model to better understand three foundations that affect individual research productivity: individual characteristics, institutional characteristics, and an institution's leadership characteristics. This model suggests that all three integrated domains act to maintain the foundations of research activity. Likewise, the *Expectancy-value Theory* helps to determine the motivational factors that probably increase faculty research productivity. Based on statements by Schank et.al., (2004) expectancy for success foresees accomplishment and effort, while value predicts alternatives to persist in pursuit of a career in research. The following figure demonstrates the theories used for defining the factors and motivational impacts affecting faculty research productivity.



**Figure 2. Conceptual framework**

### Conclusion

In this chapter the extent literature on the issue of faculty research productivity has been analyzed and two theoretical frameworks have been provided to achieve the objectives of this chapter. The main factors which influence research productivity negatively and positively have been explored within the frame of motivational theory: Expectancy Value Theory and The framework based on the three foundations provided by Bland et al. The first research question of the study was analyzed under the Expectancy Value Theory in order to identify motivational factors. The second research question was explored under the Literature-base framework of Bland et al. highlighting the major factors in a Kazakhstani context that are being met.

Most research concerning low faculty research productivity was conducted in Western cultures with the exception of some studies in the Commonwealth of Independent States. There has been much research done on the perceptions of obstacles preventing faculty from pursuing research, yet little is known about the other possible factors and stimulating motivational influences that increase the number of publications and develop faculty interest in research activities. Research on these issues in Kazakhstan would contribute to

understanding the gaps that exist in the mentoring experiences of novice faculty engaging in research activities and improving collaboration between faculties in pursuing research.

### **Chapter III: Methodology**

#### **Introduction**

This chapter presents an explanation of the methodology employed for this study. The purpose of this chapter is to define the research design of this study, to describe sampling techniques, and to identify data collection methods. Next the data analysis procedures are clearly described and justified. Ethical considerations in planning and conducting research are also explained thoroughly. It describes the research design employed to answer the research questions: 1) What factors affect the ability of faculty to conduct research? 2) What motivates faculty to pursue research?

#### **Research Design**

A qualitative research approach has been employed in order to achieve the purpose of this study and its research questions. The use of this approach is appropriate because it allows the issue of faculty research productivity to be explored in greater depth by developing a detailed understanding of faculty experiences and perceptions (Creswell, 2014). The research design used in this study is a qualitative interview design, which enables the in-depth collection of data on individual experiences in the words of the participants. (Creswell, 2014, p.33).

#### **The Central Phenomenon of the Study**

Creswell describes the central phenomenon of a study as “the key concept, idea, or process in qualitative research” (Creswell, 2014, p. 30). The central phenomenon of the current study can be characterized as combination of factors and motivational influences of faculty research productivity. Therefore, this study aims to develop a clear understanding of this phenomenon so as to discover positive and negative factors, as well as the motivational influences, that impact faculty research productivity.

**Research Site**

To address the research questions of the present study, the research was conducted with faculty members from various higher education institutions, for the study is focused specifically on faculty members' research productivity. Participants were selected from various national, state, private, research oriented and teaching oriented institutions located in the cities of Astana, Almaty, and Taraz. These cities were chosen because Astana and Almaty are main Kazakhstani cities in which the researcher was able to find participants to the interview. The city of Taraz was chosen because the researcher is familiar with one of the heads of departments in university who was able to assist to find interview participants.

**Data Collection Methods**

To answer the research questions semi-structured Skype interviews with faculty members from different higher educational institutions across Kazakhstan would be utilized. Semi-structured interviews were chosen as a method of data collection since they may include an open-ended question, which allows modifying the direction of conversations with the participants by asking additional questions, as well as to clarify and test emerging hypotheses by probing (Cohen, Manion, & Morisson, 2007, p.349), whereas structured interviews do not allow this flexibility.

Qualitative interviews were used to collect the data and answer the research questions. Punch and Oancea (2014) highlight that qualitative research interviews facilitate obtaining an in-depth understanding of "people's perceptions, meanings, definitions of situations, and constructions of reality" (p.182).

An interview protocol was designed by the researcher which includes the following important components: information about the interview, an introduction, the purpose of the study, the interview content, questions with probes, and closing instructions (Creswell and

Creswell, 2018). Open-ended questions help to find the answers to research questions about factors impacting research productivity and motivational factors that inspire faculty to be highly involved in research activities. For instance, there are questions related to various possible factors that could impact on faculty research: What kind of supportive factors do faculty members need when doing research? What are the most important things that would best contribute to improving faculty research productivity? What inspires and motivates faculty to do research?

Interviews were collected using the interview protocol as the main instrument. Interview protocol helps to guide the discussion and ask pre-established questions. The research problem, research questions, and literature review provided information for the researcher to develop relevant interview questions and to construct interview protocol (Creswell and Creswell, 2018).

### **Sampling Procedure**

This section indicates the type of research sampling used in the study and describes the process of selecting participants. This study aimed to employ purposeful sampling to select participants and sites in order to learn and understand the central phenomenon (Creswell, 2014, p.228). A decision was also made to use a maximal variation sampling within a purposeful sampling. The use of a maximal variation sampling technique allows for the examination of “cases or individuals that differ on some characteristic or trait” (Creswell, 2014, p.229). In a maximal variation sampling the researcher first identifies key characteristics then finds sites and individuals that display different dimensions of those characteristics (Creswell, 2014, p.207). The goal of this stage of the study was to select two groups of individuals (novice faculty and senior faculty) with various differences in education, age, gender, marital status, academic rank, and years of experience so as to achieve the

greatest variability in characteristics. It is important to include participants with multiple characteristics in maximum variation sampling to elaborate the complexity of the issue.

(Creswell, 2012)

### **Data Collection Procedures**

The most important procedure before collecting the data was gaining access to the participants and sites (Creswell, 2014). This procedure included several steps.

First, having obtained the approval from the Graduate School of Education (GSE) Ethical Review Committee, the researcher started the data collection. As the participants are individuals from several types of universities, the researcher identified whom to invite from the list of faculty members depending on the faculty's personal characteristics such as gender, academic rank, age, marital status, and research performance. The department chairs from different departments of various universities provided the list of faculty where all the characteristics of maximal variation are indicated helping to select the participants for the interview.

The next step was to obtain permission from the faculty to be interviewed by sending them invitation letters via an e-mail explaining the purpose and nature of the study and the consent forms upon which participants could find all of the necessary information about any potential risks and benefits of the study and confidentiality issues. Having obtained the permission from 15 faculty members, a schedule for Skype interviews which was convenient for both sides and did not interfere with job responsibilities was created. When permission was not obtained, I chose faculty from other universities according to the list of personal characteristics and the research performance of the faculty.

An electronic version of the consent forms in a language convenient to the participants (English, Kazakh, and Russian) was sent beforehand. After the consent forms were signed, a



50 minute interview was conducted in the pre-selected language of the participant. The participants were asked to answer to open-ended questions by Skype and the interview was recorded with their permission. Interviews were conducted from December 2018 until March 2019. The researcher used interview protocol to take notes of the most important information at the end of each interview. Finally, the researcher thanked the respondents for the interview and asked permission for a follow-up interview if needed.

### **Data Analysis**

This section describes the process of data analysis. Corbin and Strauss (2008) state that “analysis is a process of examining something in order to find out what it is and how it works” (p. 46). The purpose of data analysis is to critically analyze the responses of participants and identify the main factors impacting faculty research productivity.

Before conducting the interviews, several folders were created containing the following information: a consent form, the invitation to interview, and the interview protocol in three languages (Kazakh, English, and Russian). As the majority of participants preferred the Kazakh or Russian language for the interview, the data then were transcribed and translated into English. Only important quotes were selected for reporting and translated into English.

After transcribing the data, the table chart was created according to the research questions. The data was analyzed by hand using color coding due to the small number of participants. Creswell (2014) recommends analysis by hand when the number of transcripts does not exceed 500. Only fifteen respondents participated in the current research, so it was convenient to analyze transcripts by hand. Thematic coding was used to differentiate the most significant ideas that contributed to the central phenomenon of the study (Creswell, 2014), and thematic codes were narrowed to specific sub-themes for analysis. The consistent and

inconsistent themes were identified based on the theoretical framework and the results of literature review, and those themes were defined to answer the research questions.

At this stage, the most meaningful data were replaced in a separate document to cull the less important information from the analysis. The emphasis was given to better understand the factors and motivations underlying of faculty research productivity.

Overall, this qualitative analysis provided an understanding positive and negative factors impacting faculty research productivity and identified the motivational influences stimulating faculty to conduct research.

### **Ethical Concerns**

The study has been conducted in accordance with ethical principles and norms. Prior to the fieldwork, the researcher submitted NUGSE Research Approval Application Form, wherein a brief description of the study was presented, along with its purpose and research questions, the research methods, and its risks and benefits were briefly summarized. Procedures for maintaining confidentiality of the participant's information was explained and ensured. Further, the informed consent form and the interview protocol in three languages were also submitted to the NUGSE Research Committee for consideration of ethical approval review.

The participant consent form contains information about potential risks and benefits from their participation in research. All participants were informed about the voluntary nature of their participation in the study, about their rights concerning questions and their ability to withdraw from the interview at any time. The researcher notified participants about the necessary study information: its purpose, the length of the interview, and the future utilization of the information.

The informed consent forms included information about possible risks and benefits from participation in the study. The first potential minimal risk relates to the interviewees' personal time which was allocated to the interviews during their workdays. To avoid this risk, the researcher created a schedule and agreed to the dates when the participants would be interviewed beforehand. Second, the potential risk associated with the possibility of participant identification from the description of their personal characteristics or their belongings to research sites in the final report is acknowledged. To mitigate this risk, the names of research sites are not revealed in the final dissertation. Precautions were also taken to make sure that the information revealed does not expose the identity of the participants. Measures were taken in advance when enlisting individuals for the interview in order to avoid exposure to administrators. Participants were invited to the interview through e-mail letters which were sent to their personal e-addresses. The third minimal risk associated with collecting data made for research purposes and spillover of these data from voice and paper-based recordings via the Skype application is addressed. To speak to this issue, the materials have been saved in a folder on the personal computer of the researcher which is password protected. The recorded Skype interviews were destroyed after being transcribed, and the real names of interviewees were replaced by pseudonyms to ensure confidentiality. The file linking the names with their codes is stored in a separate folder on the password protected computer.

Other risks could be related to sensitive questions, particularly more personal and professional questions about salaries and leader attitudes toward employees, which are included in the interview protocol. To mitigate these risks, the researcher informed the interviewees about their rights not to answer any questions with which they felt uncomfortable.

There are also particular benefits from the interviews that could be helpful to further development and improvement of faculty research productivity. Based on the outcomes of this study, policymakers, those governmental officials who deal with research and HEI administrations would probably increase their understanding of how to provide better opportunities and conditions to increase the level of faculty research productivity. Consequently, faculty would indirectly benefit by possibly having their work conditions improved. In addition, the study would provide an opportunity for the faculty to reflect on their motivations for conducting research, as well as on the research environment in their institutions. If the faculty members are highly motivated to do research, this should affect the growth of their professional competence, as well as their ability to voice their concerns and suggest recommendations for improvement to the university administration.

### **Limitations and Delimitations**

After describing the methodology, the limitations of the study will be addressed concerning the issues surrounding the low level of faculty research productivity.

The first limitation of this study pertains to the lack of representatives from all the types of higher education institutions and departments in the country. Even though the researcher decided to enroll faculty members of national, state, private and research-oriented and non-research-oriented universities, the majority of participants were from private non-research-oriented universities. It was difficult to invite participants from all types of HEIs as planned before because of the unwillingness of many faculty members to participate in this research. To address this restraint, further research should involve more diverse representatives of university faculty.

The second limitation is that as a small number of participants comprise the sample, the results of this study cannot be generalized to the larger population of faculty in

Kazakhstan. In fact, there were participants who were from the same department and university which makes it hard to analyze the validity of the results. Further research should take into consideration including participants from the same department; however, different departments in the same university.

The third limitation in this study is an overrepresentation of female faculty. The majority of faculty members of HEIs are females who agreed to participate in research, whereas male representatives because of their small number and unwillingness to take part in this study were underrepresented, so it was difficult for the researcher to identify a gender difference phenomenon in this research. Further studies should try to attain genders parity when sampling.

Finally, faculty respondents of private HEIs exceeded faculty respondents of other types of universities. Private HEIs faculty were highly interested to participate in this research rather than other university representatives. However, any research should include balanced representations of all types of HEIs to afford reliable results.

### **Conclusion**

In this chapter, the overview of the methodology used in this study has been presented. In particular, it demonstrates the design of the research, which is a qualitative approach. The procedures of data collection and data analysis have been described. Ethical considerations in planning and conducting this research are addressed. The study limitations and delimitations are provided, while the results of this study will be explored in the next chapter.

## **Chapter IV: Findings**

### **Introduction**

This chapter presents the findings of the study aimed to explore the factors impacting faculty research productivity and the motivational influences on faculty members to conduct research. The study aimed to answer the following questions: 1) What factors affect the ability of faculty to conduct research? 2) What motivates faculty to pursue research? To answer these research questions the study employed a qualitative method design.

The researcher collected the data via Skype interview from fifteen faculty members representing various types of Kazakhstani higher educational institutions with different durations of working experiences. The data were transcribed, thoroughly analyzed, and coded into specific themes and subthemes referring to the research questions of the study.

This chapter is divided into three main parts aligned with the research questions of the study. The first part is devoted to the first research question and describes the factors influencing faculty research productivity. The second part explores the second research question on motivational influences that stimulate faculty to pursue research. The first section begins with the demographic analysis where participants' characteristics are provided in a table and followed by a description of the table.

### **Characteristics of participants**

This section illustrates the categories of respondents who participated in the interviews and it provides information on the participants type of university where they work, years of experience, and socio-demographic information (family, children, and children's ages). The names of respondents are replaced with codes and these codes will be used throughout the study.

Overall, fifteen respondents participated in the interview: ten faculty members with more than ten years of working experience and five faculty members with less than ten years of working experience. Also, twelve of the participants were females; only three of the participants were males, due to fewer male faculty at universities. According to their academic rank, participants were differentiated as full professors (2), associate professors (5), and senior instructors (8). These characteristics are suitable for this study as the literature indicates the importance of noting various participant characteristics when analyzing the different perspectives of individuals in research activities. The working experience of faculty respondents varies from five (5) months to forty-one (41) years, and participants represent three different types of universities: national, state, and private. This information, as well as the demographics, will be helpful when analyzing the findings. However, it should be noted that the number of respondents from national and state universities took part in this research is less compared to the number of representatives of private institutions which was stated in limitation section of the study. General demographic information of the participants is given in Table 1.

Table 1. General Information of Participants

Code	Gender	Age	Years of experience as a faculty member	Type of university	Having family, children; ages of children
Respondent 1	Female	32	8	Private	No
Respondent 2	Female	50	5	Private	Yes, 2 adults
Respondent 3	Male	37	11	Private	Yes, 1 two-year-old
Respondent 4	Female	50	21	Private	Yes, 1 adult
Respondent 5	Female	35	14	National	Yes, 3 two-11,7 years old

Respondent 6	Male	63	41	State	Yes, 4 adults
Respondent 7	Female	43	7	State	Yes, 4 eldest 20, youngest 5
Respondent 8	Female	41	17	Private	Yes, two adults, 1 six-year-old
Respondent 9	Female	38	19	Private	No
Respondent 10	Female	65	39	Private	No
Respondent 11	Male	60	32	State	Yes, 3 adults
Respondent 12	Female	44	11	Private	Yes, 1 adult
Respondent 13	Female	53	22	Private	Yes, 2 adults
Respondent 14	Female	38	10	State	Yes, 1 teenager
Respondent 15	Female	29	5 months	National	Yes, 1 three-year-old

**Results pertaining to Research Question 1: What factors affect the ability of faculty to conduct research?**

To answer the first research question, the participants were asked to reflect on the factors affecting their ability to conduct research. Each participant's response was thoroughly analyzed and categorized for any similar patterns among them. Most of the participants highlighted seven negative factors (individual and institutional factors) and three positive factors (leadership factor) that affect faculty to conduct research. Table 2 represents the negative factors with the number of responses. Below the negative factors are described first and positive factors second.



### Negative factors

Table 2 presents negative the factors with the number of participants. Each of the negative factors is described in greater detail heretofore with exemplifying quotes from the participants.

Table 2. Number of References to the Negative Factors Impacting Research Productivity

Themes	Number of Participants
<b>Individual factors</b>	
Lack of knowledge and skills	11 responses
Low level of interest in conducting research	6 responses
Lack of time due to family responsibilities	7 responses
<b>Institutional factors</b>	
Heavy teaching and service workloads	13 responses
Lack of financial support	8 responses
Lack of technical support and resources	7 responses
Absence of mentors to facilitate	5 responses

#### **Lack of knowledge and skills to pursue research**

This factor appears as the main influence for faculty in doing research. Eleven participants out of fifteen reported that many faculty members do not possess the knowledge and skills essential to conducting research. As a result faculty are not productive in research and their research performance remains under expected level. Knowledge and skills sub-themes are categorized as follows:

*Sub-theme №1: Knowledge and skills of research methods.*

Due to a lack of knowledge of research methods, most faculty members cannot publish in international journals and resign themselves to publishing in local journals, where most articles are summaries of existing studies conducted elsewhere or discussions of existing theories and their implications for Kazakhstani studies. Even the faculty members who have up to thirty years of experience publish their papers in local journals and conferences: they do not utilize any research methods; they only provided rehashed theories and concepts by citing other scholars' publications. These faculty members never collect data and conduct analyses using software programs. Some of the frequent comments follow:

I try to publish my work in local university newspapers and conference journals once a year, but I never take interviews or make surveys, probably because I do not know how to do that. I just read some books or articles on the topic that interests me and cite the authors. Even when I wrote my diploma in the practical part, I did research using available sources. Maybe this is the way I understand the research and continue doing it like this. (Respondent № 12)

For doing research, I think the faculty member should know the field, subject, clearly define the goal. It is important to make analysis, to have skills how to use statistical software for analyzing data. I am a faculty member who cannot use software programs. To know theory is not enough to reach results of research. (Respondent № 10)

Other responses are evidence that knowledge and skills for research are gained while doing the PhD and master's degrees. Many faculty members do not know research methods unless they earned post-graduate degrees where they had to learn and practice skills they need for research.

When I started to work as a faculty member the first three years I did not write any scientific articles nor do any research projects until I completed my master's then PhD degrees. The knowledge and skills gained during post graduate study directed me to the research field. I think that only post-graduate students deeply understand research and its process. In order to conduct research, a person needs to understand the field of research and have good writing skills, be able to think critically, have the ability to organize interview times and the process, focus groups, have a deep knowledge of methodology and methods. (Respondent № 15)

Having analyzed all of these responses, it can be stated that lacking the knowledge and skills necessary to conduct research highly impacts faculty research performance. Due to insufficient knowledge of research methods, many faculty members publish their papers in local journals. Almost all of them except one do not possess the proper knowledge and skills gained during post-graduate studying.

*Sub-theme №2: Lack of academic English language knowledge.*

Substandard knowledge of academic English was mentioned by almost all study participants except those who studied English at universities or who graduated with foreign languages specialties. Faculty members without English proficiency stated that scientific articles in high impact factor journals require advanced English language proficiencies, and not mastering the English language on an academic level prevents them from publishing research papers in reputable journals. The following responses illustrate this idea.

International scientific journals have their own requirements that I cannot afford to manage in terms of language. I studied English at school and this knowledge does not help me write articles for those journals. (Respondent №8)

To overcome their obstacles with English, faculty members have to appeal for help from colleagues who are proficient in English or to a translation service for help translating their research papers. However, translation sometimes affects the quality of the work and it loses the original meaning. Moreover, as the respondents state they cannot afford to pay for translation all the time.

I know English only at the most basic level. In order to publish my research papers in international journals I have to ask someone who knows academic English to translate my work. (Respondent №7)

### **Low level of interest in conducting research**

Most faculty members with a low level of interest in doing research came to higher education with different motives. Two respondents out of six only wanted to instruct students. The other two respondents wished to gain experience after a long period of maternity leave and to be promoted to the administrative department to work with documents. The last two respondents are still unwillingly working as faculty members because of their lack of another career choice. Some frequent comments were as follows:

I wanted only to instruct and work with students. I do not have any interest in doing research. I earned my Master's degree after fifteen years of work experience because it was a requirement for faculty members to have a higher degree rather than bachelor. I did Master's not for being engaged in research. (Respondent №4)

I conduct research very rarely when I feel pressure from the head of department. Actually, I came to the university to be promoted to the administrative department and work only with documents, but I am still waiting for being promoted. (Respondent №9)

To be honest, I was pressured by my parents to work as a faculty member because after school I chose my future profession (an English language teacher) under my parents' force. I do not have any choice to change my job, because I can work only at schools or higher educational institutions, but I have never been interested in science and I cannot do research unwillingly. (Respondent №14)

### **Lack of time due to family responsibilities**

Another finding of the present study is that family responsibilities of faculty demand their time and leave little time for faculty to do research. This idea is mentioned mostly by female faculty members with children between the ages of three and sixteen and those faculty living with elderly parents. These faculty members cannot afford to allocate time for research due to childcare and care of elderly parents. After work some female faculty members rush to schools to pick up their children after classes; others hurry home to meet children who return

from school or to see off their children to school. They prioritize time with family responsibilities such as cooking, running their households, doing homework with children, shopping, and so on. The following answers represent this finding:

I want to spend time on my professional life. I know that doing research is one of the faculty's functions. However, I can only carry out teaching and service. Maybe I will fulfill my obligations when my children grow up. (Respondent №5)

Doing research requires time and effort. At work I spend time on teaching and service. After work I am fully engaged in house work. My elderly parents always wait for my coming to take care of them. Besides them, I have my children who also need attention and assistance. (Respondent №7)

### **Heavy teaching and service workload**

Faculty members with fewer than twenty (20) years of working experience highlight the heavy teaching hours and extra activities that they must perform related to their organizations' university holidays, conferences, and advising services as a factor impacting their time to do research. Heavy teaching workloads of faculty members seem to have a considerable impact on research productivity and do not leave time for conducting research. They mentioned three reasons for the heavy teaching hours and services that are described below: poor salaries, pressure to pursue research, and lack of staff.

First, respondents emphasize poor salaries as a main reason for being overloaded with teaching hours. Most faculty members willingly carry extra teaching hours than allocate time for research because doing research does not provide any financial incentive. These ideas are evidenced by the statements of respondent № 8.

My salary will be low if I take few hours of teaching. For research activity, our institute does not pay extra money, but they demand to do research which does not give me salary. So, I try to take many teaching hours. (Respondent 8)

Second, pressure to pursue research by head of departments and deans has been identified as the next reason that pushes faculty to have heavy workloads to compensate for their inability to engage in research. In other words, some faculty members who are not able to conduct research for specific reasons atone for their incapacity by assuming more teaching hours. By doing so, faculty members not involved in research appear busy with teaching. This is reflected in the words of respondent № 8: "...But they demand we do research which does not give me salary. So, I try to take many teaching hours."

Moreover, faculty members contend that they do research only "for show" due to the pressure they have from administrators. The following is the comment of a faculty member pursuing research under pressure:

To tell the truth, I published my papers only for show. I understand research as a creative process. But I do not like when the head of department makes us to accomplish our papers due dates. (Respondent №7)

Third, lack of staff affecting faculty's overload was described as a reason that increases faculty's teaching and service workloads. In order to economize financial expenditures some higher educational institutions do not hire workers to distribute duties equitably. Instead, they overwork faculty members with extra assignments that are not their responsibilities. The following quotations represent the views of several respondents:

In our department there is always lack of instructors or faculty members. Because of this, other faculty members have to be overloaded with teaching hours in order to help the university in difficult situation. This situation, on the one hand, seems as a help for faculty member to earn extra money. On the other hand, it impacts the quality of work. (Respondent №9)

My workload is intensive. Except teaching hours I do spend time on service, engagement activities for university, and administrative work. As a department chair and a director of one research center, I spend 2 hours a day on teaching, 1 hour on research, 7 hours on administrative service. (Respondent 3)

**Lack of research funding**

Enduring a lack of research funding is mentioned by the majority of the respondents. Faculty members who try to allocate time for the research and publication of their work find this factor important not only to discuss but also to tackle the problem. Research requires considerable financial support. From the answers given few research grants provided by the government or other private organizations are sufficient to meet all faculty applications for research grants. Moreover, faculty members from private universities are unsuccessful in research programs due to requirements of the Ministry of Education and Science. The following quotations represent the views of several respondents:

It is a difficult process to apply for research grant. Because of the competitive basis of allocation of grants, the priority is given for faculty from national and state universities. (Respondent №4)

Despite the high points I get for my research proposal, I have never won the grant because of a lack of research funding for the field I apply. (Respondent №10)

Some faculty members who were not awarded grant have to find funding for research themselves. However, faculty members cannot afford to pay for publications and other research activities with their low salaries. The answer of respondent № 11 illustrates this idea:

As faculty members we do not have any financial support for research from university or the Ministry of Education and Science unless I get hold of a grant from the MES. (Respondent №11)

**Poor access to research facilities and resources**

The ability to conduct research requires access to research laboratories, international scientific libraries, Web of Sciences and Scopus, software programs, and other resources.

Otherwise, doing research will be neither efficient nor motivating. The answers of respondents №2 and 7 are used to illustrate this finding:

To be more productive in research, I wish to have access to statistical software program such as SPSS. It is a very comfortable program to test data analysis for management and marketing, but since IBM launches this program, the price is very high. If we do not pay we do not have access on the program. (Respondent №2)

The university where I work does not have necessary resources and materials that I need for research. I go to the scientific library in the city to get scientific articles from online data bases. (Respondent №7)

The lack of facilities and resources is not the only problem mentioned by interviewees, however. Many of the participants also indicate that there is a lack office space for research activities. Most faculty members do not have their own separate rooms or even work spaces with computers. Faculty members have to share a staffroom with other faculty where the number of users can reach up to 20 people working simultaneously. These scarcities significantly affect faculty research performance and their quality of work. Some of the typical comments are exemplified below:

I have to share my table with other professor. Because of her older age I always give place to her and wait until she goes. (Respondent №9)

It is always noisy in the staffroom. Most faculty members spend their spare time in the staffroom and have discussions. By doing this, they bother others who try to work on their research paper. (Respondent №13)

### **Absence of mentors**

This study reveals that having mentors when conducting research plays a significant role mostly for the faculty who do not have much experience in writing scientific papers and the research process from its inception until publication of the work. First year faculty at HEIs endeavor to accomplish all three obligations: teaching, service, and conducting research.

However, doing research becomes a baffling problem because of their lack of knowledge and



skills. In this case it is crucial for novice faculty members to have seasoned advisors to assist them in research. For instance, respondent № 15 complained about her unsuccessful experience dealing with her first publication during her first year:

I wish I could have an adviser who would direct me in research. As far as I am a novice faculty member and I signed a contract where one of my obligations is research, I do not know much in publishing papers. (Respondent № 15)

Not coincidentally the nature of organizational culture, where more senior faculty often wield power over junior ones, enables junior faculty to be at times exploited rather than mentored by senior faculty. For instance, some first year faculty members were constantly asked to type the articles or other papers of senior faculty members. Additionally, novice faculty members with English language proficiency are also asked to translate some senior faculty papers for international scientific journal publication. These novice faculty members truly want to have mentors who assist junior members in conducting research instead of being exploited. These ideas are illustrated by this comment from respondent № 9:

I do not like when Professors take advantage of freshmen asking them to translate their work or type some papers. They do not teach or explain how to do research. (Respondent № 9)

Overall seven negative factors were identified that impede research productivity by faculty. According to the analysis, it can be stated that the most frequent negative factor answer is a lack of time to pursue research resulting from a heavy teaching and service workload. It is also obvious from the responses that individual factors are influenced by institutional factors, whereas institutional factors are interrelated with leadership factors because leaders create rules resulting institutional characteristics that in consequence influence faculty research productivity.

### Positive factors

The next three positive factors that are conducive to faculty research performance will be analyzed. These positive factors are seminars and training courses, and research leave are considered as leadership factors. Table 3 illustrates the positive factors and the numbers of respondents.

Table 3. Number of References to the Positive Factors Impacting Research Productivity

Themes	Number of participants
<b>Leadership factors</b>	
Seminars and training courses (supportive leader)	10 responses
Research leave ( supportive leader)	6 responses
Research collaboration (scholar and participative leader)	4 responses

#### Seminars and training courses (Supportive leader)

Faculty consistently mentioned the need for seminars and training courses dedicated to research as an important positive factor for research productivity. Faculty need to be knowledgeable about the publication process and understand how to frame research topics that attract publication reviewers. Additionally, research seminars and courses provided by university administrators are helpful for faculty to save time and expenses. For example, respondent № 15 mentions the following:

I need to know how to respond to the reviewers' criteria and frame the research in the right way. Scholars who always publish know the whole process of research but for the novice it is a significant factor. Seminars and courses would be helpful in this case if our administrators organize them for us.  
(Respondent № 15)

We do not have extra time to search for seminars or other courses that are useful for new faculty. It is better to have those research seminars within the

university to save our time, and university administrators should meet the expenses to support faculty. (Respondent 14)

Procedural knowledge concerning how to publish peer-reviewed articles was determined to be a significant factor in assisting faculty to increase research productivity. Faculty participation in various seminars and training courses pertaining to the research process when introduced along with the knowledge and skills necessary when conducting research such as critical reflection of scientific articles, writing research proposals, ethical review, peer review, and other useful instrumental and statistical techniques would be efficacious.

In our college, we have research seminars where faculty members share their research interests, research activities, problems, ideas; we collaborate with each other, and create teams for research. We are informed about coming conferences where we can present research results. (Respondent №2)

Seminars, training course and workshops are helpful to learn how to excel in teaching and research, what research topics are actual, how to organize the whole process of research. (Respondent №14)

Overall, it can be stated that seminars and courses positively affect faculty interest in conducting research in this group of respondents. According to participants' answers, it is clear that leaders' role is important to organize research seminars and training courses because decisions are made by university administrators. Most importantly, three respondents in this group were usually inspired after the seminars and courses they attended; consequently, these faculty members tried to conduct research more frequently than their other colleagues.

### **Research leave (Supportive leader)**

Faculty have shared that the time allocated for research is a significant factor in research productivity. Some respondents comment that having to work overtime and working long hours only by teaching really takes time. In order to be able to devote time for research,

faculty must find the time to manage their teaching load. Faculty state that one solution to this problem is providing academics research leave as it is practiced at some universities.

When I worked at the research university, we could have research leave twice a year. During research leave, I could devote time to reading scientific articles and doing analysis without any interruption. (Respondent № 8)

From the given response, it can be stated that not all of the leaders of higher educational institutions provide this opportunity for faculty members, nor can all the faculty members secure research leave. This idea can be seen from the statement of respondent № 9:

I am a novice faculty member at the university where I am working now. One day I noticed an announcement on the advertisement desk in the staff room. It was written that one professor had gone on research leave. At that time I was planning to start my paper; however, due to my heavy teaching workload I could not devote my time for that. I asked for research leave and was refused because I was new faculty member and that opportunity is given only for professors with long work experience. (Respondent № 9)

### **Research collaboration (Scholar and Participative Leader)**

Faculty have noted that interacting and collaborating with scholars are important procedures for generating new research ideas. In further support of this, it was stated that it is significant to develop research collaboration and networking opportunities to develop faculty research skills and knowledge base. Moreover, research collaboration creates opportunities to publish papers in international journals for faculty who have peer support from international scholars or who conduct research with experienced peers in research.

I appreciate meeting with people in one field to exchange ideas and experiences. I try to attend collaborative programs where local and international researchers share their skills. (Respondent №15)

I have a peer from national university who knows all publication process. Such collaboration makes my job easier in publication process. (Respondent №8)

Additionally, participants of the interview emphasized the role of a university leader as a scholar and participative leader when the leader is taking part in researchers' collaboration. They say when a leader is a scholar he or she understands better the challenges or issues faculty face during research projects. More importantly, scholar leaders facilitate academics working on research projects and participate in research activities by giving advice.

Our previous leader of university was a scholar. He has many books and articles. Now we realized that having a scholar leader impacts on researchers; our requests on financial incentives were easily supported and proved at that time. (Respondent № 3)

In summary, in keeping with Bland C. J. and her colleagues' (2005) literature-based framework with three foundations ((a) individual characteristics, (b) institutional characteristics, (c) an institution's leadership characteristics) are utilized to discover the factors impacting faculty research productivity. As a result, after having interviewed and analyzed the responses, seven negative (individual and institutional characteristics) and three positive (leadership characteristics) factors impacting faculty research productivity have been identified based on the fifteen faculty members' responses. Five negative factors have been previously discussed in the literature, while two negative factor findings are regarded as unanticipated. To better understand the factors impacting faculty research productivity, an exploration of motivational factors occurs in the next section of this chapter.

### **Results pertaining to Research Question 2: What motivates faculty to pursue research?**

To answer the second research question, the respondents were asked to indicate the factors which affect their motivation to engage in research. After a thorough analysis of the participants' responses, five main motivational factors have been determined to stimulate faculty to conduct research: (1) reward, (2) research funding, (3) pay raises, (4) promotions,

(5) interest and enjoyment, (6) and self-efficacy. The numbers of participants are presented in Table 4.

Table 4

*Number of References to the Motivational Factors Stimulating Faculty to Conduct Research*

<b>Themes</b>	<b>Number of participants</b>
Rewards	6 responses
Research funding	12 responses
Pay raises	7 responses
Promotions	5 responses
Interest and enjoyment	5 responses
Self-efficacy	8 responses

### **Reward**

Six out of fifteen participants mention reward as an extrinsic motivational factor that drives increased faculty research productivity. Some higher educational institutions practice a reward system to inspire faculty members to continue conducting research. Several types of extrinsic and intrinsic rewards have been identified from participant responses. Faculty members positively react to extrinsic rewards, salary increase, chaired professorships, and promotions when intrinsic rewards involve peer respect, personal need to stay in collaboration with scholars and contribute to an academic field, and personal need for creativity. This idea is supported by the following quotation:

Faculty members differ from one another by academic rank. Based on their ranks, they get different salaries. Probably I can get chaired professorship as an award if I am highly research productive. (Respondent №11)

I do research not only because of being mandated, but I prefer keeping in touch and to contribute to academic field by new innovations. (Respondent №13)

### **Research funding**

Another motivational asset associated with faculty research productivity is the financial support given by a university. The majority of participants mention that the university assigns some research funds covering travel costs and conference participation that motivate faculty to attend research conferences, thereby stirring them into action to conduct research. The following are examples of the responses:

We attend research conferences in other cities or even countries. Our university meets expenditures on travel and the attendee's costs. (Respondent №3)

It is helpful for faculty when the university or organization covers travel costs and other costs of research conferences. Once a year faculty members can attend international research conferences. After attending such activities faculty take an interest in conducting research. (Respondent №9)

### **Pay raise**

Salary increases are also mentioned by faculty members as an incentive that influences faculty research productivity. The majority of participants advocate that salaries should be increased for those who have accomplishments in research. However, they see no difference between the salaries of faculty who frequently conduct research and those who hardly ever do research. Instead of increasing salaries, university leaders present credentials or certificates of gratitude. For example, respondent №1 remarks as follows:

I think university leaders should reconsider salary distribution. I make an effort to do research for the sake of the university's ranking position, but I get the same salary as those who enjoy their time while I am working hard. Faculty members will be inspired if they see the benefit of their efforts in research. (Respondent №1)

Overall, financial support in terms of increasing salaries, covering expenditures in research activities, and being transparent in the allocation of research grants are viewed by the majority of participants as incentives that lead to an increase in faculty research productivity.

### **Promotion**

Fostering junior faculty toward professor status was seen as a strong motivational factor due to salary difference and academic rank. In their responses, most novice faculty members indicate that one of the most significant requirements for being promoted to professor status is conducting research. Respondent № 1 provided an example of her professional development:

I can say that conducting research contributed to my professional growth a lot because now I am a docent (assistant professor); I grew from the junior faculty to docent in three years after conducting several research papers. I know that research enlarged my knowledge and improved my research skills; my lectures are interesting and of high quality; I will not remain in this position, I will continue to grow until I attain full professor status. (Respondent №1)

### **Interest and enjoyment**

Faculty who frequently conduct research indicate intrinsic motivations such as interest and enjoyment as strong motives; also faculty's interest in doing research defines the intrinsic nature of the Expectancy- Value theory. These faculty members do research because they enjoy it, not for any external rewards. They state that they are really fond of the process of learning something new; they desire to understand the world. The answer of respondent № 10 illustrates this idea:

I am curious about learning something new. If I do not know the answer to something, I want to understand it better, so exploring the subject gives me the answer to my questions. (Respondent № 10)



Besides a curiosity for better understanding the world or finding the answer to a question, intrinsic motivation could be related to the emotional connection with the topic of the study.

The topic of the study comes from my deep emotion. I am concerned about...; after having a child, my research topics changed from “philology” to “being a working mother....” (Respondent №7)

### **Self-efficacy**

Faculty self-efficacy is identified as an important factor determining research productivity. Faculty members with high self-confidence tend to achieve set tasks and goals. This characteristic is a key contributing factor to faculty success in research performance; some faculty members who believe in their own capacities to achieve research results mention their openness to explore new studies and demonstrate their confidence in reaching the results.

I am not scared of any new beginnings. I am always ready to analyze new topics and I like to accomplish what I start. (Respondent № 9)

Faculty self-efficacy is also seen in their desire to be on the same level with their colleagues. It is a kind of competition that stimulates others to catch up with their peers in research performance: if one peer is more productive, another one tries to conduct research as does his/her peer.

I am always motivated when I do something in competition. When my colleagues publish their articles, I also try to publish my papers. I believe that I can also publish because I have abilities in writing scientific articles. (Respondent №4)

Having support from other academics also increases self-efficacy to achieve the task. If faculty members know that they can lean on their fellow academics for support, their self-confidence in writing the papers may increase.

When I have some difficulties in statistical analysis I can ask for help from a fellow academic who is good at statistics. This is not an obstacle for me and I never lose confidence in accomplishing the study. (Respondent №14)

Largely, it can be stated that self-efficacy has a strong motivational influence in helping faculty to conduct research. This assurance can be seen in the various forms of support from fellows who boost their self-confidence in accomplishing tasks. Moreover, the interaction of expectancy and value helped to determine faculty's desire to achieve career ladder which can be defined as expectancy for success in set tasks, and value defined persistence of faculty to achieve research results.

### **Conclusion**

The purpose of this chapter was to present the findings gathered during the interviews. Two sections of the chapter are presented in accordance with the research questions. First, I analyzed the responses pertaining to the first research question: the factors affecting the ability of faculty to conduct research and the findings based on the given responses. The second part of the study was devoted to the motivational incentives that stimulate faculty to increase research productivity. These findings are discussed and compared with the evidence from the literature in the next chapter.

## Chapter V: Discussion

### Introduction

The previous chapter presented the findings derived from the present study. Chapter five discusses the major findings in accordance with the research questions and literature review. The discussion is presented according to the research questions which were set at the beginning of the study: 1) What factors affect the ability of faculty to conduct research? 2) What motivates faculty to pursue research?

This chapter is organized in two sections. The first section provides the discussion of the major findings of the factors affecting the ability of faculty to conduct research. The second section discusses the findings which detail what motivational influences stimulate faculty research productivity.

### Discussion related to Research Question 1.

The findings from this study defined that faculty research productivity is affected by seven negative (individual and institutional) and three positive (leadership) factors. These findings are consistent with previous studies and are further discussed in relation to the previous research and then followed by the unexpected findings of the current research. The first major findings are discussed under three main foundations based on Bland and her colleagues model where three main factors are defined.

### Individual factors

*A lack of knowledge and skills to pursue research* has been determined as a major finding which supports the existing research studies by Alexander et al., (1991), Fung, (2017), and Pintrich, (2002). All identify three types of knowledge that affect faculty research performance: procedural knowledge, declarative knowledge, and metacognitive knowledge. In this study, participant responses consistently indicate that when publishing papers in

international journals novice faculty members and faculty members with a Soviet educational background face challenges. Novice faculty with little experience in research run into difficulties with publication procedures, whereas senior faculty members publish papers mainly in local journals because of their lack of procedural knowledge. This result confirms the previous findings which suggest that procedural knowledge is necessary for the procedures with research application, translation of research ideas into publication, research techniques, and research methods (Fung J., 2017, Azad & Seyyed, 2007, Dundar and Lewis).

Along with procedural knowledge, metacognitive knowledge was found important for faculty to prioritize research by effectively managing their time between teaching, service, and research. Based on statement by Fung J.(2017) metacognitive knowledge directly influences faculty time-management and helps faculty manage workload arising when balancing teaching, research, and service. Declarative knowledge, the third type of knowledge stated by researchers (Alexander et al., 1991; Fung, 2017; Pintrich, 2002) is also found in the responses of participants; it is faculty awareness of research grants and how to obtain those grants. The most frequently mentioned issue regarding less faculty research productivity is lack of knowledge about research grants and its procedural moments which proves the necessity of faculty having declarative knowledge in order to increase their research productivity.

Moreover, substandard level of English proficiency is frequently mentioned by respondents who highlight the importance of the English language in international research and how lack of English proficiency negatively influences their ability to conduct research. The most common responses given by senior faculty members evidence that in order to publish their papers in non-zero impact journals, they have to search for a help from colleagues working in foreign language departments or from language agencies. Of course,

faculty members who received their master's and/or other degrees in English instruction do not see the English language as a barrier to conduct research.

This study also found that *family related issues* are a factor influencing faculty research productivity. In this study most female faculty members who have children under sixteen years of age indicate family responsibilities as reasons that occupy their time and attention, leaving little time for research. On the contrary, female faculty who are single, childless or whose children are adults do not mention family issues as factors influencing their research activities. These female faculty members are highly involved in research and demonstrate positive outcomes in their research field. This finding is consistent with Perna 's (2001) who indicates that women with children are less active in conducting research than women without children, although some authors believe that women with children attempt to be highly research productive, proving that having children does not interfere with their research productivity (Sax et al, 2002; Hamovitch & Morgenstern, 1977). Thus, these scholars do not view family issues as a factor impacting faculty research productivity. This study further found that family related issues do not apply to male faculty members.

### **Institutional factors**

*Heavy teaching and service workloads* are the most reported negative factor influencing faculty research productivity. Despite their year of experience, academic rank, gender, and marital status almost all participants indicate lack of time caused by teaching and service workloads as the main factors preventing faculty from engaging in research. This finding is in line with previous studies (Teodorescu, 2000; Milem et al., 2000; Fender et al., 2005; Shin, 2010; Hesli & Lee (2011); Kuzhabekova & Ruby, 2018) which claim that time demanded by teaching and administrative work supersedes the time available for research.

This practice has been witnessed in many HEIs based upon the Soviet educational model wherein faculty spend more time on teaching, administrative duties, accreditation-related activities, and student advising that take time from research. Moreover, post-Soviet faculty income is based on teaching load *stavka* where the number of hours taught accounts for the wide range in faculty salaries. This system has a negative impact on faculty teaching duties and does not leave time for research activities. The ability to take on additional teaching hours greatly determines faculty income. Consequently, faculty increase their incomes by teaching additional hours regardless of whether or not these additional hours are in their subject areas. Faculty also act as replacements for other faculty members of other subjects that were absent due to maternity leave, on study leave or otherwise absent. This finding is supported by the scholar Stainer-Khamshi (2016) who conducted an in depth analysis of the post-Soviet *stavka* salary system in education and determining the *stavka* to be the main issue undermining faculty time allocation.

The finding from this study shows heavy teaching and service workload as a negative factor preventing faculty from conducting research which is in line with a study conducted by Schon (1995) where he argues that faculty who dedicate themselves to teaching become invisible and seldom receive rewards or recognitions as do those faculty who are highly involved in research (as cited in Sid W. Richardson foundation forum, 1997). This finding is consistent with the results from a study by Hesli and Lee (2011) wherein respondents by being overloaded with teaching and service hours experienced a negative impact on their research activities.

In concerns with the existing research studies of Cantwell & Mathies, 2012; Hu & Gill, 2000; Bland C. J. et al.; 2005, Bazeley P, 2010, this study found that ***financial support in research*** assists and motivates faculty to pursue research. This finding appears to be

significant for respondents in this study, since the majority of them indicate that a lack of financial support from their institutions and government has impeded their research productivity, for competitive research grants provided by the government are scarce. In addition, the results of this study demonstrate that faculty members interested in research in private universities were rejected for research grants often due to grant requirements which place a priority on representatives being from national and state universities. Faculty members from the private sector stipulation are untenable and unfair which in turn decreases their interest in conducting research.

*A Lack of technical support and the resources to conduct research* (access to laboratories, libraries, provision of facilities, equipments, and resources) are two of the most frequently cited factors influencing faculty research productivity. Several studies (Hardre L.P., et al., 2011; Bland C. J. et al, 2005) have focused on administrative support in terms of the provision of facilities, supplies, and equipment. In line with these findings, respondent from this study report that the absence of software programs necessary for statistical analysis hinders research performance. Moreover, other respondents in this study claim poor access to research laboratories, international scientific libraries, Web of Sciences and Scopus, software programs, and other resources, thereby hindering faculty in their ability to pursue research. Based on participant answers, it can be stated that only research-based universities are able to provide the abovementioned tools to assist and/or attract faculty to engage in research; however, faculty members who are mostly engaged in teaching and service at pedagogical or non-research based universities do not have all the facilities and necessary tools to conduct research.

The results of this study demonstrate that *mentorship in research* helps junior faculty develop research skills and engage in research activities. Indeed, the most frequent comments

of respondents about having mentors are that “advisor would direct them in research” and “mentor support will be encouraging.” This finding was not found as a factor influencing research productivity in literature where the Western case was mostly explored; however, it is an important finding in Kazakhstani context where junior faculty who lack knowledge and skills in research need effective mentorship which will foster them to conduct research. In other words having mentors in research would contribute to an increase in junior faculty interest in research activities. Furthermore, this finding is unexpected and needs further investigation to understand the benefits of mentorship for faculty research productivity.

### **Leadership factors**

Furthermore, this study also explores three positively impacting faculty research productivity factors: *seminars and training courses, research leave, and research collaboration*. These positive factors are considered as leadership factors because research-oriented, participative, and scholar leaders can support faculty with their need. In keeping with previous research (Hardre L.P., et al., 2011; Dundar & Lewis, 1998), the results of this study demonstrate that development programs (seminars, training courses) provided by university administration positively influence faculty research productivity. In most cases, the respondents indicated that attending training courses and seminars helps to improve their research knowledge and skills and enhances their research productivity. Furthermore, faculty members who have already participated in research training courses are inspired and motivated to conduct research. It can, therefore, be stated that development programs not only improve research knowledge and skills but also motivate faculty to engage in research. Additionally, the results of this study have identified *research collaboration* as the positive factor impacting faculty research productivity that is also found in previous studies. In most cases scholar



leaders of universities appear to understand faculty need to make collaborations when faculty pursue research; therefore, this factor can be solved by participative-scholar leader who provides the conditions for faculty to collaborate. To illustrate this fact, several of the respondents who participated in this study concur that collaboration with peers would aid them to refresh their research ideas, consequently increasing faculty interest to conduct research. Likewise, some faculty members stated that they will be able to conduct research in international journals with the support of international peers. Some frequent participant responses were “I try to attend collaboration programs to share ideas,” “collaboration makes my job easier during the publication process.”

Another positive factor promoting research productivity that was found in this study is *research leave*. Unfortunately, this finding is not practiced by all the universities in the country. This study found that faculty members cannot take leave for research in order to be able to devote time for research because of their teaching and service loads, even though research-driven universities provide research leave for faculty members during the period when students go on vacation at the end of each semester.

In effect, the aforementioned findings of the current study echo that of previous studies. The absence of junior faculty research mentors and lack of time due to family responsibilities are present and form the negative factors affecting faculty research productivity, while research leave is also relevant and is discussed as a positive factor.

## **Discussion related to Research Question 2**

### **Extrinsic and Intrinsic Motivations**

The results of this study identify the influence of *extrinsic and intrinsic motivations* as crucial factors stimulating faculty to engage in research. Thus, extrinsic motivations such as

reward, pay raises, research funding, and promotions are frequently given by respondents of this study, supporting existing research studies (Chen et al., 2010; Storey et al., 2008; Tien, 2000, 2008; Backes-Gelner & Schlinghoff's, 2004; Fox, 1985) in which extrinsically motivated faculty are found as highly research productive. Intrinsic motivations in terms of interest and enjoyment in doing research and self efficacy are cited by the majority of faculty members as supporting research productivity. Additionally, extrinsic rewards influence faculty motivation to conduct research.

First, it was found that faculty members appreciate rewards in the form of pay raises and promotions as extrinsic motivators which increase their interest in research. At the same time, several respondents indicated that they do not receive any rewards for their publications. As a result, most of them are no longer enthusiastic about publishing scholarly articles. These results confirm the Tien's (2008) findings that the majority of faculty members consider pay raises as a significant reward for publications. Furthermore, most of the respondents highlight promotion as an important motivation to conduct research because publication results are one of the requirements for faculty members to climb the career ladder. As a result, the finding shows that junior faculty members are eager to be promoted because of the salary differential between academic ranks, so faculty members who are interested in promotion try to conduct more research. In their studies Horodnic & Zait (2015) reveal that research productivity negatively correlates with extrinsic motivation and positively correlates with intrinsic motivation. This finding is consistent with the results from Tien (2008) and Stack (2004), who found that extrinsic motivation is a significant predictor of faculty research productivity.

Second, this study finds intrinsic motivations such as interest and enjoyment and self-efficacy to be motivational predictors of research productivity. More specifically, faculty members who are engaged in research are interested in the process of learning something new,

and others are curious to explore new findings. Some faculty members are interested in research because of its emotional influence. The findings by Deci & Ryan (1985) confirm that self efficacy (also found in this study) when faculty members are motivated to conduct research as they are confident thus will achieve set goals and they believe in their competence to accomplish their studies.

### **Expectancy-Value**

The results of this study are also similar to previous findings that suggest expectancy-value as a motivational predictor of faculty interest to conduct research. Supporting the existing research by Schunk et al. (2014), the results of this study demonstrate that faculty value conducting research by showing their desire and enjoyment to learn something new by giving importance to their research, by giving preference to research that influences their future careers, and by giving up something valuable in order to pursue research. The most common comments were “I am curious about learning something new,” “Conducting research contributed to my professional growth,” and “I am always ready to analyze new topics.” Besides adding value to research, this study shows faculty expectation of future success and this confirms the expectancy-value theory by Wigfield and Eccles (2002).

Finally, Vroom’s Expectancy Theory (1964) helps to explain less faculty motivation in conducting research despite the conditions that policy-makers create and influence of insufficient instrumental rewards that do not meet expectations of highly motivated faculty. Because the situation with research conditions such as research funding, access to international libraries, laboratories, equipment and facilities remain on the same level as a result of current policy implementations, faculty are not able to pursue research

**Conclusion**

This chapter discussed the most significant findings of the study pertaining to its research questions and in relation to the literature reviewed. First, the negative and positive factors found in the study influencing faculty research productivity are discussed in line with previous studies. Overall, seven negative factors and three positive factors were discussed which answered the first research question. Then extrinsic and intrinsic and expectancy-value motivational influences are discussed which addresses the second research question. Bland and colleagues model used for this study helped to define and discuss findings that are explained by authors. Based on the discussion of these findings, two general conclusions have been formed pertaining to each research question. These conclusions and recommendations are presented in the next chapter.

## **Chapter VI: Conclusions and Recommendations**

### **Introduction**

This chapter presents conclusions from the major findings, suggests recommendations for policy makers, and discusses implications for further research. The study aimed at exploring factors impacting faculty research productivity and identifying motivational influences stimulating faculty to pursue research. To achieve this purpose the following research questions were addressed: (1) What factors affect the ability of faculty to conduct research? (2) What motivates faculty to pursue research?

The chapter consists of two main sections. The first section summarizes findings pertaining to the research questions and presents conclusions drawn from these findings. The second part is devoted to recommendations which align with the findings and conclusions. Finally, the implications for further research will be discussed.

### **Revisiting Research Questions**

**What factors affect the ability of faculty to conduct research?** The first major conclusion of this study suggests that faculty research productivity can be affected by negative and positive factors. The results of this study clearly identified seven negative (individual and institutional) and three positive factors (leadership) which influence faculty research productivity. The negative factors are as follows: individual factors: (1) lack of knowledge and skills, (2) low level of interest in conducting research, and (3) lack of time due to family responsibilities; institutional factors: (4) heavy teaching and service workloads, (5) lack of financial support, (6) lack of technical support and resources, (7) absence of mentors to facilitate. The positive factors (leadership): (1) seminars and training courses, (2) research leave, (3) and research collaboration.

Concerning the negative factors influencing faculty research productivity, the research suggests a lack of knowledge and skills in research as the main factor preventing faculty from conducting research. This fact has a detrimental effect on faculty research performance, faculty motivation to pursue research, and job satisfaction making them to carry extra teaching hours and to engage in administrative work or other service activities. Additionally, faculty lacking research knowledge and skills are consistently overloaded with instructing or doing service hereby concealing their inability and unwillingness to conduct research.

The results of this study suggest heavy teaching and service workloads as the second main negative factor which affects faculty research productivity. In other words, faculty cannot devote their time to research when they are overloaded with teaching hours and busy with other activities by advising students, assisting groups of students for university holiday events, and doing administrative duties. The main reasons of being overloaded are low salaries that lead both junior and senior faculty to instruct carrying extra teaching hours and fear of losing their jobs which precipitated faculty to be engaged in extra service activities at their universities. Furthermore, the Soviet *stavka* is still in existence, which affects their salary system and causes faculty to increase their teaching workload.

The findings of this study reveal that lack of financial support, technical support, and resources negatively affects faculty research productivity. The aforementioned tools for research are found extremely necessary to be able to conduct research; otherwise these factors impede the working process affecting the quality and quantity of faculty research performance. Therefore, it is important to assist faculty with requisite support in terms of incentives, equipment, software programs for data analysis, access to laboratories and international scholarly libraries and so forth.

It was also found that junior faculty members need mentors when conducting research in order to learn the skills connecting how to write scholarly articles and be aware of the process of publishing papers. Junior faculty in their first years of experience face challenges with research activities not only because they have recently graduated from universities but also because of lacking knowledge and skills to conduct research. Even faculty members with decent professional experience in teaching face challenges when they attempt to conduct research for the first time. Therefore, having mentors in doing research for faculty is a significant factor for successful faculty research performance.

Faculty low level interest in research is also found as a negative internal factor which inhibits faculty ability to conduct research. The evidence of this study suggests that interest in conducting research is very important for faculty engagement in research. Moreover, the results of this study prove that some faculty members conduct research unwillingly; these faculty are engaged in research only because they are pressured and told to fulfill one of their mandatory duties. However, this finding is reliable only for the respondents who entered this profession unwillingly or only desire to do administrative duties or to instruct.

Another most common answer from almost all participants which is found as a negative factor is less English language proficiency to publish papers in international journals. Faculty members who attempt to publish their work in highly cited international journals have to write their work in academic English or reach out to translators' help; however, most scholars, except those who work at foreign languages departments or had their degrees at Western universities, are not proficient in English language, and their translated papers in most cases lose original contents.

In addition, three positive factors (seminars and training courses, research leave, and research collaboration) are found which affirmatively affect faculty research. In case of

seminars and training courses, faculty would improve their research knowledge and skills when they attend research seminars and courses. Research leave is not widely practiced in many universities, but it would be an opportunity for overloaded faculty to dedicate time for research. Research collaboration is seen also as a possibility that would help faculty to interact and collaborate with scholars in order to generate new ideas.

**What motivates faculty to pursue research?** Summarizing the results pertaining to the second research questions and taking into consideration the evidence from the previous studies, it can be concluded that faculty members are highly research productive when they are stimulated by several motivational factors. In particular, the results of this study suggests that faculty can be motivated extrinsically and intrinsically by the following stimulating factors such as rewards, research funding, pay raises, promotions, interest and enjoyment, and self-efficacy.

Nevertheless, based on the findings of this study, the results prove that extrinsically motivated faculty may easily lose their interest in research when they are not rewarded or promoted, whereas intrinsically motivated faculty are productive because of their interest and enjoyment and self-efficacy in research and may continuously conduct research despite of rewards, promotions, and pay raises. Moreover, the findings of this study support Bland and her colleague's model where three main factors (individual, institutional, and leadership) are identified as factors influencing faculty research productivity. It should be stated that these three factors are interrelated and play an essential role on faculty ability to pursue research (Bland et al., 2005). These three factors cannot affect faculty research productivity separately. In order to have highly productive faculty, university should be research-conducive which is led by a research-oriented-participative-scholar leader and highly motivated faculty members.



## **Recommendations**

This section presents recommendations in light of the conclusions of this study. These recommendations will be addressed to policy makers and university administration in Kazakhstan. Perhaps these recommendations can also be useful in other developing countries with faculty research productivity similar to that of Kazakhstani's.

### **Recommendations for policy makers**

The results of this study suggest several recommendations for policy-makers in Kazakhstan. First, the improvements with faculty research productivity can be made not only by emphasizing efforts and relying on highly productive faculty since most of them anyway can be affected by negative factors as well. On the contrary, policy makers have to review the current policies and practices regarding research funding and research grants that are found as main supporting tools for faculty research ability. Next, financial incentives for research distributed on national policy level should be administered on university level in order to attract faculty to conduct research (not only teaching which are administered by universities). Another recommendation would be to create a triple program such as “government-university-industry” to commercialize the results that have emanated from this study, thereby emphasizing the need for faculty research in a knowledge-based society. Such a program would help government and university from a financial perspective. For instance, nowadays Kazakhstan is attempting to increase the development of innovation in every field, and some companies practice in innovative projects. The idea and research for such innovations can be obtained by university academics. In this case, in the interests of obtaining the necessary results to fuel innovation, government and industry should financially support university

research projects. Consequently, faculty research productivity could potentially play an essential role in the economic development of the country.

### **Recommendations for university administration**

In accordance with the aforementioned suggestions for policy makers, it is logical to recommend university administration to take measures by making improvements in faculty professional assessment taking account not only teaching and service performance but also publication rates and faculty involvement in research projects. Considering the findings about the paucity of faculty research knowledge and skills (which restrict faculty to conduct research and positive factor such as attending seminars) and research training courses (which will improve faculty research knowledge and skills) university administration should provide faculty these exigencies. Another recommendation for administration would be assigning mentors for junior faculty to facilitate them in research activities.

### **Recommendations for further research**

Based on the results and considering the limitations of this study, the following recommendations for further research can be suggested. Firstly, the results of this study cannot be totally objective due to the fact that I am myself a faculty member of private university. Therefore, my personal bias might have predestined the results of the research. It could be advantageous to conduct other studies by outsiders of faculty members to make certain that the conclusions are impartial.

Secondly, since the selected research method does not provide anonymity of the participants, it can be assumed that faculty members were not fully honest in their answers. To get more credible responses, a mixed method study employing surveys and questionnaires can be conducted. It will also give an option of covering a great number of participants from each

sampling category such as gender, age, years of experience, marital status, and types of universities. Since majority of respondents were from private universities and only three respondents were male representatives and only two participants were from national universities, the results cannot be generalized to all Kazakhstani faculty. Consequently, these results are only wholly relevant to private universities for the most part, as well as to female faculty members.

Finally, it is significant to investigate the research-oriented university faculty members' perceptions of their professional identity in relation to the research productivity to acquire a comprehensive picture of the issue with low level faculty research productivity. With different work conditions and opportunities from those of non-research oriented university faculty, academics of research-based universities will probably give new arguments into the problem.

This study has uncovered some implications for the theories employed in this research. The model developed by Bland et al. (2005) defines three main characteristics that influence faculty research productivity, however, this model does not classify them as negative or positive factors, and this empirical study identifies individual and institutional characteristics as negative factors based on the content of the respondents' answers. More specifically, three characteristics (individual, institutional, leadership), as reliant on the participants responses can be categorized as both negative and positive. More importantly, this study allows one to conclude that the two theories, Bland et al.'s (2005) model of faculty research productivity and Vroom's Expectancy Theory of Motivation (1964) which are framed on Western empirical data appear to hold a significant interpretive power for data collected in other regions, too. In order to get more results and test the predictive ability of these theories, it is necessary to conduct additional studies, especially quantitative and mixed method research.

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## Appendices

### Appendix A

#### INFORMED CONCENT FORM

**DESCRIPTION:** You are invited to participate in a **research study** about factors that influence on faculty research productivity of Kazakhstani universities. This study is important due to several reasons. Firstly, the study contributes increasing faculty research productivity to improve the quality of the research of the country. Consequently, Kazakhstani universities can compete among top world universities showing competitiveness in knowledge-based economy. Secondly, the study contributes to understanding the significance of research to faculty members who can strengthen their professional competencies while doing research.

You will be asked to voluntarily participate in Skype interview where the open questions will be created beforehand with the opportunity for the researcher to explore particular themes. During the interview you will be asked questions about the factors impacting research productivity and motivational influences that inspire faculty to conduct research. The interview will be audio recorded with your permission. The data will be used only for research purposes. After transcribing and analyzing the data, the recorded audio files will be destroyed. The results will be reported in such a way, that only general themes across interviews are described and no information is provided in the final paper about any of the actual participants. Confidentiality of your identities and answers will be guaranteed and protected.

**TIME INVOLVEMENT:** Your participation will take approximately 40-50 minutes.

**RISKS AND BENEFITS:** The risks associated with this study are minimal and they are related to sensitivity of questions.

However, your identity will be protected and we guarantee confidentiality of any information that you will provide. The data from the interview will not be accessible to third parties except me and my supervisor.

The benefits which may reasonably be expected to result from this study are that your answers will help to identify factors impacting on research productivity and motivational influences. Based on the outcomes of this study, policymakers, governmental officials who deal with research and HEIs administration will provide opportunities and conditions for faculty to increase research productivity. You may indirectly benefit from the changes by having the conditions of your work improved.

**PARTICIPANT'S RIGHTS:** If you have read this form and have decided to participate in this project, please understand your **participation is voluntary** and you have the **right to withdraw your consent or discontinue participation at any time without penalty or loss of benefits to which you are otherwise entitled. The alternative is not to participate.**

You have the right to refuse to answer particular questions. The results of this research study may be presented at scientific or professional meetings or published in scientific journals.

**CONTACT INFORMATION:**

**Questions:** If you have any questions, concerns or complaints about this research, its procedures, risks and benefits, contact the Master's Thesis Supervisor for this student work

***Independent Contact:*** If you are not satisfied with how this study is being conducted, or if you have any concerns, complaints, or general questions about the research or your rights as a participant, please contact the NUGSE Research Committee to at [gse\\_researchcommittee@nu.edu.kz](mailto:gse_researchcommittee@nu.edu.kz)

Please sign this consent form if you agree to participate in this study.

- I have carefully read the information provided;
- I have been given full information regarding the purpose and procedures of the study;
- I understand how the data collected will be used, and that any confidential information will be seen only by the researchers and will not be revealed to anyone else;
- I understand that I am free to withdraw from the study at any time without giving a reason;
- With full knowledge of all foregoing, I agree, of my own free will, to participate in this study.

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

**The extra copy of this signed and dated consent form is for you to keep.**

**Appendix B****Interview Protocol (for semi-structured interview)****Interview Protocol** (English version)

**Project:** Factors impacting research productivity at higher educational institutions in Kazakhstan.

**Time of interview:**

**Date:**

**Place:**

**Interviewee:**

**Interviewer:**

**Introduction**

Good morning/ afternoon! I am very grateful that you agreed to participate in this project which purpose is to explore the factors influencing faculty research productivity of Kazakhstani universities and define the motivational factors that drive faculty members to conduct research.

To achieve this purpose I am going to conduct interviews with different faculty members across Kazakhstani universities. I hope to receive full and outspoken answers from my interviewees. Please, be assured that all data collected will be confidential and your answers stay anonymous. Our interview will be tape recorded with your permission and stored in a password protected file which will be subsequently destroyed after transcribing. The interview will be about 50 minutes long.

Please read again and sign the consent form.

[Ask the interviewee's permission to use the tape recorder.]

[Test the tape recorder]

**Interview questions**

**Part 1:** General personal information

1. How old are you?
2. How long have you been working as a faculty member?
3. What university and department do you work at?
4. For senior faculty: What is your previous place of work (mainstream school, private university, department, administrative field etc.)?

For novice faculty: Where did you get higher education?

5. Do you have a family? How many kids and what ages?

**Part 2:** Questions about understanding of research and faculty roles (personal characteristics):

6. What does it mean for you to be a faculty member?
7. What is 'research' in your opinion?

Probing: Does the research relate to writing articles, writing for journals, presenting research paper at conferences?

8. What kind of skills and knowledge are important for faculty to conduct research?

**Part 3:** (institutional factors):

9. How would you describe your workload?

Probing Qs: Except teaching hours, do you spend time on service, engagement activities for university, and administrative work? How many hours a day do you spend on teaching, research, and service? At what hours do you engage in research?

10. What kind of supportive factors do faculty members need for doing research?

- a) In what way does your department support faculty research?
- b) In what specific ways does your university support to improve faculty research productivity?
- c) What else do you need from your department and university to be more productive in research?



d) What kind of development programs does the university provide for faculty to improve research skills and knowledge?

11. How does promotion and salary distribution affect your motivation to do research at your university?

12. How do the authorities of university and department make access for faculty to laboratories, libraries, and technical support to do research?

**Part 4** (leadership characteristics):

13. How are the leaders (dean, chair of department) engaged in faculty's research activities?

Probing Qs: How do the leaders take interest in improvement of faculty's research productivity? Do they provide for faculty any links to the research activities?

**Part 5** (Motivational factors)

14. To what extent are you motivated to do research?

15. What inspires and motivates you to do research?

[Thank respondents for participating in the interview. Assure them again about the confidentiality of the collected data. Acknowledge them about the possibility to do a member check]

**Appendix C****Sample of Invitation/Recruitment e-mail**

Dear Faculty member,

I am a graduate student conducting study about factors impacting research productivity at higher educational institutions in Kazakhstan as part of my degree program at Nazarbayev University Graduate School of Education. It would be very appreciative if you could participate in the interview which will take 40-50 minutes. You may choose the Skype - interview time and the language of the interview convenient for you. I have attached a consent form where you can find all necessary information about the study and confidentiality issues.

If you have any questions about this research, risks and benefits, and other questions, contact [kuralay.yassinova@nu.edu.kz](mailto:kuralay.yassinova@nu.edu.kz); +7701 520 92 95

Many thanks for your time and participation,

Kuralay Yassinoa,

2nd year student, NUGSE