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KEY RISK AREAS IN THE INNOVATIVE ACTIVITY OF AGRARIAN UNIVERSITY AND ITS MITIGATION MEASURES

The article focuses on the identification and analysis of the high-priority risks incurred by the agrarian university in the implementation of its innovative activities, outside the traditional core competence. In particular, the key risk areas include compliance, reputation, financial issues, student experience and staffing issues. The appropriate risk mitigation measures which may reduce the impact of each risk on the operating activities of the agrarian university are given along with the detailed risk description. The empirical data obtained during the review of the documents, discussions and interviews with the university administration show the effectiveness of the Ukrainian agrarian university's practice in implementing the risk mitigation measures.

Keywords: innovative activity, agrarian universities, risk, risk area, mitigation measures.

Introduction

The agrarian university, like the higher education institutions of other types, faces the impacts of challenging political, socio-economic and cultural factors that make its operating environment ambiguous. Over and above this, the university is moving into new areas of teaching, research, commercial and other activities across a wide array of disciplines and fields with greater exposure, where the university brand is being used but the scope of such activities is outside the traditional core competence. This creates a great deal of risks and uncertainties that's exactly why it is essential to understand the interaction between the identified risk and mitigation measures to be taken.

The researches of such scientists as L. Vitkin, T. Kostiukova, I. Lysenko, A. Sbrueva, T. Udovytska, H. Khimicheva focus on the analysis of possible risks to the functioning of the higher education system. In particular, T. Udovytska has put

a special emphasis on the risks of the Ukrainian educational sphere, which the quality of specialist training depends on one way or another. L. Vitkin and H. Khimicheva have identified the risks of the innovation activities of higher education institutions and the factors causing them. The scholars A. Yelesina and L. Serheeva have analysed the conditions of the occurrence of the HEI internal risks, their consequences for the functioning of educational institutions, and the mechanisms developed to manage each risk. However, the analysis of numerous researches proves the lack of fundamental studies in risk management in the Ukrainian pedagogical science. The interpretation of the concept of risk in this sphere is rather controversial. The review of the literature also indicates a lack of clear understanding of the relationship between different types of risks the universities face. Little research has been done on the mitigation activities aimed at reducing the university risks. In view of this, the relevance and social significance of the above problem have resulted in the selection of this topic.

The aim of the article is to identify the key risk areas in the innovative activity of the Ukrainian agrarian university, and to outline the risk mitigation measures. The following tasks have been set in the paper:

- 1) to detect and analyse the high-priority risks incurred by the agrarian university when conducting its innovative activities;
- 2) to determine the specific measures aimed at minimizing or eliminating unacceptable risks associated with the university's operations;
- 3) to reveal and approve the effectiveness of the Ukrainian agrarian university's practice in implementing the measures directed towards reducing the probability of the risk materializing or reducing the university's exposure to the risk.

Methodology

During the conduct of the research the empirical methods such as observation, analysis of documents, discussions, interviews with the university administration were used. The application of SWOT-analysis (strength, weaknesses, opportunities and threats) enabled to identify the strengths and weaknesses requiring the most attention from the university, as well as the threats being most likely to occur, with a view to their elimination.

Discussion

The changes arising from globalisation, technological advances, and the rising needs for highly skilled manpower have made it necessary for agrarian universities to be innovative in their approach to preparing students for success in a fast-changing global economy. Provided that innovation and change are indivertible, exposure to risk arising from innovation activities should be managed and mitigated. According to J. Stone and N. Keating, innovation presents both risks and opportunities, and those risks should be managed in a coordinated way. While innovation activities of institution tend to have higher risk profiles than other pursuits, the constant need for innovation, change and renewal are the imperatives that cannot be ignored or avoided by any organisation for any sustained period [9, p. 23]. In the research project “How Innovation Occurs in High Schools Within the Network of Innovative Schools: The Four Pillars of Innovation”, Douglas Watt specifies the innovation activity as the one which has “risk taking spirit” [11]. In view of this, understanding and managing the risks associated with the innovative activities of universities is “challenging and critical to preserving and protecting the reputation, resources, and standing in the local, national and international context” [8].

The key risks, the agrarian universities exposed to, fall into the following categories: compliance, reputation, financial issues, student experience and staffing issues.

Compliance risk is exposure to legal penalties, financial forfeiture and material loss an institution faces when it fails to act in accordance with industry laws and regulations, internal policies or prescribed best practices [10]. As the agrarian universities operate under the international, state, local and administrative laws and regulations that may be applied at the institutional level, they have to comply with all the legal requirements. In addition, the universities shall seek to ensure that their staff is compliant with all relevant legislation. For example, non-compliance with health and safety law and/or other regulations, may result in accident, injury, loss of life of staff or students; prosecutions; penalties; fines etc. In this regard, the practice of one of the Ukrainian agrarian universities (Sumy National Agrarian University) deserves special attention. In the university the legal clinic “Dovira” was created on the base of the laboratory of practical law under the subgrant from the American Association ABA/ROLI in 2009, and since that time the lawyers of the university and the legal clinic experts have been providing the

university's employees, academic staff representatives and students with some legal advice on various legal issues, thereby ensuring their compliance with applicable legislative, regulatory, and contractual requirements. For example, in 2011 the specialists of the legal clinic "Dovira" filed 25 claims with the court to protect the university's interests, and in 24 cases their claims were satisfied for the total amount of UAH 59,865,41. Moreover, the university not only provides in-house legal advice, but it renders the legal services when advice from external stakeholders and local population is required.

"Reputation risk arises when a situation, occurrence, business practice or event has the potential to materially influence the public and stakeholder's perceived trust and confidence in an institution" [12, p. 3]. Michael Huber considers reputational risk to be a genuine type of academic risk. According to him, reputational risks may be interpreted as the other side of, or complementary to, financial risks being the basis of organisational risks. Reputational risks range from assets management to the impact of press statements by staff, bad press about student excursions, equality and diversity issues to a dirty classroom [5, p. 16]. In an increasingly competitive market for higher education, it is not surprising that many universities have redirected their attention to evaluating their reputation and brand perception among prospective students and employers [4, p. 5].

"We don't see reputation risk management as having a start date and end date," says Vivek Karve, the chief financial officer of Marico, a leading consumer products manufacturer in India [1]. His statement has hit a bull's-eye as reputation risk should be managed as long as the university operates. In case of being improperly managed, this type of risk can quickly escalate into a major strategic crisis [1, p. 5].

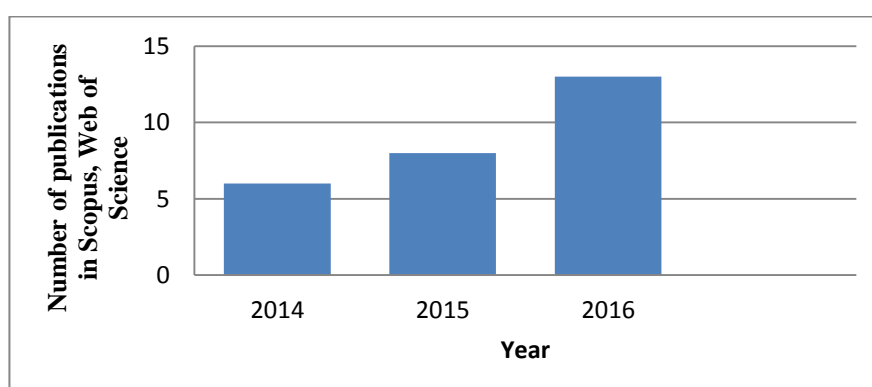
The majority of the agrarian university's key risks have a reputational risk component. This type of risk includes such elements as failure to attract top-quality students, failure to attract and retain high quality staff, failure to properly manage positive and negative publicity, failure to build positive, long-term relationships with foreign partners etc.

We also argue that reputational risk differs in its social construction from other risk categories by being a purely "man-made" product of social interaction and communication. Reputation is a communicative construct beyond the direct control of universities, often embedded in media-friendly external measures such

as ranking and ratings [6, p. 302]. In recent times, there has been a rapid growth of evaluative and standard setting institutions both at the global and national level in the educational sphere. Ranking systems and league tables are the instruments developed in order to evaluate university's brand and reputation, taking into account the teaching and research dimensions of the university performance to a large degree. The monitoring of league tables is considered to be a core method of managing reputational risk both in the Ukrainian and foreign universities. The publishing service "URAN" (Association of Users of Ukrainian Research and Academic Network URAN), to the order of Osvita.ua, carries out the scientometric monitoring of the entities of the academic publishing activity in Ukraine in terms of SciVerse Scopus database, on the basis of which the rating of Ukrainian higher educational institutions is annually made. The results of the university ranking are based on the indicators of the Scopus database, which is a tool for tracking citation of the scientific articles, published by universities or their staff. The Scopus database constantly indexes more than 20 thousand of scientific journals and hundreds of book series.

As of April 2017, the Scopus database includes 136 higher educational institutions of Ukraine, among which SNAU being in the middle of the table (fell to 65th place). Since most international rankings focus predominantly on the indicators related to the research function of universities, the agrarian university sets sights on the scientific performance and an increase in the total number of documents published in scholarly journals indexed in Scopus and Web of Science. In order to minimize the consequences of reputational risk, the university tries to improve its position in the Ukrainian university rankings, thereby attracting better media attention, sufficient number of high-quality students and staff. Diagram 1 below makes the fact of the improvement in the scientific performance of SNAU for the last three years clear.

Diagram 1. Publication of the scientific work results



Source: Reports on Scientific Work for the 2014-2016 period

But on the contrary it is worth mentioning that university rankings can have an adverse effect on the university reputation as there is a risk that time invested by universities in collecting and using data and statistics in order to improve their performance in the rankings may detract from efforts to progress in other areas such as teaching and learning or community involvement [7, p. 8]. Efforts by universities to improve their positions in the rankings may keep them from placing greater focus on elements of their mission that have no direct relevance to the ranking scores.

Besides high-quality publications in order to keep up academic reputation, the university focuses on the international collaboration by strengthening its links with reputable overseas educational institutions. The development of bilateral and multilateral international relations, educational and scientific projects is a priority for Sumy NAU. Cooperation with foreign partners is implemented using a variety of organisational forms: from student and academic staff mobility and participation in international conferences, seminars, “round tables” to the implementation of joint educational programs and participation in various international scientific and educational organisations.

In the system of international relations, pride of place goes to the arrangement of practical training and scientific internship abroad. The students of the university have practice in the farm businesses of Denmark, Holland, Germany, Poland, Austria, Switzerland, Sweden, Finland, USA, Australia and other countries. By so doing, through international engagement SNAU strengthens the university’s international reputation and image.

Financial risk is “an umbrella term for multiple types of risks including credit risk, market risk, exchange risk etc. In a university context, this includes reduction in public funding, inflation, bargaining pressures, enrollment, operating grant, collection of student fees, investment of trust and endowment funds and impact on international student enrolment which arise from currency fluctuation” [3, p. 3]. The financial risk of the agrarian university is made up of such elements as change in government funding policy resulting in a drop in income, failure to recruit (home or overseas) target student numbers, failure to meet financial liabilities, improper financial strategy and management, failure to secure value for money in the university’s resource use etc.

Nowadays, universities of all types face external challenges, such as public budget cuts, globalisation and internationalisation of higher education, which intensify competition but also provide new opportunities for activity expansion. Direct public funding is the most important income source for many European and Ukrainian higher education providers. But insufficient budget financing has resulted in the search for additional funding sources by higher educational institutions to ensure their functioning and fulfilling the statutory objectives. In this context, risk mitigation is a powerful driver for the strategic pursuit of new funding sources. Against the backdrop of a severe economic downturn, universities typically find themselves in a position where developing additional funding streams becomes a requirement if they are to fuel further growth in their activities. It is worth noting that this perception is shared by universities across different countries, regardless of the percentage of GDP allocated to higher education. Universities in Portugal, Ukraine, Switzerland, the Netherlands, Germany, Italy or the United Kingdom all shared this rationale [2, p. 61].

In terms of public financing reduction, the provision of fee-based services, including for overseas students, is one of the effective mitigation measures which enable universities to generate millions in revenues. In order to avoid being under-recruiting institutions that might face serious financial difficulties, the agrarian universities should attract international students, as in case with SNAU which got the hang of it some years ago, and as things stand, has increased its proceeds. Table 1 shows the evolution of the number of foreign students and simultaneous increase in budget revenues for the past seven years since 2010 when the first students were enrolled. The figures below prove the significant revenue growth opportunities due to the increase in the number of overseas students under the internationalisation of the educational process.

Table 1. Dependence of revenue growth from the quantity of overseas students

Year	Total number of overseas students	Total amount of budget revenues, UAH
2010	accurate data is not specified	185,000
2011	163	1,619,000
2012	184	2,690,000
2013	291	3,398,300

2014	345	4,727,900
2015	357	10,230,500
2016	340	11,575,00

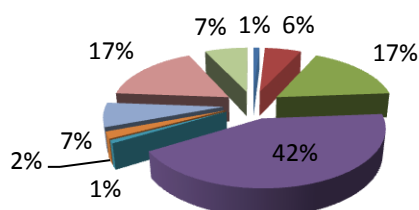
Source: Department on Work with Foreign Students, 2016

The capacity of universities to generate additional income relates to the degree of autonomy granted by the regulatory framework in which they operate [2, p. 9]. In order to mitigate negative consequences of a drop in income or to accelerate further growth of their activities, the Ukrainian agrarian universities have an option to grow and sale their own agricultural produce, to breed cattle and poultry, to lease land and other property etc. SNAU provides an example of the institution that is able to absorb the financial impacts of any changes and financial risks that materialise, without significantly changes to its revenue and expenditure policies. Graph 1 below shows the percentage of income obtained by the university from other sources of financing. It is beyond argument that the core mission of the university is to contribute to society through the pursuit of education and learning. In light of this, according to the data of 2016, the bulk of SNAU's revenues comes from the provision of education services and amounts to 62% (UAH 39,299,3 thous.), including education services to overseas students (17%) and domestic students on a fee-paying basis (43%). The share of income received from the economic activities (sales of agricultural produce and products of the public catering facility, assets lease and sales, provision of utilities and hostel services etc.) is equal to 31% (UAH 19,223,9 thous.), with the remaining portion received from the charitable contributions, grants, private donations and amounting for 7 % (UAH 4,274,2 thous.). As we can see, the additional sources of funding make up the significant proportion of its budget that enables the agrarian university to face a low financial sustainability risk under inadequate funding from government.

Graph 1. Revenues from special funds

Revenues from special funds

- Research activities
- Sales of agricultural products
- Training of international students
- Fee-paying education
- Assets lease and sales
- Other fee-based service provision
- Charitable contributions, grants, donations
- Utilities and hostel services
- Sales of products of public catering facility



Source: *The 2016 Rector Report*

In addition to securing alternative sources of funding, the financial risk mitigation techniques include accurate budgeting, regular monitoring of performance, regular liaison with funders, fundraising activities, clearly defined fraud policies, marketing of student accommodation etc.

The financial risk of universities is directly connected with the *risk of student experience* as recruitment difficulty or under-recruiting leads to a drop in real income. The risk of student experience has the following components: failure to recruit and retain sufficient number of students, failure to attract high quality students, failure to provide the educational services which meet the expectations of students, failure to develop high-quality programmes and enhance quality, improper evaluation of student academic performance, poor student experience resulting in loss of, or damage to the university reputation, poor graduate employability etc.

To reduce the impact of this type of risk the agrarian universities take the following innovative measures: review of training programs by agribusiness, professional development of academic staff in business structures, arrangement of the process of training at production site, participation of the company's representatives in demonstration lectures, effective recruitment strategy planning etc. In the situation when there is a reduction in the number of school leavers, the Ukrainian agrarian university tries to attract the graduates with the Diploma of Junior Specialist to reduce risk of low student recruitment. To avoid risk of failure to meet the student expectations, the university has introduced a new approach to the organisation of student practical training: integration with agribusiness on the

basis of requests and orders for the internship, pre-graduation practical training, and job placement.

The mitigation measures taken by universities for minimizing the risk of low student recruitment include occupational guidance for prospective students, arrangement of Open Days, coming into contact with schools or other educational institutions, creating an environment that facilitates the exchange of information and dialogue. In this regard, the practice of SNAU is worth noticing. Under the occupational guidance for schoolchildren, the university annually arranges the vocational guidance camp “Eco-Prof” during the holidays, at no expense to pupils. The goal of this event is to help school leavers choose their future profession, provide them with the most comprehensive information about the university, and create an atmosphere of immersion in student life etc. The students of the university participate in this event as well. The program covers training on personal development, practical acquaintance with the faculties and specialties, imitation games, master classes, eco-quests and others.

According to M. Huber, quality of academics and other senior staff, and attraction of the best staff, especially at professorial level, are the key factors in the university’s future performance and reputation [5, p. 16]. Hence *the risk of staffing issues* completes the list of the agrarian university’s risks of high priority. It includes the following components: inability to attract new staff and retain the existing one, failure to improve teaching capabilities of academic staff, reduction in the opportunities to appoint new staff to vacancies because of increased budgetary pressure, difficulties in recruiting appropriate existing and/or new staff to senior leadership positions in the university, failure to create adequate system of salaries and allowances in comparison to the European markets and competitor academic institutions from abroad etc.

The university’s mitigation measures directed at reducing the probability of the staffing risk materialising include the following: conclusion of the agreements on cooperation and development of academic mobility, introduction of the programs of staff training, development and accreditation, management of the university image as a good place to work, constant review of staff remuneration package, monitoring and regular review of facilities, introduction of the fast-track promotion scheme.

Conclusions

The challenges related to uncertainty about government funding, number of prospective students, stiff competition in attracting international students and applying new teaching methods based on online platforms have put pressure on the agrarian universities to improve existing or create entirely new products, processes and services. The HEI's engagement in innovative practices to improve efficiencies, find alternative income sources, facilitate cooperation with business sector and other higher educational institutions and enhance skill development results in greater exposure of multi-dimensional risks such as compliance, reputation, financial issues, student experience and staffing issues. In this respect, it is of a particular importance for the agrarian university to apply the risk mitigation techniques and tools in order to anticipate the adverse events that could potentially arise out of the course of the agrarian university's operations and mitigate their adverse consequences to ensure the overall stability of the institution.

The above findings could direct further research that seems essential for better understanding of the methodologies and tools for academic risk management in the Ukrainian agrarian higher school.

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КЛЮЧОВІ ЗОНИ РИЗИКУ В ІННОВАЦІЙНІЙ ДІЯЛЬНОСТІ АГРАРНОГО УНІВЕРСИТЕТУ ТА ЗАХОДИ З ПОМ'ЯКШЕННЯ НАСЛІДКІВ РИЗИКУ

АНОТАЦІЯ. Зміни, пов'язані з глобалізацією, стрімким технологічним прогресом і зростаючою потребою у висококваліфікованих кадрах, призвели до необхідності застосування інноваційного підходу до професійної підготовки студентів у вищій аграрній школі. З урахуванням того, що інновації і зміни в освітньому процесі є неминучими і відбуваються в умовах, що створюють певні ризики і невизначеність, нагальною необхідністю є не лише розуміння сутності таких ризикових подій, а й застосування заходів з мінімізації їх наслідків. Управління ризиками та розуміння взаємозв'язку між ідентифікованим ризиком і заходами, спрямованими на зниження ймовірності несприятливих процесів, що виникають при здійсненні наукової, освітньої та господарської діяльності, є критично важливими для захисту репутації сучасного університету, збереження його ресурсів і положення на місцевому, національному та міжнародному рівнях. У статті акцентується увага на ідентифікації та аналізі пріоритетних ризиків аграрного університету, що виникають у процесі здійснення інноваційної діяльності. Зокрема, розглянуто ризик нормативно-правової невідповідності, репутаційний ризик, фінансовий ризик, ризик, пов'язаний зі студентським контингентом, ризик, пов'язаний з науково-педагогічним персоналом, а також їх складові. Разом з докладним описом ключових зон ризику, автором наведено відповідні заходи, які можуть зменшити негативний вплив кожного ризику на ефективну діяльність аграрного університету. На основі емпіричних даних, отриманих в ході аналізу документів, а також під час проведення бесід та інтерв'ю з керівництвом університету, було виявлено приклади з практики реалізації заходів, спрямованих на зниження

ймовірності реалізації того чи іншого виду ризику або пом'якшення його наслідків, та підтверджено ефективність використання такої практики вітчизняним аграрним університетом.

КЛЮЧОВІ СЛОВА: інноваційна діяльність, аграрний університет, ризик, зона ризику, заходи з пом'якшення наслідків ризику.